

Vision Zero: Adopting a Target of Zero for Road Traffic Fatalities and Serious Injuries

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John Whitelegg and Gary Haq

For the DfT Horizons Programme, Department for Transport



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Abbreviations

ATK	Automatic Speed Control
BAU	Business-as-usual
CBA	Cost Benefit Analysis
CEC	Commission of Economic Community
DfT	Department for Transport
EC	European Commission
ECMT	European Conference of Ministers of Transport
ECU	European Currency Unit
ETSC	European Transport Safety Council
EST	Environmentally Sustainable Transport
EU	European Union
EUR	Euro
GDP	Gross Domestic Product
GNP	Gross National Product
ISA	Intelligent Speed Adaptation
ISO	International Organization for Standardization
KSI	Killed and Seriously Injured
NFT	National Society for Road Safety
NGO	Non-governmental organisation
NOK	Norwegian Kroner
OECD	Organisation for Economic Cooperation and Development
PACTS	Parliamentary Advisory Council for Transport Safety
RTA	Road traffic accidents
SEI	Stockholm Environment Institute
SNRA	Swedish National Road Administration
TØI	Norwegian Institute of Transport Economics
UK	United Kingdom

USDOT	United States Department of Transport
VSOL	Value of a Statistical Life
VTPI	Victoria Transport Policy Institute
WHO	World Health Organization

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1 Introduction

The UK currently has an excellent record in reducing road traffic accident (RTA) fatalities and serious injuries, which has been also repeated at local authority level. However this performance has not produced visibly safer streets and there are still serious concerns that we could do significantly better. These concerns have been well articulated by parliamentarians (e.g. PACTS), select committee inquiries into walking and pressure groups (e.g. Transport 2000, Slower Speeds Initiative and Liveable Streets). There are now signs in other countries that a more radical approach to this problem is gaining acceptance and credibility. Sweden is already among those countries with the lowest number of traffic fatalities in relation to its population. However, in spite of this record in 1997 the Swedish Parliament introduced a “Vision Zero” policy that requires that fatalities and serious injuries are reduced to zero by 2020. Swedish road safety work is based on a refusal to accept human deaths or lifelong suffering as a result of road traffic (Elvik and Amundsen, 2000). The main change instigated by Vision Zero is a new way of dividing responsibilities for road safety. This is estimated to achieve a possible reduction in the number of fatalities by a quarter to one third over a ten-year period (Vägverket, 2003).

This is a significant step change in transport policy at the European level and may soon be followed by Switzerland.¹ These changes may affect the UK if there is pressure on the European Commission to adopt a similar policy and develop a more pro-active and interventionist approach to RTA reduction.

In 2004 the Stockholm Environment Institute (SEI) at the University of York began a one-year study to examine the Swedish Vision road safety policy and to assess the implications of adopting a similar approach in the UK. The project was funded under the UK Department for Transport’s (DfT) Horizons Programme.

Objectives

The objectives of the study were to:

- provide a review of the Vision Zero policy in Sweden;
- determine the acceptability of a Vision Zero policy in other European Union countries and by international organisations;
- identify the circumstances leading to its adoption, the risks associated with such a policy, the costs and benefits of adopting a Vision Zero policy in the UK and to consult key stakeholders to test the acceptability or otherwise of such a policy;

- undertake a risk assessment of the UK adopting a zero road traffic accident fatality and serious injury policy; and
- undertake a backcasting analysis to identify a policy implementation schedule that would result in achieving a Vision Zero target in 30 years.

This final report of the study provides the main results of the one-year study and key conclusions.

Structure of the Report

This final report is divided into nine chapters, including this introductory chapter. Chapter 2 provides the context and background to the study and reviews European and Swedish road safety policy. Chapter 3 explains the methodology used in the study which included interviews with Swedish and European stakeholders, UK focus groups discussions and an on-line questionnaire survey of UK stakeholders. Chapter 4 presents a summary of the Swedish and European stakeholder interviews. Chapter 5 provides a summary of the UK focus group discussions while Chapter 6 provides an analysis of the UK stakeholder on-line questionnaire survey. Chapter 7 examines the costs and benefits of adopting a Vision Zero policy for road safety while Chapter 8 uses a backcasting approach to identify the possible pathways of implementing Vision Zero in the UK. Finally, Chapter 9 concludes the report by providing an analysis of the risks associated with adopting Vision Zero in the UK.

¹ Swiss Council for Accident Prevention: see <http://www.bfu.ch/english/portrait.html> accessed in February 2006

2 Context and Background

Road Safety in the European Union

In the European Union (EU) an estimated 1,300,000 accidents a year cause 40,000 deaths and 1,700,000 injuries on the roads (EC, 2003). The direct and indirect costs have been estimated at approximately EUR 160 billion per annum, which is equivalent to 2 per cent of the EU Gross National Product (GNP). There has been a steady improvement in road safety over the past 30 years within the EU (CEC, 2003). The overall volume of traffic has tripled while the number of road deaths has fallen by half. Figure 2.1 shows the decline in the number of people killed per million inhabitants over the period 1970 to 2000.

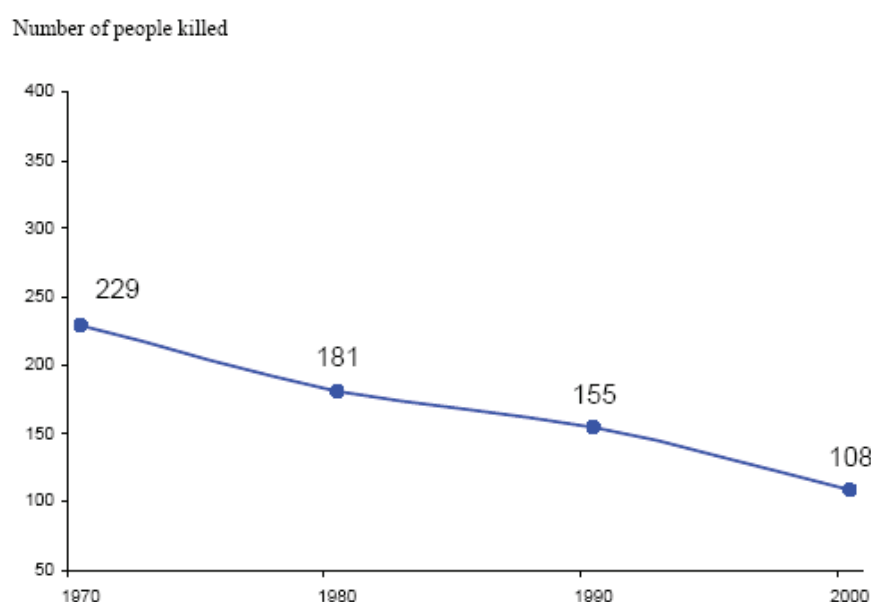


Figure 2.1: Road accidents number of people killed per million inhabitants, EUR-15, trend 1970–2000

Source: CEC (2003)

The European Commission (EC) identifies the main causes of accidents in the Member States as being:

- Excessive and improper speed, the cause of approximately one third of fatal and serious accidents and a major factor in determining the severity of injuries.
- The consumption of alcohol and drugs or fatigue. Drinking and driving is responsible for approximately 10,000 deaths each year. The problems of driving under the influence of drugs and fatigue are also increasing.

- Failure to wear a seat belt or crash helmet is a major aggravating factor in accidents. If the rate of seat belt use could be increased everywhere to the best international rate, more than 7,000 lives would be saved each year.
- The lack of sufficient protection provided by vehicles in the event of an impact. Analysis of accidents shows that, if all cars were designed to provide protection equivalent to that of the best cars in the same class in the event of an accident, half of fatal and disabling injuries could be avoided.
- High-risk accident sites (black spots). Roadside design and street furniture can also play an essential part in reducing injuries in the event of a collision and may have a positive impact on behaviour.
- Non-compliance with driving and rest times by professional drivers.
- Poor visibility of other users or an insufficient field of vision for the driver. The lack of visibility in the blind spot towards the rear of vehicles alone causes 500 deaths a year (CEC, 2003).

Consequently, many of the road safety improvements proposed by the Commission could be achieved simply by complying with existing rules. Certain population groups and categories of users are particularly vulnerable: young people between 15 and 24 years of age (10,000 killed a year), pedestrians (7,000 killed), people on motorcycles and mopeds (6,000 killed) and cyclists (1,800 killed). The irresponsible behaviour of certain drivers is the main cause of fatalities, excessive and inappropriate speed (15,000 dead), drinking, drugs, fatigue (10,000 dead), failure to use seat belts or helmets (7,000 dead) (CEC, 2003).

All EU Member States have the same problems, with varying levels of intensity. However, many of the new EU Member States have a low level of road safety, which provides an additional challenge. In 2001, there were 12 000 deaths on the roads in the enlargement countries.

Table 2.1 presents the road fatalities in the 25 EU Member States for the period 2000–2004. The enlargement of the EU has exacerbated the unequal distribution of road risk across the EU. New Member States have considerably higher road risk than the old EU-15. In 2002 38 per cent of people killed in road traffic crashes in 14 European countries were car drivers and 18 per cent car passengers (SafetyNet, 2005).

Table 2.2 presents the rate of car drivers and passengers killed per million population for selected EU Member States. The United Kingdom has the lowest rate followed by the Netherlands and Sweden.

Table 2.1: Road fatalities in EU Member States 2000–2004

	2000	2001	2002	2003	2004
Austria	976	958	956	931	878
Belgium	1470	1 486	1 315	-	-
Cyprus	111	98	94	97	117
Czech Republic	1 486	1 334	1 431	1 447	1 382
Denmark	498	431	463	432	369
Estonia	204	199	224	164	170
Finland	396	433	415	379	375
France	8 079	8 162	7 655	6 058	5 530
Germany	7 503	6 977	6 842	6 613	5 842
Greece	2 037	1 880	1 634	1 605	1 619
Hungary	1 200	1 239	1 429	1 326	1 296
Ireland	418	412	378	337	379
Italy	6 649	6 682	6 775	6015	5 625
Latvia	588	517	518	493	516
Lithuania	641	706	697	709	752
Luxemburg	76	70	62	53	49
Malta	15	16	16	16	13
Netherlands	1 082	993	987	1028	804
Poland	6 294	5 534	5 827	5 640	5 712
Portugal	1 877	1 671	1 668	1 542	1 294
Slovak Republic	628	614	626	648	608
Slovenia	313	278	269	242	274
Spain	5 777	5 517	5 347	5 394	4 751
Sweden	591	583	560	529	480
United Kingdom	3 580	3 598	3 581	3 658	3 368
EU25	52 247	50 385	49 807	-	-

Source: EC (2004)

Table 2.2: Car occupant fatality rates per million population by country, 2002

	Drivers	Passengers	Occupants
Austria	46	19	65
Belgium*	65	23	88
Denmark	32	14	46
France	59	23	82
Greece	48	28	76
Ireland	34	18	52
Italy**	42	19	61
Luxemburg	86	32	117
Netherlands	21	9	30
Portugal	39	30	68
Spain	48	30	77
Sweden	30	12	43
United Kingdom	20	11	31

* Data from 2001; ** Data from 1998

Source: SafetyNet (2005)

The EC proposed a target to reduce the number of road fatalities by 50 per cent by the year 2010 in the 2001 White Paper on European Transport Policy (CEC, 2001). Such an objective constitutes a serious collective undertaking to reduce the number of deaths rather than a legal requirement. However, only the European Parliament has so far endorsed this objective, and the Council has not committed itself.

Given that responsibilities for road safety are shared between different levels of government, it is not possible to rely solely on activities undertaken by the EU to achieve this target. The main aim is to provide the motivation for initiating shared activities and to stimulate action at all levels. In order to contribute to achieving this target the EC published in 2003 the European Road Safety Action Programme (CEC, 2003). The Programme guides EU action and provides a framework for all stakeholders.

It aims at:

- stimulating road users towards a more responsible behaviour in particular through a better respect of existing rules, initial and continuous training of private and professional drivers and a better enforcement against dangerous behaviour;
- making vehicles safer through improved technical performance standards;
- improving the road infrastructure, in particular through the identification and diffusion of best practices and the elimination of black spots.

Since a large number of stakeholders have a role to play towards road safety the EC has proposed that all stakeholders with decision-making powers, or acting in an economic, social or representative function should subscribe to a European Road Safety Charter.² Apart from complying with universal principles, each signatory would undertake to implement specific actions. The commitments given will be publicised and compliance with them will be monitored.

The mid-term review of the European Road Safety Action Programme published in February 2006 showed that progress had been made in reducing road fatalities in some EU Member States (CEC, 2006). In 2001 there were 50,000 road fatalities in the 25 countries which make up the EU. The joint target proposed in 2001 and updated after enlargement in 2004 is that by 2010 there should be no more than 25,000 fatalities a year. In the period 2001–2005 there was an approximately 14 per cent reduction in road fatalities in nine Member States (Germany, Estonia, France, Italy, Luxembourg, Malta, the Netherlands, Portugal and Sweden). While in the same period there was a 17.5 per cent reduction in total EU road fatalities with approximately 41,600 occurring in 2005. Despite the progress made in

² See http://europa.eu.int/comm/transport/roadsafety/charter/welcome_2_en.htm accessed in February 2006

reducing road fatalities in EU Member States, it is still someway off the 25 per cent needed to achieve the 2010 target (CEC, 2006; ETSC, 2005).

The Swedish Approach to Road Safety

The responsibility of road safety has traditionally been placed on the individual road user rather than on the designers of the system. Road safety has tended to focus on encouraging good behaviour by road users via licensing, testing, education, training and publicity. Sweden is among those countries with the lowest number of traffic fatalities in relation to its population. However, in spite of this excellent record, in 1997 the Swedish Parliament introduced a new approach to road safety called “Vision Zero”. Vision Zero is based on a refusal to accept human deaths or lifelong suffering as a result of road traffic accidents (Elvik and Amundsen, 2000). It requires moving the emphasis away from reducing the number of accidents to eliminating the risk of chronic health impairment caused by road accidents. Vision Zero in Sweden requires fatalities and serious injuries to be reduced to zero by 2020.

The 1990 Swedish National Traffic Safety Programme set a target of less than 600 fatalities for traffic safety by 2000. In 1993, the Road Safety Office merged and became the Swedish National Road Administration (SNRA). In 1994 the SNRA, now responsible for national traffic safety work, presented a National Traffic Safety Programme for the period 1995–2000. A new target of 400 fatalities for the year 2000 was adopted. This original target was achieved in 1994. The intentions of the National Traffic Safety Programme, with ten sub-targets for traffic behaviour, were not reached but abandoned with the discussion of the Vision Zero concept. An interim target of reducing the number of road accident fatalities from 600 in 2000 to 270 in 2007 was adopted as a move towards the Vision Zero target. The annual number of fatalities has remained constant during the period 1994 to 2004. In 2004, there were 480 deaths (EC, 2004).

Vision Zero requires a paradigm shift in addressing the issue of road safety (Rechnitzer and Grzebieta, 1999). It requires abandoning the traditional economic model where road safety is provided at reasonable cost and the traditional transport model in which safety must be balanced against mobility. At the core of the Vision Zero is the biomechanical tolerance of human beings. Vision Zero promotes a road system where crash energy cannot exceed human tolerance. While it is accepted that crashes in the transport system occur due to human error, Vision Zero requires no crash should be more severe than the tolerance of humans. The blame for fatalities in the road system is assigned to the failure of the road system rather than the road user (Wadhwa, 2001).

Vision Zero is based on the ethical imperative that (Tingvall and Haworth, 1999):

“It can never be ethically acceptable that people are killed or seriously injured when moving within the road system.”

Accidents have to be prevented from leading to fatalities and serious injuries by designing roads, vehicles and transport services in a way that someone can tolerate the violence of an accident without being killed or seriously injured. Common long-term disabling injuries and non-injury accidents are outside the scope of the vision. Vision Zero is estimated to achieve a possible reduction in the number of fatalities by a quarter to one third over a ten-year period (SNRA, 2003).

Vision Zero strategic principles are:

- The traffic system has to adapt to take better account of the needs, mistakes and vulnerabilities of road users.
- The level of violence that the human body can tolerate without being killed or seriously injured forms the basic parameter in the design of the road transport system.
- Vehicle speed is the most important regulating factor for safe road traffic. It should be determined by the technical standards for roads and vehicles so as not to exceed the level of violence that the human body can tolerate.

The approach is:

- To create a road environment that minimises the risk of road users making mistakes and that prevents serious human injury when designing, operating and maintaining the state road network.
- To set an example in the SNRA’s own operations through the quality assurance (from a road safety perspective) of journeys and transports in all areas of activity, both those undertaken in-house and those contracted.
- To analyse accidents that have resulted in death or serious injury in traffic and, where feasible, initiate suitable measures so as to avoid the repetition of such accidents.
- To stimulate all players within the road transport system to work resolutely towards achieving mutually targeted objectives and conduct the work on road safety in close co-operation with all players within the road transport system.
- To take advantage of, and further develop, the commitment of the general public to safer traffic.

Vision Zero emphasises what the optimum state of the road should be rather than possible ways of reducing current problems. The main change instigated by Vision Zero is a new way of dividing responsibilities for road safety. Rather than emphasising the responsibility of the road user alone, Vision Zero explicitly states that responsibility is shared both by the system designers and the road user:

1. The designers of the system are always ultimately responsible for the design, operation and use of the road transport system and thereby responsible for the level of safety within the entire system.
2. Road users are responsible for following the rules for using the road transport system set by the system designers.
3. If road users fail to obey these rules due to lack of knowledge, acceptance or ability, or if injuries occur, the system designers are required to take necessary further steps to counteract people being killed or seriously injured.

In 1999, a short-term action plan was launched by the Swedish government, containing 11 points aimed at strengthening and stimulating traffic safety work in accordance with Vision Zero principles (Ministry of Industry, Employment and Communications, 1999):

1. A focus on the most dangerous roads (e.g. priority for installing centre-guardrails for eliminating head-on collisions, removing obstacles next to roads, etc.)
2. Safer traffic in built-up areas (e.g. a safety analysis of street networks in 102 municipalities led to reconstruction of streets; the efforts are continuing.)
3. Emphasis on the responsibilities of road users (e.g. creating more respect for traffic rules in particular with regard to speed limits, seat belt use, and intoxicated driving.)
4. Safe bicycle traffic (e.g. campaign for using bicycle helmets, a voluntary bicycle safety standard.)
5. Quality assurance in transport work (e.g. public agencies with large transportation needs will receive traffic safety (and environmental impact) instructions on how to assure the quality of their own transportation services and those procured from outside firms.)
6. Winter tyre requirement (e.g. a new law mandating specific tyres under winter road conditions.)
7. Making better use of Swedish technology (e.g. promoting the introduction of technology - available or to be developed - that relatively soon can be applied, such as seat belt reminders, in-car speed adaptation systems (ISA), alcohol ignition interlocks for preventing drinking and driving, and electronic driver licences.)
8. Responsibilities of road transport system designers (e.g. establishment of an independent organisation for road traffic inspection is proposed by a commission of inquiry on the responsibilities of the public sector and the business community for safe road traffic.)
9. Public responses to traffic violations (e.g. a commission of inquiry is reviewing existing traffic violation rules in the light of the Vision Zero principles and of ensuring due process of law.)
10. The role of voluntary organisations (e.g. the government is evaluating the road safety work of the 'Nationalföreningen för trafiksäkerhetens främjande' (National Society for Road Safety (NTF)) and its use of state funds.)
11. Alternative forms of financing new roads (e.g. possibilities are studied for other forms of supplementing public financing of major road projects.)

In the autumn of 2001 the Government presented an infrastructure plan, where the traffic safety work will fulfil the 2007 target.

Operational Strategy for Vision Zero

While acknowledging the importance of political commitment to a safe road system, Tingvall and Haworth (1999) outlined an operational strategy and key steps of Vision Zero to be implemented in the shortterm without political commitment. These three key steps in an operational strategy include:

1 *Gradually aligning vehicle speed to the inherent safety of the system*

This involves ‘rating’ the infrastructure-speed in terms of safety and compares the end product with the current situation. This will determine whether it is more effective to reduce speed or modify infrastructure. Aspects to be considered in determining a safe travel speed include:

- roadsides
- land separation
- intersection
- unprotected road users

A high-ranking road received a top rating if it fulfills the requirement in Table 2.3.

2 *Improving vehicles to address driver behaviour issues*

In terms of vehicle safety, three steps can be taken: seat belt interlocks; alcohol interlocks and intelligent speed limiters. In the long term such measures will have a substantial impact, especially within a safer infrastructure.

3 *Stimulating the community to use the system in a safer way*

By demanding professional users of the system to focus on issues such as speed, purchase of cars and fatigue a large proportion of the traffic can be influenced. A safe road system would affect transport within an organisation as well as transport provided by others (e.g. taxis, rental cars etc). A “safe” way of using the road transport system should be defined in order to assist the market; for example, in the form of modern quality management systems such as the ISO standards. This would ensure that the process is demand-driven rather than regulatory.

Vision Zero is a long-term strategy in which the total road safety system is ‘aligned’ with the vulnerabilities of road users. A system which is currently based on tolerating human error will eventually be changed to one where the responsibility for the safety of the system is shared between key actors such as the automotive industry, road engineers and traffic planners (Tingvall and Haworth, 1999).

Safety and Mobility

Under the concept of Vision Zero the loss of human life and health is unacceptable. This requires the road transport system to be designed to prevent such an event occurring. Mobility therefore should not be traded for safety. Speed is used in Vision Zero as an operational definition of mobility. It states that speed must be limited to a level which guarantees an inherently safe road system. Speed limits should be determined by the technical standards of vehicles and roads so as not to exceed the level of violence a human body can tolerate. The principle implies designing the system for certain use with margins for human error and failings (SNRA, n.d.).

Tingvall and Haworth (1999) give the example of a pedestrian hit by a well-designed car. The human tolerance of the pedestrian will be exceeded if the vehicle is travelling over 30km/hr. Therefore if higher speeds are desired in urban areas, the option would be to separate pedestrian crossings from traffic. If not, pedestrian crossings or vehicles would need to be designed to generate speeds of a maximum of 30 km/h. Table 2.3 presents the maximum speed related to infrastructure based on best practice in vehicle design and 100 per cent restraint use. It provides an example of an inherently safe system i.e. one that does not produce serious or fatal injuries – a key goal of speed management. It follows that the safer the roads and vehicles the higher the speed that can be accepted (Tingvall and Haworth, 1996).

Table 2.3: Long-term maximum travel speeds based on best practice in vehicle design

Type of infrastructure and traffic	Possible travel speed (km/h)
Locations with possible conflicts between pedestrians and cars	30
Intersections with possible side impacts between cars	50
Roads with possible frontal impacts between cars	70
Roads with no possibility of a side impact or frontal impact (only impact with the infrastructure)	100+

Source: Tingvall and Haworth (1999)

Comprehensive Fatality Investigations

Since 1997, all crashes in Sweden that resulted in fatalities have been investigated individually (SNRA, 1998). The objective of the investigations is to determine what factors caused the fatality versus what caused the crash. Crashes are divided into three groups:

Excessive force – In this case, the fatality was caused by a combination of speed, roadway infrastructure, and the vehicle's safety capabilities. The road user followed all laws and regulations to the best of his ability, but made an error that resulted in a fatal crash. An example of this type of crash is someone leaving the roadway and hitting a tree. Countermeasures for these types of crashes usually

focus on improving roadway infrastructure and vehicle crashworthiness and their interaction. Setting speed limits related to the crashworthiness of the elements has been also suggested. Between 1997 and 1999, two-thirds of the crashes that occurred in Sweden were in this category.

Excessive risk – The road user in this case was killed because of a lack of personal protection, because it was either not available or not used. An example is a vehicle occupant who does not use a seat belt or a motorcyclist who does not wear a helmet. Countermeasures include education on the use of seat belts and improving the general crashworthiness of vehicles.

Beyond system restrictions – In this case, the road user violated road rules and it had an impact on the severity of the crash. Speeding is included in this category. Suggested countermeasures include limiting access to the system by these types of people (e.g., alcohol ignition locks) and automated or manual police enforcement.

The three groups of fatal crashes are defined by which component of the road safety failed. For example, 62 percent of fatalities investigated were found to result from a mismatch between roadway speed and the passive safety designed into the roadway (Larsson, 2002). The results of the investigation have been used to improve safety standards and implement safety improvements in Sweden. They support the shared responsibility basis of Vision Zero because all interacting components of the crash environment were investigated (e.g. vehicle, design, and driver) and the ultimate cause of the fatality determined. The potential involvement in a crash of many different groups was considered. For example, if a crash involved a drunk driver who crossed the roadway centerline, hit a taxi, and caused the death of a baby, the responsibility of several different roadway safety groups might be represented by the following newspaper headlines (USDOT, 2003):

- Drunk Driver Kills Baby (traditional)
- People Call for Median Barrier (roadway authority)
- Ambulance Arrives Two Hours After Baby Dies (emergency services)
- Taxi Companies Share Responsibility To Protect Children (commercial taxi driver industry)
- Cars Provide Insufficient Child Protection (vehicle industry)
- Law Loophole Allowed Baby to Ride Without Protection (enforcement or legal profession)
- Alcohol Interlocks Needed Now (driver safety groups)

Proposed solutions to avoid future road fatalities also are often multidisciplinary. These include driver education on seat belt use combined with roadside design improvements. However, these types of solutions require comprehensive coordination and communication within and between safety agencies (USDOT, 2003).

Implications of Vision Zero for Road Fatalities

Proponents of Vision Zero see human life as a basic human right to be protected from fatal injuries. While humans are fallible and make mistakes in using the road system, these mistakes should not carry the death penalty (Elvik, 1999). The ethical principle on which Vision Zero is based, that death is unacceptable, means that there is a moral obligation to design cars, roads and the rules of the road to protect road users from being killed in traffic. Vision Zero explicitly rejects the trade of human life against other objectives. It also rejects the use of cost-benefit analysis (CBA) to guide priority setting in road safety policy. Tingvall (1997:56) states:

“If a new road, new car design, new rule etc. is judged as having the potential to save human life, then the opportunity must always be taken, provided that no other more cost-effective action would produce the same benefit.”

Although Sweden has a comparatively good road safety record, Swedish policies are still considered to be ineffective in improving road safety. Elvik and Amundsen (2000) indicate that current policy priorities are inefficient in Sweden and conclude that road safety could be substantially improved if policy priorities were based more on CBA than they are today. They argue that cost-effective road safety measures can prevent more than 50 per cent of road fatalities in Sweden. However, current policies will prevent approximately 10–15 per cent of the current number of road fatalities over the next 10 years. Many cost-effective measures are not being implemented. By rejecting the use of CBA to set priorities, Elvik (2003) argues that advocates of Vision Zero are in effect rejecting a road safety policy that would give far better results than current road safety policies.

The main sources of inefficiency in current road safety in Sweden are (Elvik, 2003):

- Lack of power to introduce new vehicle safety standards – this power now resides with the European Union;
- The existence of social dilemmas, that is situations in which measures that are cost-effective from a societal point of view are loss making from the point of view of individual road users;
- Priority given to other policy objectives, which cannot be adequately assessed by CBA, primarily objectives related to regional development.

Elvik (2003) concludes that the amount of resources that is currently spent on road safety policy in Sweden is sufficient to cover the cost of all cost-effective road safety measures, provided the use of inefficient measures ceases.

The ethical rule on which Vision Zero is based can be interpreted as approval of an objective for maximising life saving in general (Elvik, 1999). An objective of eliminating a specific cause of death could imply there are fewer resources available to control other causes of death. This could potentially

result in an increase in general mortality. Elvik examined the implications of implementing a hypothetical Vision Zero programme for traffic fatalities in Norway. The amount of resources available to control general mortality in society can be measured in terms of income per capita, where there is a negative relationship between income and mortality. The loss of income that induces an additional statistical death is estimated to be between 25 and 317 million NOK (3.8–47.5 million US dollars).

The implementation of such a programme has the potential to reduce traffic fatalities in Norway from approximately 300 per year to 90 per year. However, applying the lowest estimate of income loss that induces an additional death (25 million NOK), Elvik estimated that implementing the entire hypothetical Vision Zero programme would increase general mortality by approximately 1,355. This would lead to a net increase of approximately 1,145 deaths per year (1,355 minus 210 prevented traffic deaths). Applying the highest estimate of income loss (317 million NOK) of an additional death, Elvik estimates that the implementation of the hypothetical programme would increase mortality by approximately 110. In this case, there would not be an increase in overall mortality.

Elvik concludes that the possibility of a greater effort to eliminate traffic fatalities being counterproductive in terms of overall mortality cannot be ruled out. He argues that this is a moral dilemma for advocates of Vision Zero (who view the ethical principle of doing everything to prevent death or serious injury) who need to justify the vision.

The Norwegian Ministry of Transport and Communications adopted a National Transport Plan 2002-2011 on 15 February 2001. The policy document included all transport sectors and special attention was given to road safety. The Ministry of Transport and Communications chose to highlight the area of road safety via the Road Safety Strategy 2002-2011 in parallel with the presentation of the National Transport Plan. Approximately 12,000 people are killed or injured annually in road accidents in Norway, of whom more than 300 lose their lives and about 1,400 are seriously injured. The Norwegian Government regards the extent of the casualties on Norwegian roads as a serious problem to society. The government has adopted as a long-term road safety effort a vision of no road fatalities or road accidents causing lifelong injury or death (Ministry of Transport and Communications, 2002).

Conclusion

Vision Zero is a visionary target. Most people (i.e. focus groups) would find the objective of zero road fatalities as highly laudable. However, at present it is not possible to know the full implications of the Vision Zero approach to road safety. In the literature there is little or no information on the relative effectiveness of this new approach to road safety in Sweden. In the period 1997–2004 fatalities in the UK were reduced from 3,599 to 3,221 (11 per cent reduction) (DfT, 2005) and in Sweden from 541 to 495 (a 9 per cent reduction) (SNRA, 2005). During the period 1990–2000 there was a 21 per cent reduction in overall road fatalities in OECD countries. Over the same period, there was a 0.5 per cent increase in the number of injury crashes. While Sweden and the UK have already achieved major reductions in road fatalities since 1990, further reductions have become progressively difficult to achieve (OECD, 2002). The aim of this study is to further determine the effectiveness of the Vision Zero approach to road safety and the potential implications of adopting a similar approach in the United Kingdom.

3 Methodology

In order to elicit views on the effectiveness of Vision Zero and the acceptability and implications of adopting a similar approach to road safety in the UK, interviews were conducted with Swedish and European stakeholders, a questionnaire survey was undertaken of UK stakeholders and a number of focus group discussions were held with UK citizens.

Interviews with Swedish and European Stakeholders

In order to gain a better understanding of Swedish road safety policy nine key Swedish stakeholders were interviewed. The stakeholders included representatives from national government, academic institutions and the motor industry. The objective of the interview was to identify the key issues, pressures and evidence which led to the adoption of the policy and to determine the main objections against the policy and the current perception of progress towards the objective of Vision Zero (see Table 3.1).

In addition, six European road safety policy stakeholders were also interviewed. The stakeholders included representatives from international organisations, non-governmental organisations and academic institutions. The objective of the interviews was to identify the current perception of Vision Zero policy and potential for the adoption of such a policy throughout the European Union.

UK Focus Groups

A Vision Zero policy towards road safety is likely to generate strong reactions on both “sides” of the debate. It is important to anticipate these reactions and to be aware of intellectual arguments, perceptions, and areas of evidence and strength of view. In order to determine the acceptability of a Vision Zero strategy within the UK a total of twenty-nine focus groups were held throughout England. The aim of the focus groups was to test public opinion and attitudes of a range of citizens. Table 3.2 lists the locations of the different focus groups and the number of people who attended. A total of 232 people participated in the focus groups.

Table 3.1: Swedish and European stakeholders interviews

	Name	Position	Organisation	Date	Mode
Swedish Stakeholders					
1	Lars Anell	Board Member	Volvo, Stockholm, Sweden	28 September 2004	E-mail contact
2	Terje Assum	Transport Economist	Transport Economics Institute, Oslo, Norway	4 November 2004	Telephone
3	Anders Englund	Professor of Psychology	Stockholm University/Uppsala University, Sweden	15 November 2004	Telephone
4	Per-Anders Forstorp	University lecturer	Computer science and numerical analysis, KTH Stockholm	28 October 2004	Email
5	Anders Kullgren ,		Folksam, Swedish Insurance Company, Stockholm, Sweden	1 October 2004	E-mail contact
6	Hans Erik Pettersson	Research and Marketing Director	Swedish National Road and Transport Research Institute, Goteburg Sweden	2 December 2004	Email
7	Matti Roine	Director of Road Safety Unit	Ministry of Transport and Communications, Finland	10 October 2004	Email
8	Claes Tingvall	Director of Traffic Road Safety	Swedish National Road Administration, Stockholm, Sweden	1 October 2004	Telephone
9	Ines Uusmann	Former Minister of Transport (introduced Vision Zero)	Ministry of Transport, Stockholm, Sweden	3 February 2005	Telephone
European Stakeholders					
10	Joerg Beckmann		European Transport Safety Council	17 May 2005	Telephone
11	Brigitte Chaudhury	President	European Federation of Road Traffic Victims	25 June 2005	Telephone
12	Helmut Holzapfel	Professor	University of Kassel	16 November 2004	Telephone
13	Pedder Jensen		European Environment Agency	17 May 2005	Telephone
14	Dimitrios Theologitis	Head of Road Safety Unit	DG TREN, European Commission	5 July 2005	Telephone
15	Francesca Racioppi	Technical Officer	World Health Organisation	24 May 2005	Email

Questionnaire Survey of UK Stakeholders

In order to elicit views from a range of UK stakeholders on Vision Zero policy approximately 55 stakeholders were contacted and requested to complete an on-line questionnaire survey. The stakeholders included central government, members of parliament, local government associations, motoring organisations, health organisations, non-governmental organisations, the police and other organisations including road safety specialists.

Table 3.2: Focus group participants

	Geography	Location	Date	Number of participants	Male	Female
1	London	Camden 1	5 May 2005	6	5	1
2		Camden 2	5 May 2005	7	2	5
3		Hereford 1	13 April 2005	8	5	3
4		Hereford 2	21 April 2005	8	4	4
5		Hillingdon 1	19 April 2005	10	3	7
6		Hillingdon 2	20 April 2005	8	5	3
7		Islington 1	25 April 2005	10	5	5
8		Islington 2	28 April 2005	10	4	6
9		Islington 3	7 May 2005	8	3	5
10		Thamesmead 1	29 April 2005	8	2	6
11		Thamesmead 2	29 April 2005	6	1	5
12	Metropolitan	Leeds 1	25 April 2005	5	2	3
13		Leeds 2	25 April 2005	5	3	2
14		Leeds 3	26 April 2005	8	6	2
15		Leeds 4	27 April 2005	10	6	4
16		Leeds 5	27 April 2005	9	3	6
17	Urban free-standing	Burnley	16 April 2005			
18		Preston 1	21 April 2005	8	3	5
19		Preston 2	21 April 2005	8	2	6
20		York 1	16 March 2005	9	7	2
21		York 2	17 March 2005	9	6	3
22	Rural with small towns and villages	Taunton 1	21 April 2005	8	4	4
23		Taunton 2	26 April 2005	7	4	3
24		Warminster	14 April 2005	10	8	2
25		Ulverston 1	23 April 2005	10	5	5
26		Ulverston 2	23 April 2005	10	4	6
27	Deep rural	Camelford 1	5 April 2005	6	3	3
28		Melksham	27 April 2005	7	5	2
29		Helston	11 May 2005	6	4	2
	Total			232	118	114

Backcasting Analysis

A backcasting analysis was undertaken to identify a policy implementation schedule that would result in achieving in the UK a Vision Zero target within the next 30 years. This results of this backcasting is presented in Chapter 8.

4 Swedish and European Stakeholder Perspectives

Swedish Stakeholders

Why did Sweden introduce Vision Zero?

Ines Usmann was the Minister of Transport who introduced the Vision Zero policy in the mid-1990s. She outlined two reasons for the introduction of Vision Zero. After a long period of decline in road deaths and serious injuries, the rate had plateaued and there was no further decline. Sweden had to do something to sort out this problem. It was not acceptable that the decline should stop. Part of the thinking was connected to the Estonia ship disaster. The MV Estonia was a ferry sailing from Tallinn to Stockholm in 1994, which sank with the loss of 852 lives. This created a strong reaction in favour of transport safety. This made radical actions in safety much more politically acceptable.

Secondly, the government was very much aware of a general commitment to Vision Zero principles in health and safety at work. The construction of the Oresund Bridge and Tunnel between Sweden and Denmark was a major civil engineering project and no one was killed (unlike the Channel Tunnel project which had many deaths). There are no logical reasons why this principle should not apply to the road environment. This was probably a reflection of Swedish society and the general view in the mid-1990s in Sweden was that this was the right time to do it.

Claes Tingvall was Director of the Swedish National Road Administration (NRA) and was a key figure in introducing the concept. He explained that Vision Zero was introduced as Swedish national road safety policy in 1997 because of a window of opportunity represented by a new Minister of Transport (Ines Usmann) and a new Director of the NRA (Claes Tingvall).

Both these key figures were very interested in taking a fresh look at the problem of deaths and injuries on the roads and both were very keen to establish a high ethical and human value centred approach. This involved a discussion of targets and acceptability. What level of deaths on the roads of Sweden is acceptable? Tingvall emphasized that the time was “right” for a new approach. He had replaced a previous Director of the NRA and there was an expectation of a change of direction. This coincided with a strong interest in Sweden in public health, quality of life and zero defects and this produced a fertile ground for Vision Zero. This new atmosphere was reinforced by the view that traditional economic concerns and cost benefit analysis were not in tune with an ethical and value centred approach.

There was a media debate about Vision Zero and the media was supportive but this was not a planned process and there was some resistance.

On the political level, there was relatively little debate about Vision Zero. This was because of the overwhelming significance and acceptability of the value centred and ethical underpinnings of Vision Zero. It was very difficult to be opposed to this policy. It was also because the policy debate did not include detailed measures, interventions or options for implementation. There was no debate or argument about speed limitation or urban design or pedestrians and cycling facilities.

Anders Englund (Swedish Transport Researcher) believed that the reason why Sweden introduced the Vision Zero policy is not because of a particularly well-developed ethical and responsible approach to such things in Sweden. It was an initiative to make a new start; to stir up a political and public sector where different activities for several years have not resulted in any large changes. **Per-Anders Forstorp** (University Lecturer) also believed something needed to be changed about how traffic safety is conceived and Vision Zero was seen as radical approach to understanding the violence in traffic starting from anatomical constraints. There is also a history of highly idealistic goals in popular movements in Sweden. Vision Zero can be understood within this context. However, the new thing is of course that this idealism is balanced with an extreme concern for being result orientated and accountable.

Matti Roine, Director of the Road Safety Unit, Ministry of Transport and Communications, Finland believes that Vision Zero reflects how Scandinavians give a lot of importance to human life and well-being and that it is rooted in Scandinavian society. As the accident figures started to worsen there was a need for a new direction.

Why do you think other countries have not followed suit and adopted Vision Zero?

Usmann explained that Swedes are used to the notion of having a “vision”. A vision is something that can be constantly used to inform policy development and thinking. Other countries like to use “goals” and these are not so powerful. A vision is more real. It is what individuals and families think about. Families do not think in terms of losing family members. They have a vision that everyone will be safe. Vision Zero is required and it is quite understandable. Englund believes Sweden has a well-developed ethical and responsible approach in general.

Who supported and who opposed (if any) the Vision Zero concept?

Usmann explained that there was resistance from the Ministry of Justice (who are in charge of the legal system) but this was overcome. There was also some resistance from the police and Volvo was sceptical. All political parties were supportive and all local government agencies were also supportive. The National Roads Administration was supportive and they made it possible to introduce 30kph limits in towns. **Lars Anell** (Volvo Board Member) believed that Vision Zero was a political gimmick. With all the requirements for political correctness, no one could say no to a vision that envisaged a society where no one was killed or hurt by road traffic. It is possible to create such a society but we would not want that kind of society - all old people and children kept permanently indoors and with a maximum speed 15 miles an hour etc.

The main obstacle was money from government. More money was needed to deliver Vision Zero (especially safety measures on roads/re-building of roads). There is still not enough money and this is still a problem.

The main resistance to the policy came from inside and came from transport professionals and civil servants, the “transport bureaucrats”. Economists within the civil service did not like the idea. NGOs, police and local government were very supportive. They came on board very quickly. Car manufacturers were “quite positive” but the road building industry was “nervous”.

The Vision Zero policy still has to be discussed and reinforced every day. It will not deliver the desired results in the early days, this will take time. Tingvall explained that Sweden would not reach its intermediate target until 2007.

Englund also explained that the reasons why there was little opposition were self-evident. On what grounds could one really oppose such a vision? What other vision can you have? He believed that as long as you talk about a vision it functions like that. As soon as one begins to talk about a goal other factors start to be considered. Kullgren believed it was so well accepted because some people did not understand the idea: some still do not as it is a zero long-term vision and not a goal that must achieve zero fatalities. Those who understand that it is a vision do not oppose it.

Roine explained in that Finland Vision Zero has not been presented to the public due to different mixed views from experts and government. At the political level, it has been discussed but not really understood. Roine sees Vision Zero as a developing paradigm,

Is it working well now?

Usmann believes that Vision Zero is now becoming a reality. It is getting nearer and all discussions are “infected” with Vision Zero thinking. This is its main importance. It can drive thinking and action. It is doing its job but still needs more time. Every government has to work on Vision Zero anew. There is a great danger that a new government will forget it and this must not be allowed to happen.

Tingvall believes Vision Zero has produced a very positive standard of thinking about road safety and has established a high level of consensus and shared values across diverse groups of people including the automotive industry, Volvo, and politicians. One of the main impacts of Vision Zero has been to produce a high level of commitment to produce coordinated efforts aimed at delivering welfare to the citizen and putting the citizen at the centre of our thinking. Roine believes that Vision Zero is working in theory, but not so well when we examine the figures “As a vision it is a driver and ... sooner or later it will deliver its results”.

Englund is firmly of the opinion that Vision Zero is not delivering its stated goals and that the road safety situation in Sweden is quite poor and not helped by Vision Zero. He claims that there are no intermediate and traceable goals and that there is very little on the table that can reduce deaths and injuries. Speed reduction, for example, has a huge potential to reduce deaths and serious injuries but is not pursued or implemented within a systematic road traffic accident reduction strategy.

Englund is very critical of Vision Zero which he says has downgraded road safety education in schools. There is now almost a complete absence of this kind of initiative in schools. He supports the basic concept of Vision Zero, which is that the total design of the road traffic system and environment should be linked to the elimination of deaths and serious injuries. His points are related to the absence of progress, intermediate targets and a convincing strategy to achieve the overall vision of zero deaths and serious injuries. Englund is also of the view that “The results in terms of people killed and seriously injured are conspicuous by their absence”.

In an article in May 2004 in the largest selling morning paper in Sweden Englund drew public attention to this and the fact that the NRA had a so-called traffic safety barometer with figures that were not comparable between years, e.g. between the number of persons killed during 2003 compared with the number during 1996, 1997 etc. The NRA did change the wrong figures in the barometer but representatives of the Administration refused an offer from Television Company to discuss their way of handling accident statistics.

Englund: *“After having worked for six years with this policy without any changes concerning the number of dead and seriously injured persons it seems reasonable to discuss the strategy used but the NRA refuses; they know best and people who have other ideas, who question some of the activities are at best ignored. It is worth noting that the Vision Zero in itself does not contain a specific strategy in order to change the level of traffic safety. The strategy is what you choose to do, what measures you chose, which priorities you introduce etc”.*

Hans Erik Pettersson (Swedish National Road and Transport Research Institute) believes that the strategy offers no model for how to handle the goal conflicts of the system. Vision Zero says that for ethical reasons fatalities and serious injuries are unacceptable. If one argues for changes of the system to improve for instance comfort or efficiency, which are in conflict with the safety goal, one will meet arguments such as: *“What number of killed people do you think is a suitable number?”* This does not encourage a constructive debate about how to improve the safety of the system nor the other goals that are expected to be fulfilled by road traffic. In practice though all goals of course are considered but the opportunity to discuss the strategy to improve traffic safety is very much limited by this type of "ethical" argument.

European Stakeholders

Joerg Beckman of the European Transport Safety Council (ETSC) is very positive about Vision Zero. ETSC has supported the Vision Zero concept and hosted a public lecture and discussion by Claes Tingvall in Copenhagen in May 2005. His main points are:

- Vision Zero in Sweden has enhanced and strengthened the whole road safety effort, it provides a stimulator and motivator and brings groups and individuals together around a common objective.
- This coherence is lacking at the EU level and whilst the EU has a target and a strategy it does not have a vision.
- Vision Zero is a “consensual concept” which would be described in German as “leitbild”. There are sometimes problems with the word “Vision” but the German word carries the same meaning and is more acceptable.
- Vision Zero is the only vision currently in existence. Those who criticise this vision do not have an alternative vision.

He believes that the EU needs a Vision Zero and currently does not have this. Across the EU there are countries that are reluctant to adopt effective road safety measures and a clear direction/vision from the EU would accelerate progress across all 25 countries of the Union. The EU has significant north-south and east-west divides on many topics but especially road safety issues. EU-wide action is necessary to

overcome these disparities and to accelerate the transfer of best practice. Switzerland has Vision Zero but uses a different name. Austria has adopted something similar but Germany has not.

Beckman believes it is necessary to think “bigger” about road safety for example by linking traditional safety discussions to health policy and sustainability. There is a need to resolve conflicting policies e.g. to save energy vehicles are designed to be lighter which can increase risks of serious injury. He argues that a European vision need not necessarily be numerical but should still be visionary and embrace health and sustainability concerns. Visions cut across the borders of road safety and embrace reductions in greenhouse gases e.g. a 10 per cent reduction in greenhouse gas emissions from road transport could be associated with the impact of visionary road safety policies though reduced speed.

Brigitte Chaudhury is Founder and President of UK charity RoadPeace and President (chair) of European Federation of Road Traffic Victims. She is also very supportive and enthusiastic about Vision Zero. She believes that: *“It is the only proper way of looking at deaths and injuries ... we are offended by targets ... they build into the planning that deaths and injuries will occur”*

Chaudhury believes it is essential that we adopt the same position on road deaths as we do on rail and air deaths i.e. take them very seriously indeed and bring down dramatically the numbers killed and injured. It is equally unacceptable to have a road death as it is an air death. If we cannot eliminate crashes we can at least eliminate the severe consequences of those crashes and [to quote a colleague] if a crash does occur we want to see a plaster cast and not a coffin.

With regard to cost of a Vision Zero policy Chaudhury is strongly of the view that the costs of deaths and injuries are much higher than currently estimated. This has an impact on how Vision Zero should be examined if costs are mentioned. The costs of not intervening to bring about Vision Zero are likely to be greater than the costs of intervening.

She sees the law as a problem. It does not take road deaths seriously and it treats victims very poorly. Deaths in crashes are not included in the victim’s charter and not included in the code for victim services. She argues that we definitely need Vision Zero at the EU level if only to cope with trans-boundary nature of traffic and to cope with the rising death toll in countries such as Poland.

Chaudhury is on the WHO co-ordinating body on dealing with crashes/deaths/injuries which meets in Geneva and is charged with implementing WHO recommendations in its 2004 report. The UN has now adopted the RoadPeace idea of a World Day of remembrance for victims of crashes.

Francesca Racioppi of the World Health Organization office for Europe believes Vision Zero has three important merits, certainly from a political and philosophical point of view:

1. making explicit otherwise hidden trade-offs in societal values (e.g. trading speed for lives);
2. shifting the paradigm of responsibility in a direction which is similar to what happened in the 1970s in environmental issues: moving from an approach of "educating" people to "behave safely" to making the providers of goods and services accountable for the safety of their products, a shift which has already occurred in the area of chemical safety and other consumer products, but has not yet fully materialized in the area of road traffic safety.
3. by making "vision zero" an overarching target, it may help push different actors with mostly diverging objectives towards a common goal.

Helmut Holzapfel, Professor of Traffic Planning, University of Kassel believes the concept of Vision Zero is valuable and that we can design systems to produce this result. He is concerned that in Sweden the necessary steps to produce this result have not been taken. There is very little sign that Sweden is taking steps to counter the suburbanisation and spread of car dependent lifestyles which produce more kms driven. Also there is no sign that Sweden is taking steps to create supportive spatial and designed environments that are attractive to pedestrians and cyclists and that provide safe, secure and useful routes. He is critical of the strong emphasis in Sweden on physical separation in the road environment. This makes life difficult for pedestrians and promotes a car friendly environment and not a pedestrian friendly environment.

Holzapfel is critical of Sweden for failing to deal adequately with speed. Speeding traffic is the main danger of vulnerable groups especially as technology has provided increasing levels of protection for people in cars. These technological solutions do not create safe living environments. He is very critical that there are no clearly stated intermediate goals as Sweden moves towards its vision of zero deaths and serious injuries by 2050. There should be clear targets and there should be a clear process of evaluation and policy changes to assist in keeping this process on target. It is not helpful to have one target in 2050.

Holzapfel referred to the example of Switzerland with no Vision Zero policy but with a very long list of actual measures specified in some detail which are capable of achieving reductions in deaths and injuries.

Pedder Jensen of the European Environment Agency explained that Denmark has a policy based on the principle "1 accident is 1 accident too many". This has very strong echoes of Vision Zero but in

Denmark there is no Vision Zero as such but yet everything that can be thought of to reduce accidents is being done. Jensen talks in terms of “picking all the low hanging fruit”.

There will always be bad driving behaviour, which implies that Vision Zero is logically flawed. There are design rules for roads in Denmark but resistance to tightening up on speed limits and tightening up on enforcement. Vision Zero would presumably involve more speed enforcement and this would be unpopular.

Vision Zero is fine as a vision but “*no good for real policies*”. This is where we need targets and specific target driven policies in areas such as seat belts, speeding and drink driving. Real policy is more important than vision.

A policy is needed to get car manufactures on board (specific design improvements to enhance safety) There is a financial problem with Vision Zero. If we have Vision Zero then in theory there is no limit to what we would spend on road safety. This is the Lomborg (2001) argument about much environmental policy where he says that money could be spent in better ways. Vision Zero can be unhelpful if it runs away with spending. We need to ask where can we make the most impact.

Dimitrios Theologitis is Head of Unit, Road Safety at the European Commission. He is of the view that the Swedish Vision Zero has made a substantial contribution to reducing deaths and injuries in Sweden. He thinks that going beyond static cost-benefit analysis makes mobility safer and makes technical and behavioural change much more rapid and effective. It has changed attitudes. It is clear in Sweden that the government is very serious in protecting its citizens. Vision Zero has the effect of pushing things much higher up the political agenda.

His view is that Sweden is more effective at reducing the number of those killed and seriously injured than Britain. The curve in Britain is “*flattening out*”. The advantage of Vision Zero is that it is SMART and it is inspiring.

Vision Zero is appropriate at the local level. It is credible and can provide a local target. It is only likely to work in Member States with a record that is already “good” so it is not really helpful in Eastern Europe or Southern Europe. It is probably unrealistic at a national level but can work well at the local level.

Vision Zero is a very good stimulus to the setting of objectives. Objective setting can be unimaginative without Vision Zero. At the EU level he thinks that there should be a vision and an objective. However,

poorly performing countries would not take Vision Zero seriously. It would dilute the existing effort to achieve a 50 per cent reduction. The EC is an “*averaging organisation*” which tries to bring up poor performers to a better standard whilst sometimes not recognising what can be done by good performers. The 50 per cent reduction will need to be revisited in the mid-term review. He thinks that 15 Member States are on track to achieve a 50 per cent reduction but 10 are struggling and that it is unlikely that the EC would propose a Europe-wide Vision Zero policy

Conclusion

It is clear that the Vision Zero concept has had a significant impact on driving a strong policy discussion on road safety. Most participants in the survey were keen to point out large gains in road safety through a variety of interventions but were also of the view that policy should be re-invigorated with a strong ethical dimension or with an “aviation culture” approach. The benefits of a clear paradigm shift in road safety were real even if zero targets were thought to be difficult to achieve. This view was most cogently expressed by Dimitrios Theologitis in his reference to changing attitudes. There is a need to change attitudes so we can achieve a step-change in reducing deaths and injuries. There is also scepticism and this was well represented by Pedder Jensen in the EEA who does not think that Vision Zero is “good for real policies”. There are also ringing endorsements e.g. from Joerg Beckman of the ETSC who takes the view that Vision Zero brings groups and individuals together around a challenging objective far more successfully than traditional approaches are capable of. From a scientific point of view Francesca Racioppi of the WHO emphasises the ability of Vision Zero to make explicit the otherwise hidden trade-offs in societal values.

It is not surprising that a concept as challenging as Vision Zero should stimulate both support and opposition and should raise concerns about achievability. What is clear, however, is that the balance of opinion is weighted heavily towards the view that this kind of discussion is very healthy and that there is ample scope to raise our sights and to produce far more progress in reducing deaths and injuries on European roads.

5 UK Focus Groups

Twenty-nine focus groups were held throughout England and a total of 232 people participated. On average eight people attended each focus group. Participants were recruited from the local community e.g. via existing citizens panels, advertising in local community letters and at the local library. The participants covered a wide range of ages from 19–88 years old. Attempts were made to achieve an equal gender balance for each focus group; however, this was not always possible. Of the 232 focus group participants 51 per cent were men and 49 per cent were women.

Each focus group lasted for approximately 60 minutes. In the first part of the meeting, participants were given a short presentation on the level of road traffic fatalities and injuries in the UK and the Swedish approach on Vision Zero. After the presentation, participants were asked the following four questions:

- 1 What do you think about Vision Zero?
- 2 What is an acceptable level of death from car crashes in the UK?
- 3 What are the main ways we can intervene to bring down road deaths?
- 4 What do you think of the government's target for reducing road deaths by 40 per cent by 2010 compared with Vision Zero?

The aim of the questions was to test opinion on the current UK policy and as well as Swedish Vision Zero policy. Additional information on the Swedish approach to road safety was made available during the meeting on the request of the participants.

The following is an analysis of the main issues, arguments and concerns raised during the focus groups. Particular issues were repeatedly raised at each focus group.

1 What do you think about Vision Zero?

All focus groups gave a positive response to the notion of a Vision Zero policy. Participants felt it was “essential” to reduce road traffic deaths and injuries and that Vision Zero was an “admirable” policy and that it made a “good political statement” which was “inspiring”. It was an objective that society could aspire towards achieving – “aim for the sky and hit the pinnacle of the church steeple”. Comparisons were made with zero tolerance policies and the taboo now associated with drink driving.

“I think it’s very commendable. We have zero tolerance of crime. Why not zero tolerance in road safety as well?”

“I think having a Vision Zero policy is a laudable aim. You need a goal.”

“I’d second that. I think it’s an extremely good goal.”

“A Zero Policy says that it is actually [...] unacceptable that people die this way and we all kind of take it for granted that people will die and that’s just the cost of having a transport system”.

“We need a system where the road network accommodates the mistakes that people make.”

“I think there is a need to set a target.”

“Rather like striving for perfection isn’t it? “

However, while Vision Zero was a good ideal the following concerns were raised.

Achievability in practice

A zero target was seen as being “idealistic”, “unrealistic”, “unattainable” and that it would be “difficult”, if not “impossible” to change the mindset in the country. The biggest stumbling block would be changing people’s attitudes.

“You’ve got to be realistic otherwise people would not take the policy seriously.”

“People in Britain do not easily accept Utopian ideas. Not sure about it being a government policy”

“It’s a good idea to have a [zero] policy but it’s like everything, if you’ve got something where there’s no way of achieving it, somehow it has a negative effect.”

Some participants felt that “accidents will always happen” due to the existence of human error and there is a level of “risk” associated with travelling that needs to be accepted.

“Yes, it would be nice to have zero but unless we make cars out of cotton wool it will never happen. There’s an inherent risk.”

“People in Britain do not feel responsible for road safety as a whole”

The difficulties of implementing current road safety policies as well as a vision zero policy were an area of concern. It was felt that ineffective or incompetent implementation of existing policies would affect the implementation of a future vision zero policy.

“We’re lacksadaisical about enforcement”

Participants felt that sentences for road traffic deaths and injuries should reflect the seriousness of the offence. It was felt that the police should enforce the Highway Code.

“The average driver’s attitude to road safety is horrible. As illustrated by speed cameras – it’s a joke. We slow down and pass the camera and off we go again.”

“It is a challenge between the road enforcers, the system and the individual driver.”

“The car is a lethal weapon.”

Difference between Sweden and the UK

Participants felt that Swedish culture was different to the UK. It was felt that Swedes have “more awareness and more respect” and that they were “far ahead in most things” and “very good at social engineering” and that “we seem to be along way behind if Sweden adopted [vision zero] in 1997”.

Reasons for high level of road accidents and injuries in the UK

Participants identified a number of reasons why road deaths and injuries are at current levels:

- Drinking behaviour is bad, people do not think they will cause an accident.
- The level and quality of driver is to blame for the level of road deaths and injuries.
- People need to be more aware of the consequences of reckless driving.
- Speed needs to be controlled.
- If cycling and walking was a more pleasant alternative to driving, it might reduce congestion.
- Young people feel invincible when driving the car.
- It is not that the younger generation do not know the Highway Code. It is more of an arrogance and attitude problem.
- The police need to enforce the Highway Code.
- Speed cameras are used to raise money.

Participants felt that to overcome these problems:

- Education is a key factor.
- People should be educated at a young age.
- Road signs showing the number of deaths or major accidents on the stretch of the road make you think.
- Engineering and education might need to be used to improve road safety.
- Local authorities need to work together to implement policies.

2 What is an acceptable level of death from car crashes in the UK?

The majority of the participants felt that the 'zero' was the only acceptable level of deaths from car crashes in the UK:

"It is ethically wrong to say a certain number will die on the roads"

"There is nothing that is acceptable about death".

"You can't say any death is acceptable at all"

"One death is too many – I can't see anybody arguing with that. If it's my child ..."

"No level of death is acceptable especially if you bring it down to your own family. Would you accept the death in your family?"

However, participants were also aware of the difficulties achieving a zero target due to the inherent risk associated with road transport:

"Doesn't matter what you do there is always a risk associated with it. Whether you are walking the street or going on holiday on a plane. There is a risk that is attributable to that transport and no matter what; you will always have a risk attributed to driving."

“If it’s not acceptable ban all cars completely”

“We are becoming such a nanny state no-one will venture from the womb before long”.

“There will always be accidents on the roads so a target of zero is unattainable”

Some participants attempted to define an acceptable level of road fatalities and commented on the current levels:

“10%, 20%, 40% - these are improvements but they are not acceptable”

“Present levels are tolerable but not acceptable”

“As low as possible”

“As low as reasonably practical (ALARP) is what should be the going principle in that any death or serious injury is unacceptable”.

“It is definitely a good idea to strive for as low a number as possible, but road deaths will always happen”

“At the moment we accept nine a day being acceptable because we have not done enough to stop it.”

“The reality is that we just play at it ... we still don’t mind nine people a day being killed”

Some participants felt that road improvements only happened after several accidents had occurred despite warnings from local residents. They had *“no faith in traffic engineers”* and that we *“must spend as much as possible to reduce the risk”*.

Some of the focus group participants objected to the question being asked:

“It’s a question that shouldn’t be asked”

“... in principle you have to say of course that no deaths are acceptable. One death is unacceptable. But we know that’s not real, that is an unreal question”.

“I think it’s an abuse of language. I don’t think there is an acceptable level. It’s the wrong question”.

“The wrong question is being asked. All that can be said is risks must be minimized”.

3 What are the main ways we can intervene to bring down road deaths?

One participant felt that *“we already intervene hugely. For instance, nobody walks to school [...] which is not what people like to be doing because it limits freedom”*. In contrast, another felt that there *“needs to be a balance between individual responsibility and state intervention e.g. driver training vs. road design, speed restrictions”*.

Education was seen as playing a key role in the reduction of road deaths. While some participants claimed that *“all road users needed to be educated”* there was a strong focus on targeting young drivers, especially men.

“Need to grow up before being given a weapon”

“Young people have less sense of danger than older people” – “invulnerable attitude”

Participants suggested a number of issues where further education was required:

- education on the real costs of driving
- education on how to use roads and hazard perception
- more education especially for children and novice drivers (via school curriculum): *“We are not teaching potential drivers early enough”*
- better communication about the impacts of driving, speed and injury severity: *“Irresponsible driving practices need to become socially unacceptable”*
- more basic information about road safety *“the figures are shocking, we’re all shocked by this, I think it ought to be advertised more”*
- more road safety advertising
- more inter-modal awareness, drivers need to know that it’s like to cycle and vice versa

Publicity campaigns were seen as one way of educating the population. The shock tactics of drink driving and *Speed Kills* campaigns were seen as being successful. It was felt that there should be *“more graphic and targeted advertising”*.

It was felt that the media has a role to play *“they could embarrass those caught speeding”* and could remind pedestrians to wear reflective clothing:

“Positive advertising for cycling and public transport would help”.

The media had a particular responsibility and the *“advertising industry shouldn’t be allowed to sell on speed and power”*.

Equally, car manufacturers were identified as also having a role to play in reducing road fatalities: *“They make a heck of a lot of money out of it; I feel that they do have some responsibility”*.

In particular, some participants questioned the production of cars that could reach high speeds:

“What is the point to fast and flash cars?”

“If you get a manufacturer that says this car does from 0 to 60 mph in 20 seconds then you are going to get somebody behind the wheel who is going to do it”

“You’ve got a brand new car and what does the speedo say, 140 mph, you’re going to go for that 140 and the road isn’t built for it. So there’s got to be reality put into the car”

“Some cars are designed to go at 180mph!”

“Design a car with a breathalyzer that would prevent anyone over the limit from driving”

“What nonsense that you can buy cars that go over the top limits”

“Ban 4x4 vehicles”

The control of speed on the roads was an issue that participants felt should be addressed in order to reduce road traffic fatalities: *“People are not aware of the speed limit in roads and are even baffled by the variety of different road traffic signs”*. It was felt that *“if people were educated on the dangers of speeding it might reduce speed better than the present methods of enforcement.”*

Particular attention was given to the current speed limits:

“Speed limits are out of date, they were introduced when there was much less traffic. Now there is so much traffic that people should be more cautious. Speed limits should be reduced”

“Even if you are doing 25 in a 20 speed limit ... people who are speeding are just as likely to be kill somebody as somebody who has had a little bit too much to drink”.

“Speed limits should conform with road conditions”

“Apply zero tolerance of drinking and driving to speed”

Some participants felt that the current speed limits should be lowered:

“Introduction of 20mph speed limits in towns”

“I think that’s [introduction of local 20 mph zone] made an awful lot of difference to a lot of near misses, accidents, just taking 10 mph off the speed limit there and if they were prepared to do that in the majority of built-up areas, I think the world would be a better place”.

However, one participant felt lower speed limits could lead to frustration and road rage. One considered speed limits were “nannying to death” and should be considered “advisory”.

“You should only prosecute people for driving without due care and attention or driving dangerously”

Restrictions at 4 am on the open road were considered “grossly unreasonable”.

The issue of road speed cameras was raised several times. Some participants felt that there was a need to improve the location of speed cameras and to ensure that they working “ ... because the people who use that particular piece of road every day know very well that that camera is not up and running”.

It was felt that there was a need to address the negative perception of road cameras.

“You get some of these speed cameras that make thousands and thousands and thousands of pounds just for the sake of it. That money needs to be ploughed back into the infrastructure for improving how we separate vehicles from other vehicles”.

New roads invited speeding what is needed is “ a device of some sort which as you enter a sign which says 20 mph 30 or 40 [...] is some automatic eye to govern the car [...] that would stop it”.

There should be “automatic speed controls”

“Speed cameras which do not flash and have no film are losing the deterrent effect”

“Stricter” enforcement of current road safety laws was felt necessary and that there should be “more visible policing” with “police advice at specific places” on speed. It was felt that “the ability to enforce is not strong enough”

Low level enforcement was considered important. It was felt necessary to keep discipline by “creating order and enforcing that order at a low level” rather than allowing things to escalate and then punishing for dangerous transgressions.

“There should be more enforcement or encouragement of cyclists wearing helmets and lights at night”

Some participants felt the punishment of particular driving offences did not reflect the level of severity of the offence committed.

“Why are we giving people under the influence of drink, no insurance, and the car itself not roadworthy 6 months prison sentence?”

One example was cited:

“knocked off his motorbike, carried on the bonnet, had a broken arm, was unconscious, seriously injured by a chap who was driving over the speed limit, with faulty brake and he was fined £30 ... The driver is at fault ... the drive is put up to the judiciary. That is where the fault is”

“A schoolteacher driven to distraction by hooligans goes out, fires a gun and she get six months in prison. Somebody drives thoughtlessly, dangerously whatever down the road kills one, two people – no license, no insurance, already has been banned from driving for two years. Three months in jail. He’ll probably be out in four weeks time. In my opinion, it’s manslaughter, 15 years, or total driving ban”

“I think that someone who kills someone on the road is tantamount to being guilty of murder”

“The coroner needs to tie himself a bit tighter [to] the criminality of the act and say ‘well, actually, that person was not killed by death by misadventure that person was killed by another person who was drink driving and was not in a fit state to be in control of a vehicle”

The issue of driving tests was also raised by the participants as one way of improving road safety:

“The tests should be more rigorous” “ ... and at different stages of people’s lives”

“Graduated licensing of young drivers related to vehicle power”

“Regular driving tests for everyone, especially the elderly”

“People are taught to drive a vehicle [...] people are taught to how to pass a test”

“The number of times I’ve heard people say “now you’ve passed your test, now is that you learn to drive”

“I would like to see a re-test every 10 years for all drivers”

“Compulsory refresher courses every two years”

The Swedish approach to investigation was explained to some of the focus groups. Participants wanted to learn more about the system of investigation. Some were unconvinced that this was happening in the UK.

“I suppose the coroner makes some sort of recommendation but whether anyone implements them”

“Find out what could have prevented it”

Participants pointed out the lack of power to instruct the County Council to amend road layout.

“Police involvement is to ascertain whether there was anyone who is criminally culpable”

One former police officer with investigation experience defended the British police force. He disputed the fact that the Swedes could do it any better. He considered the police investigations of a very high standard, thorough and able to call experts where appropriate. It was acknowledged that the shortcoming in the British system lay in not having the power to implement the coroner’s recommendations. It was a political question. *“The police can’t say you will redesign the road”*.

Improvements in public transport were seen as necessary to reduce traffic and improve safety:

“Should be improved and reducing the traffic on the roads will reduce the number of fatalities as well”.

“Public transport has a whole lot of problems. It’s being racketed about on a bus. It gets you there but it is not the same quality of experiences as going in one’s own car”

Despite the introduction of concessionary fares, it was *“still exceedingly costly to do anything on the bus”*

“Cost is not a major factor for public transport use. People want convenience”

“Public transport needs to compete with the car”

“Very good public transport would reduce danger by reducing car use and eliminating danger”

The removal of some road signs was seen as encouraging the driver to behave more responsibly.

“Experimenting [in Holland] by taking all the directions of the road [...] because there was nothing on the road [...] when coming to a crossroad they would take a little bit more care. In England you have big halt sign and [other drivers] rely on you screaming to a halt so people will take a chance when they think they’re safe”

Proliferation of signs which were distracting and/or confusing *“there are more than Blackpool illuminations at night”*.

Other measures which were suggested to improve road safety were ensuring road surfaces decreases the stopping distances. In addition, there should be better marked roads and avoidance of florescent signs down every little turn off.

“Take traffic away from the pedestrian and you reduce the risk”

“Cycle lanes should not end abruptly in the middle of nowhere [...] to all intent and purposes it might as well not be there”

Measures aimed at improving conditions for cyclists and pedestrians were suggested:

“Pedestrians and cyclists don’t have road space. They can’t cross the road, they’re threatened by inappropriate overtaking. The perception of walking and cycling is that it is unpleasant and dangerous. It’s because the car has become dominant in the street scene”

“Reallocation of road space and separation of cycle tracks”

“You shouldn’t have a cycle lane but a cycle path”

“Separate cyclists from the main road like they do in Holland”

4 What do you think of the government’s target for reducing road deaths and serious injuries (combined) by 40 per cent by 2010 compared with Vision Zero?

The question was criticised: comparing a vision with an action and was unnecessary. *“Our vision zero is identical to [the] Swedish vision zero. We are all saying that this is totally unacceptable.”*

Some participants felt the UK target of a 40 per cent reduction was frequently considered too easy a target:

“40 per cent reduction is ridiculous.”

“It’s plucked out of the air with nothing to hold it up. No idealism at all. It’s useless.”

“There is no reasonable argument for aiming to reduce road deaths by 40 per cent from 1995 to 2010, rather than aiming for zero”

“If anything is going to be done, it is morally wrong to accept anything other than zero deaths”

“The problem with targets is that they seem arbitrary”

“A 40 per cent target can hide complacency, but at least you know the ground rules.”

“It should be Vision Zero shouldn’t it? Like the Swedes say: we’re going to start to go down this bit and then this bit.”

“The [UK] policy is too antiquated. They need to look at Vision Zero get so more resources, get somebody responsible overall to drive it forward.”

“It’s not as good as Vision Zero – it is realistic, it is achievable but it’s got more chance for success.”

“It’s probably more likely to be achievable than Vision Zero. But I’m going to say it is not as good as Vision Zero.”

“It isn’t about thinking differently (agreement) so it’s worse”

“If there is a timetable for it then the 40 per cent reduction by 2010 is ... (some confusion) There is more traffic on the road now. We should aim as far as we can then if it’s Vision Zero that should be that.”

Some participants questioned why no action was taken if a target was not met:

“What is the consequence of hitting the target or failing?”

“Politicians should be held accountable if targets are not met”

Some participants thought the UK target was good because it is achievable so long as there was year on year reduction. *“If in 1995 it was 9 a day we were killing on the roads if we settle for a reduction by 1 a year we’re about 40 per cent of that by 2010 so that is an acceptable target so long as when we get there we are going to continue reducing until we’ve reduced it by as much as we possibly can. So if that’s the target then it’s as good as Vision Zero.”*

“Yes, it’s another target. This government is full of targets. It’s a step towards minimising death and serious injury but it needs to be backed by policies to achieve it. Anybody could dream up a number. The 40 per cent target is a step towards the Vision Zero concept.”

“40 per cent is more realistic and achievable target and may be better than an unachievable goal”

There was cynicism: *“We have decreased since 1995 so someone is doing something right. It can be improved. But I have to say I am just a little cynical.”*

“Targets are just for politicians”

On further consideration cost became the issue. *“40 per cent requires an enormous amount of money which is competing with education and hospitals.”*

“Government have so many choices to make about the way they spend money. We’re worried about 3,000 deaths on our roads each year. That’s not many deaths. 33,000 people starve to death everyday. It’s a matter of choices of where we spend our money. So we allocate resources to where we think they’re going to do the greatest good.”

Not all agreed that cost was an obstacle: *“It isn’t always the expensive things that have the best results. If you take the Warminster bypass - in the first year there were 3 men who were killed ...”*

Most moved away from “Worse” to “as good as” or “more practical” “otherwise it would be too expensive.” The remark included car manufacturers not just government.

Several thought that there was politically ambivalence *“I think everybody recognises that you are not ever going to achieve that” “People are going to laugh at it.”*

“The long term goal can be zero but it will not be reached any time soon.”

With regard to Vision Zero the

“Vision Zero seems to be an excellent target but by setting an ever increasing numbers that one’s trying to cut down on fatality over the time scale that Vision Zero is being rolled out [setting targets] doesn’t seem an unreasonable thing to do. “

“We’ve only got 5 more years to go before 2010. I don’t think that is achievable. The targets are alright. It gives you an aim to work for. I can’t honestly see that you can achieve zero or 40 per cent in 5 years. It’s going to be very difficult. You’ve got to have tools with which to [...] control naughty drivers. Eat into it – let’s get some way. “

Vision Zero was accepted as a ‘mission statement’ as long as there was the possibility of action to match: *“You can only have this as a mission statement if you do something else.”*

“I think any goal has got to be achievable. So I would say it is as good.”

The name was a problem *“The first time I looked at Vision Zero I thought that [meant] I’m blind!”*

6 UK Stakeholder On-line Questionnaire

The aim of the on-line questionnaire survey was to gain the views of a range of UK stakeholders on Vision Zero. Approximately 55 stakeholders were contacted and requested to complete an on-line questionnaire survey. The stakeholders included central government, members of parliament, local government associations, motoring organisations, health organisations, non-governmental organisations, the police and other organisations including road safety specialists.

A total of 85 people completed the on-line questionnaire survey. This number included private individuals who had become aware of the project either via the internet or through advertising for focus group recruitment. Figure 6.1 presents the different types of questionnaire respondents. While a number of organisations were contacted the people who responded to the questionnaire preferred to respond in a personal rather than institutional capacity. The majority of the responses were individual responses at 59 per cent followed by campaign groups (13 per cent) and private organisations (8 per cent). Six per cent of the respondents did not indicate any affiliation while government bodies and local authorities each represented 5 per cent of the respondents followed by motorist groups at 4 per cent.

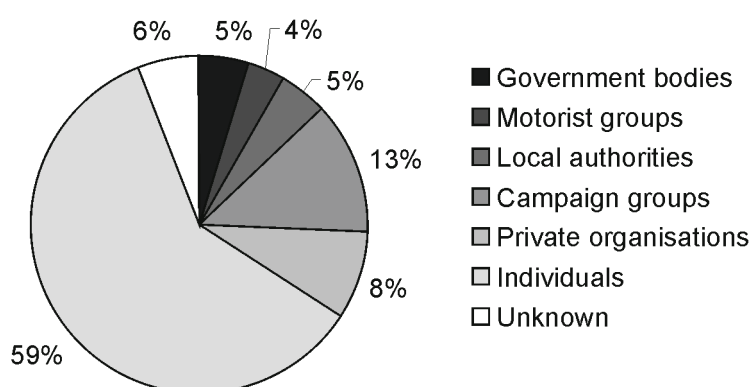
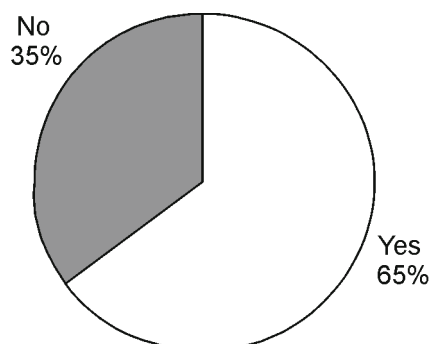


Figure 6.1: Questionnaire respondents by category

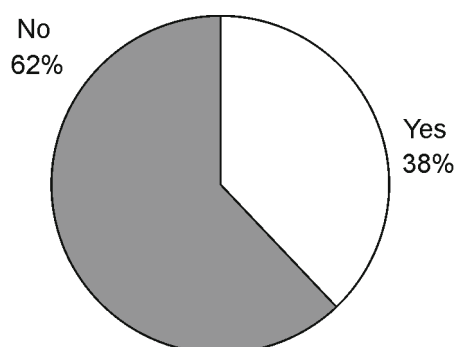
The questionnaire survey consisted of eleven questions related to a Vision Zero policy on road safety: it also provided the opportunity for the respondents to elaborate further on their views. The following section provides an overview of the results of the survey. The section also includes direct quotes from the respondents. It is not possible to present all the responses in this report. Instead, the common issues raised have been grouped and presented with some sample responses.

1 Have you heard of the Swedish Vision Zero road safety policy?



A total of 65 per cent of the people who completed the questionnaire had heard about the Swedish Vision Zero road safety policy.

2 Do you think it is helpful to have a policy that establishes a vision of zero fatalities and zero serious injuries?



A total of 62 per cent of respondents did not feel that an adoption of a Vision Zero would be helpful.

Please explain why you take this view?

The majority of the questionnaire respondents who did not support a Vision Zero policy did so because they felt that a target of zero was unrealistic (see Table 6.1) and that they felt that life is inherently risky and this fact should be accepted. The cost effectiveness of implementing such a policy was also raised as a particular issue against such a target. Finally, two respondents felt that the target gives a false impression that such a target is achievable.

Table 6.1: Comments of the usefulness of adopting a Vision Zero policy

The Vision Zero Target is Unrealistic

It is totally absurd to expect zero casualties as this denies accidents can ever occur. Human nature cannot be manipulated in this way. The outcome of such a policy will be to bring traffic speeds down to pre-war levels since speed is always blamed as the main cause of accidents and to put the blame on the driver regardless of circumstances. It defies belief; intelligent people are proposing this idea seriously. It will also lead to "accidents" being ignored for official purposes and governments claiming credit for something that is impossible.

I have ticked -yes- but it is difficult to answer this question with a -yes- or -no-. The principle of zero deaths and serious injuries is absolutely correct, but while targets should be challenging, they have to be achievable, based on sound data of road traffic trends and on sound estimates of the effectiveness of road safety measures. I am not sure whether an overall eventual vision of zero helps or hinders understanding of interim targets. I am not convinced that zero deaths is ever achievable.

I understand, but do not agree with, adopting such an absolutist and probably unobtainable goal. Zero death/injury has yet to be achieved by any transport mode; walking or cycling record incidences of death/injury with no vehicle involved, air transport has for more than 30 years been the most highly regulated and technologically governed of all, yet still there are crashes. The same is true to varying extents for all modes.

It is too silly for words - while playing to the emotions. A serious attempt to implement this would bring the place to a complete standstill - causing loss of life and limb in other spheres. After all - a brain surgeon stuck in a traffic jam cannot be performing an operation.

The basic premise of "human life and health are paramount and take priority over mobility and other objectives of the road traffic system" is fundamentally flawed. It equates to the concept that you save a life at whatever the cost - this is clearly not true - greater expenditure on railways, air transport, and hospitals would all save lives but we as individuals and as a society are not prepared to pay that cost - it is a trade off and a risk. I ride a motorbike - in doing so I am far more vulnerable to being a KSI statistic than in my car - but I choose to make this decision because to me the benefit is worth the risk. So it is with all elements of life - we would not wish to scale down the expenditure on education to fit a multi-billion train safety system that would only save a few lives per year - the balance is wrong as is this approach.

Though this sounds a fine idea as no decent person wishes to harm another person in this way. However, we are human and we do make mistakes, sometimes with dire consequences for somebody else, but should we be blamed for something we did not do out of malice or lack of proper training? Road casualties are easy to measure, but how do you measure a person's freedom? This includes the freedom to make mistakes. Bring in draconian penalties and mass spying systems like Galileo satellite system, which is going to electronically tag every motor vehicle in the EU. This is the political despot regime of Joseph Stalin dished up as road safety, as similar road safety aims can be achieved through proper road safety education for ALL citizens.

While we should strive to reduce all casualties, it is naive and impractical to expect to reduce them to zero. In addition, in making roads safer for some groups, measures can make roads less safe for others. e.g. the extensive use of safety fence endangers motorcyclists while favouring already protected car occupants. Safety measures to go towards zero can also follow fashion and be both oppressive and ineffective. A more pragmatic approach to adopt policies which will reduce casualties for all should be adopted.

It is right thing to aim to reduce mortality and serious injuries; however it is dishonest to suggest zero mortality can be achieved. It is also dishonest to run campaigns of this type concentrating on traditional methods such as car haters, speed, cameras etc. while ignoring issues such as training of ALL road users, responsibility of all parties, including parents for road safety, ignoring advice of - unpopular- thinkers on road safety suggesting better design of roads and signs, need for honest analysis of accident causes etc. Concentrating only on speed reduction, making vehicles more cumbersome and heavy by forcing car designers to introduce certain measures affecting car's performance is not the way to address the issue.

Life is Risky

While zero fatalities is an attractive public option, it will be impossible to achieve in reality as some deaths are a product of mobility. It is therefore fairer and more realistic to lower risk "as low as reasonably practicable" for different classes of road user.	We are all human beings. Human beings all make mistakes. Mistakes result in accidents. Accidents cannot be eradicated UNLESS human beings are robotized.	Efforts to make the environment safe will make the people more careless. The people are ultimately more in control of safety than the environment.	People die, it is a fact of life. Roads are amongst the safer places to be.
I do not think it is possible to achieve this aim while we use mechanized transport this will take us back to the age of the horse and cart and even then there were fatalities. All life has risk and no matter what you do there will always be a risk, if not from yourself from others. Education and physically separating pedestrian and motorized traffic is the answer but I also fear that this is also likely to fail as at some point they must come together.	Whilst the aims of this initiative are laudable the target of zero accidents is unattainable. There always will be accidents - just look at some of the silly accidents that are reported to occur in the home peaking on Sundays when DIY is in progress. The death and injury road toll is saddening BUT when compared to medical disease, it is insignificant.	Accidents are always going to happen regardless of who is driving. Even the best drivers in the world make mistakes, and it is not possible to assume that we can have no fatalities on our roads. The truth is that drivers on the roads are not all excellent. We will always have people who want to drive fast or who are not good drivers anyway. We should aim to reduce fatalities, but having a zero target is unachievable.	Because there needs to be an acknowledgement that accidents can happen and some accidents are not preventable, for example, due to bad weather. I do not think zero fatalities or serious injuries is a realistic target that could be achieved.
Life is full of risks. I think that people accept that the benefits of modern life/transport outweigh the minute risk that modes of transport include. The Vision Zero mentality would lead to a ban on skiing, motorcycling, DIY and probably childbirth if taken to its logical conclusion! Our roads are already among the safest in Europe. What is needed is better enforcement of our existing laws to curb the hooligan element, not forcing people to drive at 20/50 mph everywhere.	While there can never be a level that is "acceptable", there will always be accidents, and this vision is, I believe, unattainable. Better to concentrate on what is practical, and will not bring travel and transport grinding to a halt.	A certain level of death and injury in any human activity is not only inevitable but arguably necessary in whole population terms.	The purpose of transport is to facilitate the efficient functioning of the economy. Those who view the existing risks of driving as being excessive have the choice of reorganising their lives to eliminate this risk. Those of us who chose to undertake the risks of driving should not be penalised even more for doing so by a policy which refuses to recognise our rights to take responsibility for our own actions.

Cost			
<i>It is simply not realistic under any circumstances whatsoever especially in the UK. It would be used as an attack on the motoring public, especially the car driver. The authorities will not accept that ALL road users should be held responsible for road safety. It is about time that cyclists and pedestrians were made to realize that they are responsible for their actions and most of them require to be educated to become aware that the road is really meant for vehicles which pay the taxes to build the roads anyway. (Disgruntled tax paying motorist of over 55 years' experience)</i>	<i>Measures already adopted have led to disrespect for agencies implementing them. Typically, non-cooperation with the police. Current problems in accident-prone areas covered by cameras could in many instances be relieved. It would be less cost-effective than a single camera indicating revenue collection rather than safety.</i>	<i>It is likely that the cost of this would be far too high and result in deaths from other causes such as hunger and disease brought about by a return to a medieval transport-free economy.</i>	<i>The incremental cost - in human terms - of attempting to reduce casualties to zero is disproportionate to the benefit. It indeed will itself generate casualties in other areas. The target is not possible to achieve.</i>
False Impression			
<i>Because it gives the false impression that such a target is achievable. Unfortunately, with so many millions of vehicles covering so many billions of miles accidents are inevitable, and when the zero target is not achieved politicians will try more and more desperate and often counter-productive measures to cover up what will be perceived as a failure.</i>	<i>I do not agree with the modern use of the word "vision". I would say that the aim should be to minimize fatalities and serious injuries, whilst accepting that life is inherently dangerous. To believe otherwise is to delude oneself, and this leads to making false decisions.</i>	<i>It will be used against drivers by the unrepresentative anti-car/anti-driver groups that have a stranglehold on national/local Government.</i>	

Those questionnaire respondents who supported a Vision Zero policy felt that the policy was positive and desirable. A Vision Zero policy would be providing the right message (see Table 6.2). Three respondents who supported the policy did so with certain reservations; the goal should be aspired to even though it will not be achieved (see Table 6.3).

Table 6.2: Comments: Vision Zero is a positive move

<i>This is the basis of Road Safety.</i>	<i>Vision Zero raises awareness of the scale of the problem.</i>	<i>There should never be a situation where a certain amount of casualties are considered acceptable in a civilised society.</i>	<i>Although I do not believe zero is achievable any move towards this would be good as fatalities and serious injuries are intrinsically bad.</i>
<i>We need to view transport as a health and safety issue. We would not tolerate 3,000 deaths a year in public buildings (unless they were hospitals).</i>	<i>Vision zero encourages out of the box thinking - hopefully it will encourage drivers to think about wanting to be accident-free rather than trusting to luck.</i>	<i>1) People without vision perish. 2) It is always good to aim high although you might be criticised for setting yourself up to fail if you believe it is not really achievable.</i>	<i>Any accident or fatality is one too many. A vision zero approach would help to change the (currently) aggressive ethos of our streets.</i>

<i>We should have the same approach as they have in other transport modes especially aviation. The question should be over what period could we achieve much lower casualties not whether to aspire to this or not. We have to aim high to make progress.</i>	<i>There is a need to achieve a step change in road safety policy and to articulate that road death and injury levels should not be tolerated.</i>	<i>It takes a principle as a starting point. This is a good way to proceed. It is unambiguous.</i>	<i>How can any civilized society tolerate a vision that is anything above zero? Having said that, accidents are accidents – no one tolerates them, but what does a vision do to help that directly, beyond looking at the things that cause them - or perhaps that is the point?</i>
<i>A statement gives drivers something to focus on.</i>	<i>No level of road injury is acceptable.</i>		
<i>A life lost is a sheer waste. The effect of that missing person is far greater in both emotional and community terms (as well as in financially). Counting money does not equate to someone's life or serious injury. Forethought can help everyone achieve their full life expectancy where road traffic is concerned.</i>	<i>Although it should be recognised that in reality accidents will always happen, working towards a shared vision will broaden the scope of road safety which in the U.K. tends to be too narrowly focused.</i>	<i>It is important to have a target when trying to decide on an appropriate policy. When discussing loss or serious injury to human life, the target has to be zero. Having said this, targets must be achievable and I do not believe that this target can be achieved without significant investment and a step change in the attitudes of all road users, administration bodies and the police force.</i>	<i>Too many people are killed and injured on the UK's roads, yet there is little awareness and road safety has a low priority. There was a national outcry when 10 people died in the Hatfield rail crash and yet that is the same number killed per day on the roads, day in, day out. Too many people are too isolated from their actions when they get in a car. There needs to be a cultural shift in the way people behave on the roads.</i>
<i>I think we should apply the same approach to road safety as we do to health and safety at work. Companies such as Shell have adopted a Zero Target approach to health and safety at work, which considers any death or serious injury as a result of their operations to be unacceptable. It is worth noting that they do this despite the fact that their operations are under what are potentially extremely hazardous and hostile conditions i.e. it is by no means an easy option for them. A target of zero deaths and serious injuries leads to a whole new approach to safety management. Deaths (whether on the road or at work) are the tip of a pyramid -below every death there are maybe 10 serious injuries and below that 100 slight injuries, and below that perhaps 1,000 near misses, and again below that perhaps 10,000 bad practices which could have caused an incident. I think a target</i>	<i>Zero tolerance policing works in dramatically reducing all forms of crime where it is implemented. Even though it is known the actual value of zero cannot be achieved it is a target that must be aimed for. For example, take the well documented New York crime reductions from 1991–2001. Mayor Rudolf Guiliani's dramatic transformation of crime and welfare by successfully applying zero tolerance policies together with openness, forcing people to take responsibility for their actions, truth and justice.</i>	<i>Although ultimately it is unachievable, the process should produce great improvement in a range of environmental issues. Though that should not be the ONLY consideration i.e. vehicle noise, fear (including when I sit in my home and hear dangerously speeding vehicles on the road outside), the domination of vehicles over people. Improved and safe facilities for babies, toddlers, children, teens and adults to enjoy the outdoors. Human development and community is being severely damaged by road traffic induced restrictions.</i>	<i>Government needs to communicate unequivocally its intolerance of death or serious injuries on the road. It is a way of extending the commandment and law of this land - thou shalt not kill.</i>

zero encourages safety practitioners to focus on the bad practices at the base of the pyramid. By eradicating these, they are able to reduce the more severe effects higher up.

As a 'vision' it is the ultimate target - but it MUST be aimed at ALL road users, not simply using it to apportion over-simplistic blame for any accident. Pedestrians, cyclists and other non-vehicular users have the same responsibility to act in a safe and appropriate manner; vehicle drivers have an equal right to the same degree of care and attention given to them as is expected from them.

In no other field is the level of preventable injury expected from RTAs considered acceptable. I understand the Swedish vision is being implemented by a strict road hierarchy and this has good applicability to the UK, particularly in addressing the concerns of vulnerable road users.

Drivers in Britain today are aggressive, inconsiderate and dangerous. A big impetus is needed to encourage people to change their behaviour. Road accidents cause so much suffering to individuals and delay to other road users. Quality of life could be improved dramatically for children and adults if they felt it was safe on the roads to cycle. So much cost is involved in road traffic accidents and all the associated problems. This could be much better spent on preventing accidents.

In any policy you have to have something to measure progress against. It would be just as unacceptable to have a target number of deaths on the road as it is to have a target speed limit. A vision of zero may be perceived as unrealistic but we have to ask ourselves why. Why do we, as a society, accept road deaths as accidents?

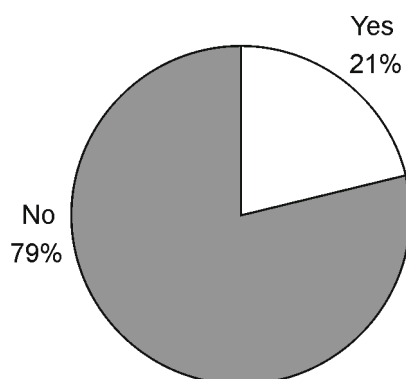
Table 6.3: Comments: cautiously supportive of Vision Zero

Provided such a policy would NOT become a focus for the anti-car lobby and would NOT involve ever more draconian treatment of anyone who drives a vehicle it could be supported. Unfortunately, this will not happen because the people charged with implementing the policy will have their own agenda which will involve reducing miles driven, placing obstacles in the road and introducing a host of other stupid initiatives. Safety through better engineering of roads is a very good idea and I would support this. Not speed humps and obstacles though. By engineering I mean traffic separation, reduction of roadside hazards and more roadways.

As a goal rather than a policy it makes sense, as while we can strive for perfection, the human element will always cause random effects. As human error accounts for such a high percentage of accidents and is something that cannot (yet) be removed from the driving process. The vision will never therefore be achieved, but the goal can always be strived for.

Of course the ideal is zero fatalities and this should always be the target, but realistically it is never likely to happen. As long as this is kept in mind there is no reason that this should not be the target.

3 Do you think that the Swedish Vision Zero policy should be adopted as a road safety policy in the UK?



A total of 79 per cent of the questionnaire respondents were against adopting a Vision Zero in the UK while only 21 per cent supported such a policy. The comments made by the respondents reflect the level of opposition the issues raised include the target being unrealistic, costly to achieve and that life is inherently risky.

Some respondents felt that the Swedish policy focused too heavily on speed reduction and that this was the wrong approach to take for reducing fatalities. In addition, it was felt Sweden is culturally, economically and political different to the UK and such an approach would not work in the UK. A number of respondents felt that current UK road safety was already too restrictive and the adoption of a Vision Zero policy would further restrict road users (see Table 6.4).

Those respondents who were supportive of a Vision Zero policy were split between those who felt the need to examine the policy further but were uncertain of it being adopted in the UK and those who whole heartedly supported this new approach of a vision for zero road traffic fatalities.

Table 6.4: Comments on whether or not the UK should adopt a Swedish Vision Zero Policy

Unrealistic			
<i>"Pie in the sky", idealistic view based upon false promises that will inevitably fail.</i>	<i>It is utterly unrealistic and would be unacceptable to the rationale of the general public.</i>	<i>A policy of continuous improvement is best.</i>	<i>It implies we are not already trying to cut road crashes, which of course we are.</i>
Risk			
<i>As long as unregulated pedestrians walk out in front of cars without looking they will continue to be killed or injured. Statistically, most pedestrian accidents are the fault of the pedestrian.</i>	<i>The concentration on one of the many risks to life and limb is in my view very short sighted.</i>	<i>We need to reduce fatalities, but we cannot eliminate them. There will always be fatalities as long as there are cars on the roads.</i>	<i>The current target for reducing casualties may be unambitious but provides a structure for progress.</i>
Cost			
<i>The costs would be enormous (which would detract from other social programmes) and there would eventually be serious restrictions on the choice of mode of transport and how it could be used. It would restrict my freedom of choice for a benefit I do not seek.</i>	<i>Not sure if it is achievable, and if it is, at what cost? There's an issue here about maximising the impact of limited resources.</i>	<i>It is not reasonable to make the vast expenditure necessary to reduce death and injury to zero.</i>	<i>Because it will simply divert attention and resources from dealing with the problems (e.g. drink driving) that can be realistically policed.</i>
Speed			
<i>It appears to be solely focused on reducing speed, and therefore is only looking at road users in motorised vehicles. The only way to make roads safer is to educate the entire population on how to safely use our transport infrastructure in a safe way. But at the end of the day we are all human and make mistakes which will lead to accidents. You only have to look at the trend in the UK to see that since speed has been the main focus of road safety the decline in deaths on our roads has slowed dramatically, which means this policy is flawed and costing lives.</i>	<i>It needs amending to remove the obsession with speed which is a red herring. Speed above the posted limit accounts for surprisingly few accidents. Road safety policy should be based on proper research not public opinion and the views of anti-car groups such as Brake or the green lobby.</i>	<i>We need to get away from speed being considered the only road safety issue when it only causes 3 per cent of accidents.</i>	<i>What is needed is better traffic law enforcement, not this obsession with speed as the cause of all accidents (which even the DfT have realized and dropped). It is also likely to lead to either mollycoddling or unwelcome legislation for vulnerable groups such as cyclists/motorcyclists.</i>

Sweden is different to the UK

I think some of the details could be adopted (e.g. accepting that human beings make mistakes and trying to engineer around them), but many aspects of the policy are impractical. In addition, I would point out that as a regular visitor to Sweden (having worked for a Swedish company), traffic conditions and the general lifestyle approach of Swedish drivers are very different to those in the UK.

Sweden and the UK differ greatly in size of economy, spread and density of population, homogeneity of population (the UK is much more diverse, both in income and ethnicity terms), work travel patterns etc. Experiments undertaken in Sweden cannot be simply transplanted into a UK context.

The Swedish people may well have an outlook that is radically different to ours and would therefore accept such as policy as a price worth paying. It is a mistake to copy other countries.

Why ask Sweden whether their idealisms should be imposed on a different country? Are Big Brother so afraid to ask its own people?

Sweden has a population density of less than 130 persons per square mile whereas the UK exceeds 780 persons per square mile. A good example is the Swedish intent to install roundabouts but UK traffic engineers know that traffic light systems are needed to handle far higher volumes. The policy also seems to miss out on the benefits of advance driver training and annual eyesight tests. Whilst not specifically mentioned as a policy because of Sweden's change from driving on the left to the right hand side of the road in 1967 they needed to have daytime running lights (DRL). In more dense urban populations of France and Germany the UK DRL put the lives of pedestrians, cyclists, motorcyclists and other drivers at risk. The term Zero Vision is very appropriate because DRL reduce the ability of other drivers to perceive hazards. DRL also cause environmental pollution. If the UK adopted DRL this would produce about 1.85 million tonnes of CO₂ pa. This would wipe out all the Kyoto savings achieved by the UK's Carbon Trust. If DRL are adopted worldwide as the Swedish Government intend the consequences of the extra pollution are untenable when NOAA are reporting increases in CO₂ levels of 20 per cent since 1990. Therefore what may work in Sweden is inappropriate for the UK.

The Swedish policy is seriously flawed. Swedish daytime lights are putting vulnerable road users at risk and causing environmental pollution. It does not include advanced driver training or annual eyesight tests. On 30 March 2005 the BBC reported that Dr. Pieter Tans Director of the US government's Climate Monitoring Diagnostics Laboratory, part of the National Oceanic and Atmospheric Administration (NOAA) at Mauna Loa Hawaii has found that World carbon dioxide levels have risen from 315 to 378 parts per million (ppm), a 20 per cent increase since 1990. Sweden is partly responsible for this. You could use ONE WATT LED non polluting daytime lights but to sell your Volvos you insist on using 55 watt tungsten halogen lamps. This is environmentally irresponsible and Swedish policy is to blame.

The road safety culture in the UK, traffic densities, hazards likely to be encountered (We do not have elks but high densities of vehicles and motorcycling all year round) are so different that Swedish Vision Zero policy would not be appropriate.

UK Policy is already too restrictive

<i>We have far too much restriction in this country as it is with Government who seem determined to run this country like George Orwell's 1984 with what are recognized as some of the best drivers in the world it is about time it looked at the infrastructure and upgrades our disgraceful roads conditions.</i>	<i>The modern obsession with "targets" is damaging, including those which seek entirely to eliminate risk from any activity. Nothing in life is risk free and a more practical approach, already applied in Product Quality circles is one of "continuous improvement".</i>	<i>Vision Zero could very easily be used by anti-car politicians and activists as an excuse for further anti-motorist policies and needless restrictions on car use.</i>	<i>We already have too many draconian rules and unattainable targets in UK.</i>
<i>Freedom and democracy has a price which must include a certain amount of casualties, however hard that is to swallow. Many people killed/injured on the roads is down to their own stupid behaviour. We send soldiers to war knowing that many will be killed, but their deaths justify the reason for sending them in the first place, for a better world without tyranny. In Britain we are the most spied on nation on Earth with new laws (and hence more law breakers) coming every week. To introduce the laws needed to bring this zero casualty nirvana into existence would crush the spirit of human endeavour and turn us into mindless obedient drones.</i>	<i>We in the UK are the most observed nation on Earth. It really is time that a halt were to be called on the ever increasing number of cameras about. It has reached a stage, now, where we could consider that the human rights of the motoring public are being infringed greatly. Bring back the Police Motor Patrols - the cameras will not catch the dangerous drivers at all. And most speed limits now in operation should be increased to take into consideration the vast improvement in the safety, performance and design of the modern vehicle.</i>	<i>I do not trust the UK government to adopt policies that will be reasonable. They will just impose more stupid and excessive restrictions and inconveniences upon drivers.</i>	<i>The only possible outcome would be a raft of ineffective legislation.</i>

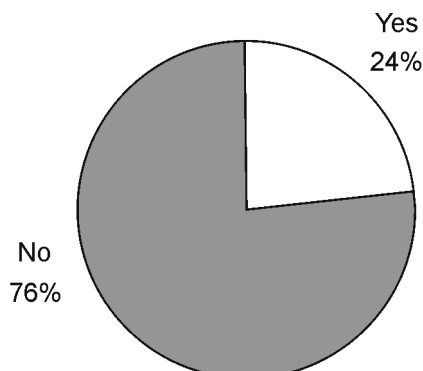
UK policy is flawed

<i>The DfT already follow a campaign of lies and disinformation in the UK with regard to motorists. Traffic calming has created congestion which in turn leads to frustrations because of longer and more difficult journeys. No mention is ever made of 80 per cent of all pedestrians being drunk or under the influence of drugs when involved in accidents, another reason why this idea is pure madness. Advances in car technology and treatment of crash victims has eliminated many deaths and reduced the number and effect of serious injuries. Having zero policy will simply lead to a reclassification of figures into a new category or boost slight injuries.</i>	<i>Until the UK government start to address road safety in a sensible manner and addresses the areas where the majority of accidents occur and invests in proper road engineering and maintenance, along with sensible education programmes road safety in the UK will continue to deteriorate.</i>	<i>The UK currently has many hurdles for road safety that must be overcome first, primarily the prioritization of revenue over safety that is causing more accidents and deaths due to poor road surfaces, dangerous driving going unchecked due to low policing and the governments continued lack of willing to investigate re-testing to increase general driver ability.</i>	<i>The application of the Vision Zero policy in the UK at this time would be particularly damaging. This is because it would be likely to strengthen the current misguided approach to road safety in this country, which is actually causing deaths and injuries rather than preventing them.</i>
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Uncertain

<i>But with modifications. The consideration of removing trees is a "no-no" to me. Also, I think that care needs to be taken to bring all age groups into the safe driving mode and this does not seem to have been addressed in the Swedish Vision Zero (or I do not see it stated explicitly). Another point, on quick perusal of the web data, is the method of restraint being suggested as that of "wire ropes". There are many occasions when this type of restraint can be of serious danger to the occupants and to other road users. Two examples are (i) when a lorry goes out of control and is flipped over due to the height of the barrier (a higher one would decapitate car users) (ii) if the wire becomes taut and then snaps it could act like coiled wire and this is exceedingly dangerous.</i>	<i>There must be some lessons we can learn, but why replace a working model, operating on an achievable scale within a conceivable timeframe, which has very broad buy-in and understanding amongst the stakeholders? The UK strategy may not be perfect, but it is at least realistic. The Swedish techniques and mid-term targets are similar to the UK strategy - apart from squeezing a parliamentary vote favouring the quantity of human life over the quality of human life; it looks like a new packet for the same soap powder.</i>	<i>Time will tell how far Sweden can get towards the target. Providing it includes all types of motor vehicles and does not penalise any specific group, e.g. scooter riders and motorcyclists) then if the UK can learn from Sweden's lessons, it would be good to latch onto their strategy.</i>	<i>I cannot say yes without knowing more about it. West Yorkshire safety camera partnership has a safer roads day which aims for zero injuries on that day. Why just one day? What we should aim for is zero collisions. If there are not any collisions then there can not be any injuries.</i>
<i>I would favour some discussion on some of the Swedish programme's features, including the emphasis on road reconstruction rather than improving road user behaviour, continuation of some high speed roads and the strong element of cyclist segregation. Speed restraint through technology such as intelligent speed adaptation (ISA) could be part of a much simpler and cheaper solution.</i>	<i>This is difficult to answer. I think it should only be adopted if we are convinced that it will not divert focus from achieving the 2010 targets and the targets that will (hopefully) replace them after 2010.</i>	<i>We should study it and its results, and hopefully learn something from it.</i>	

4 Do you think that the UK approach to road safety through specific targets is effective at reducing deaths and serious injuries?



A total of 76 per cent of the respondents felt that UK road safety targets were ineffective in reducing deaths and serious injuries while 24 per cent felt UK policy was effective. The issues raised by the respondents were that the targets were ineffective and that a different approach to road safety was required. The perceived overemphasis on speed was highlighted as a possible problem. Table 6.5 presents a selection of the views expressed.

Table 6.5: Comments on whether the UK approach of targets is effective

Targets are ineffective

The UK obsession with targets and the confusion between speed enforcement and revenue rising has created perverse incentives, both for policy makers and for the driving public. The biggest improvement in road safety will only come about when the focus is shifted to improving driver training and to removing (i.e. jailing) those drivers who persistently offend by driving while disqualified, without insurance, in unroadworthy vehicles etc.

It would be effective if we set realistic targets, and focused on understanding the causes of accidents and measures that will impact on those causes. The speed camera experience has shown that focusing on the wrong issues not only fails to reduce deaths, but actually results in the situation getting worse.

Not effective, because it promotes a culture where the numbers are everything, and encourages 'fiddling' of figures to show that a target has been met, even when it is evident that overall the policy is failing dismally.

Targets tend to lead to 'fiddling'. This is no more evident than the false claims made for speed cameras reducing fatalities!

Any targets in this area have been somewhat arbitrary. The UK targets are a product of politics, an example of many areas where the current administration has 'promised' to improve matters by a specific amount, without any rationale of how much or how to achieve it. Just

Targets tend to be fairly meaningless, and exist mainly for political purposes. In the National Health Service, for example, some seriously ill patients are being forced to wait longer than necessary for treatment, while other patients with minor ailments are moved "up the queue" to avoid breaching government waiting-time targets.

The UK is led by a lot of ministers with no experience of driving and seem to consider targets as the universal panacea for any problem, which it is not, they just get in the way of people trying to be effective.

No matter how beneficial these targets may be the UK methodology towards increasing road safety is seriously flawed. Targets are meaningless unless there is some prospect of achieving them.

because it appears to be the 'right thing to do' and 'surely we can make things better'. The only target that would make any sense would be one based on the risk/freedom balance. However, the target calculated would always be a matter for debate and should be subject to frequent review. However, it is not the targets which achieve results it is the method of achieving them. It is the method which has been so wrong in the UK in recent years, with many years of quality research and advice from experts being ignored in favour of naive/fraudulent statistics and politicians' prejudices.

Different approach required

We have a mentality whereby the people who cause most death on the roads (pedestrians launching themselves in front of vehicles) are exonerated from any blame, while the innocent passer by who happens to hit them is punished. This cannot possibly improve road safety.	A balance must be struck between safety and the need to reduce congestion. The current target, relating only to accident reduction, has led to junction designs which cause congestion across the land where none need exist. That will be causing real damage to the economy as a whole - causing loss of life in other spheres. The trade off between accident potential and speed should be via the established values of time and of life and limb.	Who knows what these targets are except for government departments? How do anonymous targets help individuals to change?	The overall beneficial policy adopted by the UK over many decades, which has resulted in the world safest roads, and decreasing casualties, has been abandoned in favour of simplistic 'easy' targets, and as a result fatalities have started increasing again. Policies set by road safety professionals, rather than local and national politicians with an eye on 'something must be done' should be the goal.
We need to look at education and engineering.	I believe in the three E's (education, engineering and enforcement) - there has to be a route to get us there.		

Speed

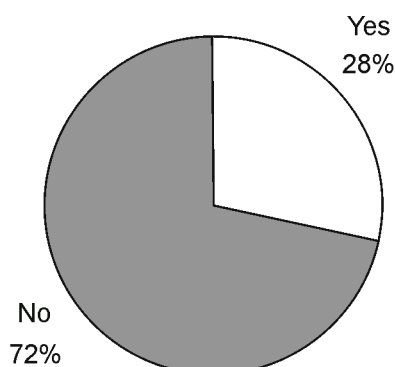
Just because a pissed up 17 year old chav, with five mates in his car, can not keep his fifteen year old un-MOTed car on the road at two o'clock in the morning, does not mean I can not drive at a sensible speed at other times during the day. Or traffic calming which delays emergency vehicles, and enrages drivers. Mix this in with the Green obsession which is currently prevalent, it is difficult to distinguish between measures which are about safety, and which are about reducing car use.	The main approach appears to be at reducing speed. Reducing bad driving and a poor pedestrian attitude would be of more benefit.	The present policy of concentrating on minor infringements of the speed limit without considering all circumstances is aimed not at reducing casualties but raising money. The results are totally disproportionate to the offences.	Too focused on speed reduction and enforcement (revenue) cameras. We have become profit not safety conscious.
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<i>No the UK has put far too much emphasis on speed. Not the real causes of accidents. Speed is only one cause of accidents. In the UK it is used as a very blunt tool to gain revenue while the real causes of accidents such as bad driving bad road lay-out are ignored as they cost money to implement. Putting all the focus on speed costs nothing but creates steady revenue!</i>	<i>The single minded focus on speed clearly is not working and needs to be changed immediately. The best solution is to have more fully trained traffic police officers to make our roads safer. Our fastest roads are actually our safest, partly due to the separation of vehicles and pedestrians.</i>	<i>The UK approach is based solely on speed, speed, speed. As a result road deaths have been rising in the UK. A more balanced approach is needed, focusing on education, engineering and enforcement. Motorists need to be engaged as individuals, not statistics.</i>	<i>Activity should be education to improve not pipe dreams.</i>
Positive			
<i>Has bred a culture of performance and improvement, at local and national levels. Though deaths have levelled off.</i>	<i>Yes. Introducing specific targets in my local London borough has focused attention on accident black spots and taken a lot of road safety expenditure out of the political agenda.</i>	<i>No question this has had a very positive impact on casualty reductions in UK. Raises priority and ensures a funding stream.</i>	<i>Continuous improvement is a good idea. Targets are a good idea. Current UK policy is failing in a big way. Deaths are going up.</i>
<i>It is reasonable and intelligence led.</i>	<i>There may be room for debate about setting targets on the basis of rate as well as on percentage. However, the broad principle of a percentage reduction has brought together professional and voluntary effort to reduce deaths and injuries.</i>	<i>Government policy is misdirected and possibly coming from somewhere else.</i>	<i>I was in charge of the policy for setting the UK's current targets and strongly believe in their effectiveness as a driver for reductions everywhere.</i>
<i>Yes, I do think the targets have some positive effect, in that they concentrate the attention of senior officers and councillors, and others, on the need to devote more resources to road safety interventions. Some road safety interventions (e.g. traffic calming and speed cameras) are effective at reducing deaths and serious injuries, although I doubt the value of others, particularly some elements of road safety education.</i>	<i>It has successfully focused public and organisations on changing policy and practice that contributes toward road casualty reduction. The flaw is that we are not able to measure changing risks faced by individuals, we concentrate only on reducing total numbers without reference to exposure to risk, or the acceptability of risk. The way forward in the UK is to understand and measure the risks faced by road users, not to try to squeeze minority/vulnerable modes off the road or demonise others.</i>	<i>Targets of reduction have been effective in concentrating minds in some quarters that something must be done. Efforts are being made and there is a great deal of commitment in many places some of which is effective (e.g. speed cameras, 20mph, traffic calming, community partnerships). But targets should be part of a programme to meet a zero vision. The trouble is that without the overarching principle there is no political will or coherence to ensure that the skills and resources are in place to follow through.</i>	

Negative

There is good and bad, but more recently I have seen so much "junk" road markings that I personally think that they are a waste of money. However, as a driver, I also notice areas where vehicles regularly go off the road, where there is negative camber and a bend which is perhaps safe for most of us, but still some drivers are not able to negotiate it, and the council do not make any effort to straighten out the road or improve the camber. Both of which would help to reduce accidents.	By concentrating almost solely on enforcement the UK has failed to make any reduction in the numbers of people killed or injured on our roads in recent years. Targets are all locally applied and as such vary from county to county and are generally focused on showing casualty reduction versus the previous 12 months. Political action is taken but there appears to be little real humanitarian intent.	The mantra of placing "safety cameras" in order to reduce the misnomer "deaths and serious injuries" simply does not work and alienates the motorist from the police and authorities. Most speed limits now being introduced are quite unrealistically low and are being put in place simply to generate funds, by way of fines, for the police and authorities.	The figures speak for themselves! They are only as low as they are because we have more interest in car safety than fifteen years ago. This has increased the weight of vehicles so wasting fuel and resources in the construction of 'safer' cars. Road safety for ALL citizens would have saved this unnecessary waste of materials. Compulsory wearing of seat belts might save lives, but what of the personal freedom to choose? Is road safety about the personal ego of politicians boasting about reduced casualty figures with scant regard for the rights of its citizens?
Road deaths in the UK are lower than accidental deaths in homes. We have an excellent record. The only aspect targeted so far has been the enforcement of speed limits. Since 1997, when this enforcement started, the 30 year declining trend in deaths stopped and deaths increased in many areas. A more effective target, so far ignored, is pedestrian education. In the UK, more than 80 per cent of pedestrian casualties are caused by their own negligence. Yet NOTHING is done to remedy this. Given that only 4 per cent of casualty crashes are caused by excessive speeds (sometimes BELOW the speed limit), it is clear that resources are badly spent on the wrong targets. This shows that government is not capable of recognising the correct issues to target and alienates drivers by strictly enforcing speed limits while casualties rise. I understand Sweden is busy making roadside structures less hazardous in collisions.	The UK approach is over-simplistic; on the whole it is shallow and shows significant flaws in the understanding of real road safety in the minds of those attempting to frame legislation. The result is a polarisation of road users - motorists, on the one hand, who are all too easily blamed for any incident and other road users who, as a result, feel they have carte-blanche to behave in an irresponsible fashion. There is a new generation of young citizens who have little or no road-sense, but who feel (through active promotion by government policy) that they can do anything on the roads and not be held in the slightest part responsible, as there will always be a driver to blame.	The UK's approach tends to focus too much on punishment and revenue collection rather than expenditure on safety measures.	Fatalities are rising after many years of falling.

5 Swedish interviewees have explained that setting a “Vision” has major advantages in setting road safety policy on a new and re-invigorated course. Do you think this would be the effect of introducing Vision Zero in the UK?



A total of 72 per cent of the respondents felt that a Vision Zero policy would not provide a new and invigorated approach to road safety in the UK while 28 per cent of respondent felt it would. The respondents further elaborated their views on why they were for or against a Vision Zero policy (see Table 6.6).

Table 6.6: Comments on Vision Zero

Against introducing Vision Zero in the UK

A vision is always desirable - a "vision zero" is a different thing entirely.

Having a target which is, frankly, stupid can only lead to sensible targets not being taken seriously.

I guess you have to have that "vision thing" but if the vision is unrealistic, then in a few years people become disillusioned.

Targets need to be realistic and achievable. If we find that in a few years time we have not met the "zero fatalities" target, it will have a demoralising, rather than invigorating effect.

The British public has become fed up of what government says about road safety. They have spouted so much claptrap over the last decade that nobody will listen to them any more.

It would alienate safe and careful road users.

Statements of policy are in this case irrelevant without an indication of the measures proposed for implementation.

That is simply an opinion, and I disagree with it. The effect would be destructive socially and economically.

Setting out a vision can be helpful only if it is achievable and this one is not.

British people can see through nonsense and would not respect such stupidity.

It is unrealistic to expect zero accidents there always will be some.

Politicising road safety has a major detrimental effect.

This is just politician speak.

Sorry to say it once again a load of techno babble

Swedish thinking is different to ours

False promises and idealistic views only lead to shattered dreams.

As our current 'road safety' policy is fatally flawed and is leading to more fatalities rather than fewer, re-invigorating it would only worsen the effect and would, in fact, increase the number of fatalities still further.

It would be a disaster. We have to get back to the policies that actually delivered a regular and reliable reduction in roads fatalities year after year.

We are all too cynical. It will just be more speed cameras.

Vision Zero is not readily achievable making those concerned likely to give up.

<i>On its own I think it would simply whip up even more anti-car feeling (further alienating already disillusioned drivers) and be the catalyst for even more ineffective enforcement. In the UK, drivers of motor vehicles are always the guilty party in a road traffic accident, regardless of the reasons why. The SVZ policy would currently be interpreted in the UK as zero tolerance of motor vehicle drivers with respect to enforcement and as a result, do nothing to improve road safety.</i>	<i>I think anti-car lobbyists would jump on the band wagon with the result that the focus would be on restricting the freedom of motorists and that emotional arguments would win out over rational thinking. There is also the funding from fines policy which encourages the criminalisation of motorists simply to balance budgets.</i>	<i>The Vision Zero would be hijacked by the anti-car groups, such as Brake, and used to justify the persecution of motorists that is currently getting worse in this country.</i>	<i>Considering the other 'nanny state' directives in Sweden, we are already too far down the 1984 road. Policing is done to the detriment always of motorists and real criminals escape detection (unless they are driving a vehicle above an arbitrary speed limit.</i>
<i>Introducing such a 'vision' would simply widen the gap between genuinely effective road safety and the current superficial 'blame-the-motorist' culture. It would result in another wave of ineffective, populist-driven and ultimately detrimental measures.</i>	<i>If they are like the British, will they have been brainwashed into giving the politically correct answer, but go off and do the opposite thing!</i>	<i>Unless the attitude to improving driving standards changes then the authorities will continue to pursue the ineffective anti-"speeding" policy.</i>	
<i>A zero accident policy is unrealistic and may have a negative effect. Less theorising and more understanding please.</i>	<i>We all get very expensive visions, most of us prefer reality to psychotic realms.</i>	<i>As it stands this vision is dangerous due to the inclusion of DRL in the scheme.</i>	<i>Unsure. I can see both sides of this one.</i>

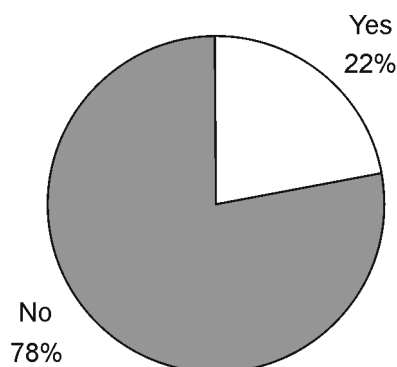
Positive About Vision Zero

<i>Need more political and public support before it would be accepted as achievable. Still a strong 'pro motorist' lobby in UK with influence over politicians.</i>	<i>The zero tolerance concept is applied elsewhere in the UK so it could be done over time. However, the press would have to be won over to play their part in public acceptability.</i>	<i>I like the idea of a "vision" because it can inspire, but as I know little about Vision Zero I can not comment further.</i>	<i>If it would bring together disparate interests.</i>
<i>In the UK the debate has been hijacked by the car lobby. We need some visionary policy making at all levels to set an agenda where car dependence is reduced and safe speed limits are set, monitored and enforced. No residents of side roads should have to suffer traffic driving faster than 20mph. No new housing developments should be built that force residents to use a car to access employment, shops, schools through lack of local facilities and public transport.</i>	<i>Only if it had serious, on-going political backing. Too many policies such as this are set-up with a blaze of publicity, only to be watered down or abandoned 3-5 years down the line.</i>	<i>A vision is something that we can all be encouraged to embrace. A target relates to what governments want to achieve.</i>	<i>I am all for setting a vision providing it is realistic.</i>

Articulating a principle helps people to be clear about aims and develop a shared ethos. Vision Zero fundamentally and unequivocally challenges the acceptance of road casualties which is both a symptom and a cause of car dominance in our transport system and our settlements. The social and legal tolerance of random violence which is so extreme it can kill and maim and which is imposed on each other by citizens who are in all likelihood complete strangers is completely mystifying to me, as is the acceptance that the least harmful, especially children, should bear the greatest risks and the heaviest personal responsibility for safety.

Starts a new thinking approach.

6 Several countries have indicated that they are considering following the Swedish lead on Vision Zero (including Austria, Switzerland and Germany). Do you think it would be a good idea for the European Union to adopt Vision Zero as an EU-wide road safety policy?



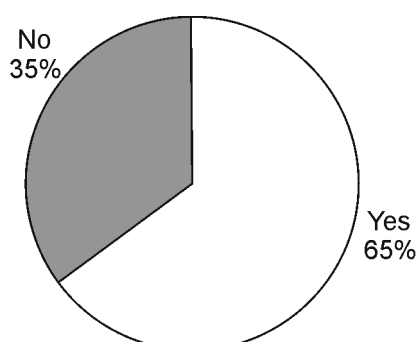
A total of 78 per cent of the respondents felt it was not a good idea for the EU to consider Vision Zero policy for road safety while 22 per cent thought it was a good idea (see Table 6.7).

Table 6.7: Comments on the European adoption of a Vision Zero policy

Against EU adoption of a Vision Zero Policy			
<i>No - road safety policies need to be decided and implemented at a local level to solve local problems and involve local people in their solutions.</i>	<i>Absolutely not. The EU meddles enough in our society, and is more remote than our own parliament.</i>	<i>Definitely and absolutely NOT.</i>	<i>Absolutely not! It would be an utter disaster for the whole of the EU and turn the clock back centuries.</i>
<i>1) The level of investment in road networks and infrastructure has been far too varied for a -one-size-fits-all approach to work; 2) Countries should be free to maintain their own sovereignty of legislation, designed to suit their own situations; 3) The different peoples of countries, and their governments, have significantly different outlooks on matters, thereby making a common policy ineffective.</i>	<i>The EU is an undemocratic and out-of-touch organisation, which fails to really debate, consider and refine new legislation in the way that the Scots and UK parliaments do. It regularly hands down arbitrary and poorly-thought-through diktats. Road safety policy is best left in the hands of national governments, which are more democratic and responsive to the needs of the countries they serve.</i>	<i>More centralisation and attempts to unify approaches in areas with quite different cultures and problems are counterproductive -- things are quite complicated enough at local level. The way forward is to tackle local hazards by applying engineering solutions to remove dangerous junctions, bends etc. and by substantial new road building to separate people and vehicles.</i>	<i>If this is adopted EU-wide it will be used as an excuse to impose more and more draconian measures with no benefit to road safety. Indeed, many of them will be counter-productive, as already happens. It will also be used as an excuse for extra taxation, and will be used as a cover for politically-dogmatic anti-car policies.</i>
<i>Trans-continental policies are inappropriate for local issues such as road safety. The EU would be in violation of the subsidiarity principle.</i>	<i>Common sense and that bunch of crackpots should never appear together in the same sentence. Of course nothing as vulgar as industry must be considered in setting a policy.</i>	<i>The UK roads are already about the safest in Europe, why should we end up with rules that potentially could make our roads less safe?</i>	<i>I do not want the EU to have control of this country - they are far too radical and left-wing.</i>
<i>A misguided policy should not be adopted, no matter how "Politically Correct" it may be.</i>	<i>The mere mention of the European Union should indicate that this country should have nothing whatsoever to do with it.</i>	<i>Europe imposes regulations on Member States. This issue should be left to the Member States themselves to decide.</i>	<i>Attitudes towards road use vary too widely across the Member States of the EU. Until road design, vehicle construction and road user training standards are equalised, applying a common policy will be meaningless.</i>
<i>We want fewer laws from Brussels not more.</i>	<i>Definitely not. The EU is control mad and must be curbed, not encouraged to meddle.</i>	<i>In general European states should not do separately what can be done together.</i>	<i>More stupid regulation. I think not.</i>
<i>How can you learn anything if you all adopt the same policies? Nit pick the best bits and go forward works better.</i>	<i>Another stupid idea for the UK to end up financing, are we not being ripped off enough?</i>	<i>As it stands promoting DRL this policy is flawed – see the flawed reports at www.dadrl.org.uk</i>	<i>But what is the policy? I only know it is called Vision Zero.</i>
For an EU Vision Zero Policy			
<i>These countries have always been ready to be regimented and have far better infrastructure. Bring the UK up to their level and perhaps it could be a possibility.</i>	<i>It would be helpful if Vision Zero was adopted across the EU, but this would not remove the need for us to go ahead and do it in the UK as well.</i>	<i>As long as it keeps to advice, information and reporting - leave the states, provinces, counties and towns to develop their own policy.</i>	

<i>Could be linked to EU-wide encouragement of VRUs for environmental and social reasons.</i>	<i>Yes, but every government within the EU would have to buy into the idea and promote a culture of road safety.</i>	<i>It would ensure that countries like the UK had to follow the whole vision and spend the money on an improved safer infrastructure.</i>	<i>Only if a realistic and sensible policy can be formulated.</i>
<i>An EU-wide policy would show the importance of addressing road traffic accidents - it should be as morally unacceptable to have been caught speeding as it is to be caught drink driving (20 yrs ago people boasted of being caught drunk behind the wheel - not now). An EU-wide approach would help give weight to the arguments.</i>	<i>Yes - co-operative working can be beneficial. However, there are various means to an end and different countries may need to take varying actions to achieve Vision Zero.</i>	<i>Yes in principle, but it should not be very prescriptive in terms of how it would be implemented. That is because circumstances are very different across the continent.</i>	<i>Any policy would be more effective if it was adopted EU-wide.</i>

7 If Vision Zero were adopted in the UK would it require additional finance (over and above current levels) to achieve its objectives?



A total of 65 per cent of the respondents felt that the adoption of a Vision Zero policy in the UK would require additional financing while 35 per cent of respondents felt that this would not be the case. The areas where additional spending would be required and are not covered in current budgets are presented in Table 6.8.

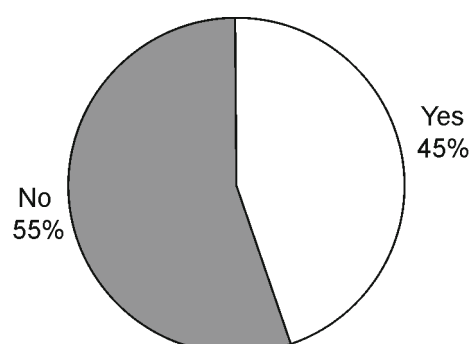
Table 6.8: Comments on additional finance for Vision Zero objectives

<i>We would see a whole raft of new legislation whose drafting, implementation and enforcement would all have substantial costs.</i>	<i>Given that it would not work anyway, no expenditure will be justified. However, a great deal of money will undoubtedly be spent on it, much of it on PR to try and convince us that it is working when it is not.</i>	<i>There is no doubt that the government will claim additional spending is required, and there is no doubt that they will use this as an excuse to tax drivers more heavily.</i>	<i>Not only would it cost money directly, it would also cost money indirectly by preventing efficient transport of goods and people.</i>
<i>Cameras which do not improve road safety are self funded. PROPER road safety by police, engineering and education will cost money.</i>	<i>To achieve zero fatalities would require the whole economy to be devoted to such a programme so spending requirements would be enormous. Here is where unreality creeps in of course.</i>	<i>There is now too much being spent on hair-brained schemes - we do not want any more of them, thank you.</i>	<i>Need much more spent on public information, road engineering and technology research. The zero vision might be possible if we had Intelligent Speed Adaptation fitted on all vehicles.</i>
<i>Of course it would! Massive extra spending on road barrier protection, car crash protection, rapid response paramedics, etc, even if the objective were achievable! Most oppressively of all, to get anywhere near this objective would require major and unpopular concessions of 'freedom' from ordinary people - enforcing this situation would of course be extremely expensive.</i>	<i>Loads more finance in all areas, but particularly road building. Many accidents could be avoided by diverting through traffic around villages/towns/cities rather than through them.</i>	<i>Roads would need to be greatly improved. Roadside barriers in dangerous areas are an excellent idea. Of course collapsible lamp posts and removal of unnecessary signs would also help.</i>	<i>Increasing their budgets is always a goal of bureaucracies, of course it will. All that can be said is it will not be spent on anything useful.</i>
<i>There would need to be a significant investment in both road infrastructure and driver training. Many of the UK's roads would need to be rerouted or completely redesigned and many more new roads would need to be built. There are many rural major link roads that are well below the required standard for the type and level of traffic that they carry and many towns and villages require bypasses urgently. The current UK road user training programme focuses purely on vehicle drivers passing a single test, usually at a very early age. It is quite simply pathetic. Anyone who intends to use a road should have some basic introductory training and vehicle drivers should be trained to a much higher standard than they currently are and be regularly re-evaluated.</i>	<i>I assume it would require additional finance as the current level of spending is quite disgracefully inadequate. I understand that about £6 billion was spent by the Government on roads etc. out of about £45 billion taken in motor taxation. Countries such as the USA and Japan plough back all their motor tax revenue into the system and in some cases also spend additional sums.</i>	<i>Yes, of course it would for the government to add its 'spin'. The transport infrastructure is in a bad state of repair currently and this would probably mean that more money that should be invested in the transport infrastructure will be wasted elsewhere.</i>	<i>Any excuse to levy further taxes on the motorist is always taken by this Government in any event.</i>

<i>Needless to say, this would mean a complete overhaul and would also require significant investment.</i>			
<i>Nearly all money spent on road safety in Britain is wasted as it has only a simplistic single issue mandate (i.e. speed kills).</i>	<i>Improving driving standards would require funding. What policies would result from Vision Zero?</i>	<i>Removing traffic enraging measures would release millions that could be spent on advanced driver training.</i>	<i>Concentrating solely on speed cameras is cheap but ineffective.</i>
<i>Roadside medical tests. More roadside mechanical tests of all motor vehicles. Immediate bans for drivers tailgating, and fines for using mobile phones increased to £1,000.</i>	<i>It would require massive funds - primarily from motorists who would be breaking new 'technical' regulations in complete safety, but would be charged by computers for doing so. Meanwhile, real fatalities would be climbing.</i>	<i>There is already considerable flexibility in deployment of funding locally, but there would need to be more emphasis on joining up of e.g. health and education programmes.</i>	<i>If the millions currently being spent on speed humps etc. were diverted into driver training the year on year decline in accident that has halted due to these negative methods could be resumed.</i>
<i>There is hardly any road transport budget in the UK, as for 30+ years road expansion and improvement has been out of touch with the number of motorists and the routes in use. Little driver training beyond the box crossing exercise that is the driving test.</i>	<i>There would be massive and unreasonable spending and regulation. The effect on travel and the economy as a whole would be massively negative.</i>	<i>I have no idea how this would be achieved, but any increase in activity on any policy would have to result in an increase in spending.</i>	<i>Very substantial increase in the budgets for: road engineering, road maintenance, training and education, sensible speed limits set by professionals.</i>
<i>It could be argued that the government already takes enough money from the motorist under various excuses. Money may need to be diverted to different use - e.g. instead of wasting money on the road traffic calming schemes- the money could be much better spent on proper research along the lines taken by J. J. Leeming when he was trying to establish the real causes of accidents and looked for ways of reducing the risks. So, changing the spending yes - pouring additional cash - no and it should not be required if the existing money was spent wisely.</i>	<i>Widening busy existing main roads in built up areas as opposed to stealthily introducing congestion charging more traffic calming cameras and expensive parking etc is key to relieving congestion in many areas. Building without taking into account an increase in traffic levels has caused excessive congestion. No one is willing to bite this bullet as demolishing buildings would cause uproar. they would rather let traffic clog up than face reality.</i>	<i>Currently only a small fraction of road users taxes is spent on roads. The money raised in transport taxes should be spent on transport. I am sure car drivers will have no objection to money being spent on cycle lanes that are separate from the road as opposed to having an arbitrary white line painted on it to create a cycle lane which then often peters out after a few yards.</i>	<i>It may involve some of the health budgets spent on helping people recover from RTAs being put into prevention instead. May require more spending on advertising - this could be diverted from existing spending.</i>
<i>I am not sure whether to answer yes or no to this question. Some of the most effective measures to achieve Vision Zero are cost neutral - e.g. much greater use of speed cameras, coupled with much more extensive 20mph limits in urban areas.</i>	<i>A vast increase in the number of traffic police. About the only plus side on this would be the possibility it might finally force the Home Office to split traffic policing from general policing in the same way that the Highway Patrol works in the USA.</i>	<i>Road safety education. Improved driving course. Compulsory driver re-test. More promotion and recognition, by insurers, of those who undertake additional driver training. Compulsory advanced driver qualifications for company drivers.</i>	<i>Intelligent speed adaptation could be implemented cheaply and would be far outweighed by the economic and financial savings.</i>

<i>The 'book' would have to be rewritten and existing policies abandoned at great expense.</i>	<i>Vast increases in most budgets for engineering, education and enforcement.</i>	<i>Widespread engineering to separate modes would be costly and often impossible, given our existing road network.</i>	<i>I do not really know, but past experience tells me that any new initiative ends up costing more, to the public and especially for road users.</i>
<i>Many road surfaces are unsafe due to pot holes, a lack of road surface grip, and worn out white lines due to the huge road repair backlog in the UK. Crash barriers need to be erected to protect vehicles from collisions with roadside objects. Many unlit roads would be made safer by installing lighting. The replacement of multi-functional Traffic Police by single function speed cameras is killing people. Traffic Police numbers are down 30 per cent on 1997 - this policy needs to be reversed.</i>	<i>The only way to achieve it would be to prevent individuals using the road - the additional budget would need to be given not to transport budgets but to the police and military to impose limits on travel. I am not saying vision zero cannot be done, just that the measures which will be ultimately required would be draconian and unacceptable. I commend the aspiration that we could live in a world with no more death, or war or poverty, but let's not confuse crying for the moon with reaching for the stars</i>	<i>It would be a redistribution of finance, rather than additional finance. A major part of the current cost falls on society in general (employment disruption), family and community, but also police, ambulance, NHS and long term social services budgets. Although current estimates of cost are tending to get more accurate, there are probably still major underestimates.</i>	<i>There is too little currently spent on traffic policing and integrated approaches to road planning (to include safety). Both areas would need significant additional funding. There would also need to be a significant advertising budget to alter public perceptions about road safety.</i>
<i>Serious extra funding for the engineering changes required, much of which would presumably be required for speed limit changes, re-engineering of junctions and separation of transport modes – otherwise it's just words and spin.</i>	<i>Possibly. Money is not the main issue. It is political will, unless the aim is to achieve zero overnight. Much can be done by using existing technologies. Enforcement might cost more.</i>	<i>Associated costs to beef up enforcement. Public transport, separation of cyclists, prioritising pedestrians in all towns across Britain, would all need to dramatically improve. Cancellation of road schemes would contribute to a programme of road safety.</i>	<i>Because we have large amounts of capital put by for road safety engineering this feeds the public perception that the network is at fault, when in fact it is a driver behaviour problem</i>

8 If Vision Zero were adopted in the UK would it require any new powers to be vested in local authorities/highway authorities?



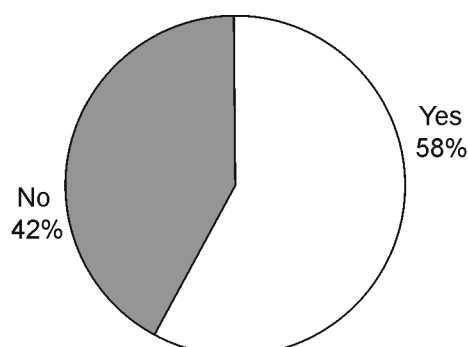
A total of 55 per cent of the respondents felt that no additional powers would be required for local/highway authorities while 45 per cent felt there would. The type of powers that would be required are presented in Table 6.9.

Table 6.9: Comments on new powers for local authorities under Vision Zero

<i>It would require Stalinist/ Nazi type powers to enable vehicular movement to be restricted.</i>	<i>They already act like the out-of-control Nazi party. Do not encourage them.</i>		
<i>If the method of addressing the issue is to mean 20 mph speed limits across the whole country then probably yes. Introduction of compulsory road safety training for cyclists may be needed, but only if sensible rules are ignored by them and such training is adopted as a form of re-education of offenders.</i>	<i>You do not have a don't know button, but as you have not indicated how you expect the impossible vision to be implemented cheaply then the only way I can see is the banning of all motorised road transport, and even then there will be the odd case of two cyclists seriously injuring each other.</i>	<i>The authorities (including the police) already have more than enough powers. However, this will undoubtedly be used as an excuse for more and wider powers, which will be misused and won't do anything to achieve the stated aims.</i>	<i>Probably - I dread to think of the potential consequences.</i>
<i>This will be used as yet another excuse to bully drivers.</i>	<i>Well the only way it could be achieved would be via a "police state" so in that sense yes. But again it is not worth the benefit.</i>	<i>Any new initiative of this scale will be used as an opportunity by the executive to increase its powers.</i>	<i>It shouldn't but bureaucracies always seek new powers, of course it will.</i>
<i>They should be told to stop building humps and put the asphalt in the potholes.</i>	<i>This government is continuously taking more powers - we should resist this at all costs.</i>	<i>The police have sufficient powers to make our roads safer - they are just lacking the funding and hence manpower.</i>	<i>Power to force change on local authority by Highways Agency or government.</i>
<i>Authorities already have the power they need, they just don't have the resources.</i>	<i>Probably, in order to enforce the draconian restrictions that would be necessary to get anywhere near the objective.</i>	<i>These bodies already have more than enough power to enforce our policies.</i>	<i>Authorities now have too much "power" to make our lives a misery.</i>
<i>Local Authorities are lacking in expertise. Highway authorities require to be modernised. Therefore new powers would be inappropriate at present.</i>	<i>There must always be an excuse for further bureaucracy and expenses.</i>	<i>I really don't know but I assume it would lead to more incompetent bureaucratic meddling!</i>	<i>No idea, but enforcement would need to be increased.</i>
<i>It will need the Galileo spy tracking system to be operational and a vast empire to run it and of course extra courts/prisons and all the rest of the infrastructure of a police state.</i>	<i>More motorist-financed quangos to administer - and reap the benefits of - such schemes. And vast sums to finance another public sector computer system which would be late, over budget, under functional, and possibly abandoned. CSA, anyone?</i>	<i>Yes, to spend allocated monies on the programmes for which it is intended and not to spend in other areas.</i>	<i>Road safety policy should be carried out by trained traffic engineers not by local authorities who are controlled by councillors who have their own political agendas.</i>

<i>Speed camera partnerships should be able to install safety cameras wherever local communities request them (rather than having to wait till four people have been killed).</i>	<i>Power to set their own taxes and set their own regulations - for instance road user changing and speed limits.</i>	<i>Powers to manipulate statistics abuse of camera technology to further crack down on drivers further denial of legal rights for drivers.</i>	<i>In general, change of emphasis on speed and capacity reduction rather than their maximisation, i.e. removing legal requirements on - facilitating expeditious movement of traffic.</i>
<i>Probably more arbitrary enforcement with private enforcement bodies which would become self-serving. Definitely not desirable.</i>	<i>Quite clearly they would have far more work. As an example to obtain Vision Zero all the roads in the UK would have to be bought up to a far higher standard, road signs would need to be renewed, safety barriers installed and updated, road works completed and such.</i>	<i>No, but guidelines would need to be radically altered so that safety was at the heart of highways policy.</i>	<i>Powers to pull in drivers, without fines or intentions of fining them, at a later stage and showing them (from cctv, or other, footage) where they had behaved recklessly. Road signs in areas that show the speed e.g. 30 mph on the road where it is not allowed today (!).</i>
<i>Perhaps to arrest people immediately who appeared to be doing anything that could potentially cause an accident? e.g., a pedestrian crossing the road when the man is on Red.</i>	<i>I believe legislation would be required to enforce 20mph limits.</i>	<i>If you are serious about zero casualties you have to remove every vehicle and vehicle operator that could possibly cause human damage – it is that simple. Just do not ask me to vote for any party that wants to control my movements. The vision zero premise, that death/injury as part of the transport system is ethical unacceptability, leap-frogs the implications of the human condition - we know we are at risk from and pose risk to others, we accept the risk so as not to stunt all of our lives.</i>	<i>I am not sure. It's a legal question to determine who has which level of authority and which area of the law are covered by the Road Traffic Acts that need to be weighed up in the light of such moves.</i>

9 Would Vision Zero require new motor vehicle construction regulations/standards?



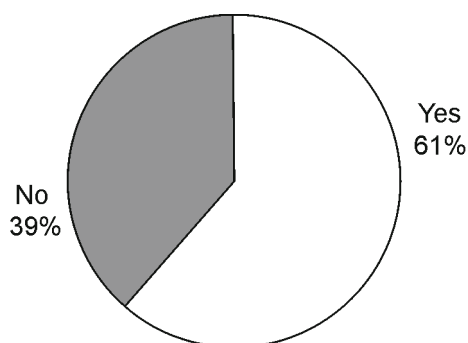
A total of 58 per cent of the respondents felt that a Vision Zero policy in the UK would require new motor vehicle construction regulations while 42 per cent felt that this would not be the case. The type of regulations that might be required is presented in Table 6.10.

Table 6.10: Comments on new vehicle standards and regulations for Vision Zero

<i>Vehicles would need to be made more "pedestrian friendly" in particular.</i>	<i>No new regulations are required, but this policy will be used as an excuse to introduce petty and needless restrictions.</i>		
<i>There is much more that vehicle manufacturers could do to eliminate many of the reasons that accidents occur and minimise the damage to those involved, should they occur. Braking and traction systems that appear on premium vehicle models should be compulsory across all new vehicles. Systems to monitor driver alertness, intoxication, distraction and fatigue should be developed and deployed across all new vehicles. Systems to monitor the condition of vital vehicle components (tyres, steering, lighting etc) should be developed and deployed. Systems to cushion those involved in a RTA (airbags) should be compulsory on new vehicles.</i>	<i>Again I suppose so. As previously stated I believe the goal should be continuous improvement in all standards and let's not forget that enormous improvements have been made in vehicle standards in the last decade or so. These have not been matched by improvements in the road infrastructure, despite the huge increase in vehicle numbers.</i>	<i>Well it could involve all kinds of lunatic proposals. Vehicle construction is always a compromise between safety and other benefits. Many people prefer comfort and speed to safety, in the same way as they make many personal choices about lifestyle. Nothing is ultimately safe in this world and you cannot make it so.</i>	<i>A car which enables its occupants to survive any conceivable impact is possible today. At production volumes, it would cost around £150,000 each. Driving would become the preserve of the rich.</i>
<i>External control of vehicles preventing them from travelling freely.</i>	<i>I would think so, bearing in mind the possibility of speed limiters on cars.</i>	<i>Shouldn't be a problem cars are getting safer all the time.</i>	<i>I am sure they will dream up more standards.</i>
<i>Increases in active and passive safety systems, thus further downgrading the importance of driver training and awareness of road conditions.</i>	<i>Modern motor vehicles are extremely safe, and have a wealth of technology to aid drivers. You can continue to develop them further, but unless the driver chooses to drive with care you will still have accidents.</i>	<i>Motor vehicle standards should be subject to continuous review.</i>	<i>Potential speed limiters or black box technology.</i>
<i>You cannot expect any measures to be retrospectively fitted to old cars.</i>	<i>Whatever was required it would be used by Government to impose further their grip on the population.</i>	<i>Anti-crash technology, crash protection, technology, Auto-pilot technology.</i>	<i>Quite possibly - the cost would be reflected in higher prices paid for vehicles - they are already too high and would simply add to the "rip-off Britain" tag.</i>
<i>There are already far too many regulations, and standards have markedly improved.</i>	<i>Probably by speed limiters set at 5 mph, foam rubber fenders, man with red flag walking in front of all vehicles.</i>	<i>Banning all vehicles.</i>	<i>Evolution of motor vehicle, road layout and construction, design is already way ahead standards used in current safety propaganda.</i>
<i>Speed limiters operated by outside sources plus tracking devices for the satellite system. Vehicles would require soft fronts for pedestrian accidents plus some form of radar</i>	<i>Modern standards are OK</i>	<i>Undoubtedly electronic surveillance equipment would be required - charging, speed monitoring, speed control.</i>	<i>Having smashed the British motor industry, let's tread them into the dust.</i>

accident avoidance system. Infra-red lights or similar for spotting pedestrians on unlit roads as they will be allowed to walk around in the darkest of clothes and have no restrictions placed upon them as all accidents will be the driver's fault as is now being mooted in the EU.			
European and US standards for the next decade are getting particularly stringent, particularly around pedestrian safety.	Dress the driver and passenger in a padded suit of armour. This questionnaire is becoming silly.	It should not require such. The industry proved to be capable of self regulating and many safety measures were introduced in the products voluntarily. Let's stop being obsessed with red tape!	These are evolving all the time as car construction technology improves e.g. seat belts, air bags, crumple zones have all developed over the years.
Not sure specifically. Getting rid of bull bars on the front of 4WDs and ensuring that cars cannot go above a certain speed would be a start.	Intelligent speed adaptation. Engine management recording for crashes.	Incorporation of ISA technology in new motor vehicles. Redesign of engines for lower levels of vehicle running speeds VRU impact-friendly body design.	All cars built like Swedish tanks and vulnerable road users segregated from the roads.
Quite clearly current vehicles still fall way short of standards which would protect both occupants and pedestrians from impacts. As an example how would you obtain Vision Zero unless all cars could withstand the impact of a 32 tonne lorry travelling at its legal speed limit?	Most likely - the end result would probably be enforced curbs on performance, choice and more expensive vehicles	Intelligent speed adaptation, hazard detection etc. such as to remove the possibility of driver error.	Vehicles would require improved occupant and pedestrian safety.
It could, but I think the idea of requiring limiters on vehicles is a bit further off than the present. I give the evidence of the cause of accidents and frustration on motorways by one lorry overtaking another (for 1, 2 or 3 miles) and causing traffic jams and frayed tempers.	Vehicles would need to be constructed to be less lethal in collisions, both for the occupants in the case of vehicle v vehicle collisions and for the pedestrian in vehicle v pedestrian collisions. Speeds should be restricted but not at the expense of acceleration which can often help a driver escape a deteriorating situation.	All major safety criteria for cars concern occupant safety. Pedestrian safety features will never sell cars so they need to be laid down in statutory regulations.	Probably. Car shape at front, position and substance of front bumpers could be important.

10 Would Vision Zero require additional police powers or additional guidance to Chief Constables on how police resources should be reallocated?



A total of 61 per cent of the respondents felt a Vision Zero policy would require additional police powers or additional guidance to Chief Constables on how resources should be allocated. Further comments on are presented in Table 6.11.

Table 6.11: Comments on the need for additional guidance for Chief Constables

<i>Chief Constables have insufficient autonomy as it is.</i>	<i>They have the powers already.</i>	<i>Tell them to stop their obsession with speed.</i>	<i>Forget Vision Zero in this context. The Police should be constrained to law enforcement. On no account should they become "lawmakers".</i>
<i>Ineffective legislation geared towards this absurd idea would divert resources from genuine road safety measures.</i>	<i>It would require Nazi/Stalinist powers to be employed so that innocent and safe road users could be vilified.</i>	<i>It should not but we all know that more speed cameras and surveillance of motorists, the same old failing recipe of the last few years, will be the result.</i>	<i>I am sure more police time will be wasted persecuting the motorist even more than at present (difficult though that is to imagine).</i>
<i>If we must have more police then at least let us have a totally separate traffic force not answerable to the present set up, so they can be left to dealing with crime as they fail effectively to do so at present.</i>	<i>Power to make random vehicle stops to test driver ability and/or in connection with new legislation relative to Vision Zero.</i>	<i>Police have got to stop focusing on speed, speed, speed - and they have got to remove the financial incentive associated with speed cameras. Police have to return to the days when dangerous driving was the focus, not exceeding some arbitrary limit.</i>	<i>To get anywhere near this objective would require major and unpopular concessions of 'freedom' from ordinary people. Enforcing this situation will require additional police powers or additional guidance to Chief Constables.</i>
<i>Police Chief Constables will do what ever is necessary to protect their empire and ignore the fact that the police can only be truly effective with the consent of the majority of the public.</i>	<i>As the police would no longer be able to use cars then there would have to be many more of them to cycle to the scenes of crimes in the required response times.</i>	<i>Would require Chief Constables to police roads in a more holistic manner.</i>	

<i>The police have too many powers in the UK already - we really do not want them to have any more ... they cannot be trusted to be just in the matter(s) of road safety. If any evidence of the unjustness of the police see the "safety camera partnership(s)" record on this - where they are now prosecuting motorists for breaking inappropriately low set speed limits and even limits which are themselves illegally set and illegally enforced.</i>	<i>This is not a question that can be answered with just yes or no. As per local authorities, the UK police already have all the necessary powers to enforce policy. The police certainly do require some additional guidance as regards deployment of resources. The only factor that is currently being policed in the UK is motor vehicle speed and this also happens to earn the cash-strapped police forces some valuable extra income.</i>	<i>Even without Vision Zero police resources should be redeployed, restoring police patrols instead of almost total reliance on inanimate cameras often enforcing inappropriate limits. (speeding is generally about fifth or sixth in the list of accident causation factors!) Police form filling must also be drastically reduced or delegated to junior or lay staff.</i>	
<i>Traditionally traffic policing in the UK has largely made use of police traffic cars. This approach has coincided with a steady reduction in road fatalities and drunk driving. In recent years the number of traffic patrols has been cut, and speed camera numbers have soared. This has coincided with a slight increase in road fatalities and a large rise in drunk driving. We need to move back to having more mobile police patrols, which can deter all kinds of motoring offences on all roads, and away from speed/red light cameras, which detect only certain types of offences at certain fixed locations, and are useless against drunk driving and joyriding, which are two of the most dangerous motoring offences.</i>	<i>Further, unnecessary, powers will undoubtedly be given to Chief Constables, and they will be "guided" into misapplying them. The police already have quite enough powers to deal with road users - what is needed is a requirement for them to re-instate their traffic divisions and have our roads patrolled by trained, experienced police officers, rather than just being under the constant eye of cameras.</i>	<i>Well the only way it could be achieved would be via a "police state" so in that sense yes. But again it's not worth the benefit. In reality what it would mean is removing police resources from other more beneficial programmes to road safety for negative overall benefits. It's an economic decision that should be used to justify expenditure, not have road safety take priority over everything else.</i>	<i>This would have a negative effect on policing. For example, I have refused to give requested practical help to police because I am angry when I see families suffering because a driver has been disqualified from driving for very minor offences. The ability of most of our chief constables is utterly inept in road safety. They will not change because they refuse to listen to reasoned argument now.</i>
<i>Yes, leading to further deterioration in public respect.</i>	<i>See answer nine, ALL accidents will be blamed on the driver so police will have less to do.</i>	<i>I imagine so. Resources should go to traffic patrols, not speed monitoring.</i>	<i>I would like to see police protecting us from assault and vandalism, not setting up more speed cameras.</i>
<i>Police should assist and advice motorists, not just fine them.</i>	<i>The last remaining vestige of independent thought from Chief Constables would need to be excised in favour of political targets and policies.</i>	<i>Chief Constables are already ignoring rape, burglary, theft, murder, etc. as too difficult to tackle, motorists are just a soft touch.</i>	<i>Installing of clusters of Light Emitting Diodes totalling not more than 1 watt.</i>
<i>The power is currently available if utilized correctly. However with too few traffic police to utilize the power, then new laws would probably be introduced in an attempt to make up for</i>	<i>Guidance on enforcement of drink driving through greater use of intelligence. Commitment from the Home Office to road policing. Increased numbers of traffic police officers to ensure that</i>	<i>It would most certainly require this. At this time they continually seek out targets that they can achieve whilst in many areas more serious matters receive little attention.</i>	<i>Government would need to make roads policing a very high and very clear priority for the police. Much higher and more visible roads policing presence. More use of technology such as safety</i>

<i>this, such as the ban on mobile phone use, rather than using the current Driving without Due Care and Attention laws.</i>	<i>violations not caught on camera could also be pursued.</i>		<i>cameras and ANPR. Keeping public opinion 'on side' would be a challenge.</i>
<i>The role of the British Transport police should be applied to all national roads beyond that counties should be in a position to develop their own policies.</i>	<i>Go back to traffic police and remove speed cameras from non-black spots. Traffic light cameras to remain though.</i>	<i>An army to stop us talking, eating listening to the radio or from exceeding 4 mph.</i>	<i>Road safety should be made a core police priority.</i>
<i>Police would need to be involved in all aspects of Vision Zero, but should not have a right of veto on measures which might increase policing.</i>	<i>More privatization of enforcement. Again not desirable.</i>	<i>Without knowing details, I would guess this would be a "yes".</i>	<i>Recent policing priorities have led to significantly fewer traffic officers in the UK. This trend would need to be reversed.</i>
<i>Certainly guidance.</i>	<i>Not really sure.</i>		<i>Need to ensure that rules are followed and not allow for dangerous driving.</i>
<i>Proactive traffic police units should be re-established and properly funded and supported.</i>	<i>Additional guidance for police as well as other bodies including local authorities would be necessary. The Home Office would have to buy into the idea.</i>	<i>This is about education - so educate the Police as well.</i>	<i>Road safety needs to be given a higher priority by the police force - enforcement is an important part of road safety.</i>
<i>Less than two years ago there were NO police assigned to traffic (or drugs or ...) in L B Hounslow. Now, with an election upon us the situation has changed. There needs to be a more consistent policy, less politically related.</i>	<i>Yes. Otherwise over-zealous Chief Constables will devote excessive resources to enforcement.</i>	<i>The police already waste their resources. I do not see what further/extra rules- will do to help the beleaguered motorist.</i>	
<i>The police focus on roads policing, i.e. stopping criminals using our roads. They also need to stop bad drivers using them. Speed cameras do not catch bad drivers, training traffic officers do. Chief Constables direct resources to meet government targets. Road safety has not featured as a government target for some considerable time. Highly trained police officers have been devalued. The wheel has fallen off.</i>	<i>The firearms and riot units would need to be bigger - although they would have to have special dispensation to move around... Even within the current UK policy, the police could have educational or traffic control roles which would make them more effective than a simple enforcement focus. That would take much more resource and higher priority in UK police policy. This is something I would support more than the threat of life-limiting travel constraints.</i>	<i>Police need to give road crashes/transport management higher priority. They should be permitted to move cameras around without advertising locations. Police need to widen their investigations (not just criminality). I like the idea of an independent board that works with all agencies including the police. The findings and recommendations must be acted on.</i>	<i>Make this part of the visioning process. But greater powers to order retraining.</i>

11 Do you have any general comments on Vision Zero and the desirability or otherwise of adopting the same policy in the UK?

The majority of the respondents further elaborated their concerns of adopting a Vision Zero approach to road safety in the UK. These concerns represented the high percentage of respondents who were against the adoption of a similar policy in the UK (see Table 6.12).

Table 6.12: Additional comments on Vision Zero

<i>I cannot think of anything likely to be more counter-productive to road safety being taken seriously.</i>	<i>Vision Zero, whilst laudable in its intent, will never achieve its stated aims. Road safety policy in this country is failing badly at the moment, and in the current climate Vision Zero will be used as an excuse for 'more of the same'.</i>	<i>This is totally unrealistic. Accidents happen to aircraft despite vastly more intensive safety procedures. Anyone who thinks this is viable is living in cloud cuckoo land.</i>	<i>This policy would be utterly disastrous for the UK. It would severely damage the economy. It would destroy the freedom and democracy for which our parents fought 60 years ago. It would turn the people against the government.</i>
<i>It is a dangerously oversimplified policy that inevitably neglects the contribution to safety of individual behaviour. Road safety is a matter of psychology. We should enjoy the benefits of engineering improvements to roads and vehicles as they become available, but we also have to obtain good performance from the participants in the road safety system. Vision Zero undermines good performance from individuals.</i>	<i>This is not something that would merit the extra cost inconvenience to the travelling public would be unlikely that public transport would come into line (the new safety systems for trains have STILL NOT BEEN IMPLEMENTED). We could easily improve/reduce the numbers of deaths on UK roads by other means other than focusing solely on speed.</i>	<i>The policy can be seen as another example of over interference of governments, and an attempt to 'save us from ourselves'; this trend must not be allowed to continue.</i>	<i>Yes - forget about it! As for the completion of the details at the bottom of this questionnaire - the police can be vindictive in the UK - hence the reluctance to allow my comments to fall into their hands. Sad isn't it - that a law abiding 75 year old retired lecturer should consider such a stance!</i>
<i>Basically a silly idea that only politicians would think sensible.</i>	<i>It is highly undesirable.</i>	<i>Some of the ideas are good and should be implemented but adopting the whole thing would be foolhardy because of the risk that it will become politicised and hijacked by the anti-car lobby.</i>	<i>This needs to be treated with great care, as it could so easily be hijacked by the powerful anti-car lobby for its own purposes.</i>
<i>Only hysterical people have visions. They should not be allowed anywhere near power or planning.</i>	<i>The policies in the UK need to change as the current focus on speed is not working. Vision Zero should be looked at closely, but other alternatives should be looked at too.</i>	<i>We don't need more regimentation; just more common sense and a decent infrastructure. This survey takes much more than 5 minutes, like all official policies you have to take it with a pinch of salt. Sorry to be so cynical but that is the way a lot of the electorate feel.</i>	<i>Vision Zero is a dreamer's dream, and will result in unnecessary deaths and injuries as people pursue a dream at the expense of facing reality. Those who promote Vision Zero will have blood on their hands.</i>
<i>Need to adopt wider/impartial view.</i>	<i>It is a ridiculous notion.</i>	<i>A complete waste of time and money, chasing the unattainable.</i>	<i>Undesirable.</i>

<i>I think the title shows No Vision, and to be out of touch with much of the motoring public.</i>	<i>Instead of Vision Zero I suggest that a totally new approach to driver tuition and licensing, plus proper investment in new safe roads would, although costly, achieve the best possible result.</i>	<i>The fact that it emanates from Sweden, is linked to possible EU directives and further burdens motorists is quite sufficient to alert all citizens to further unwarranted interference, regulation and tax burdens.</i>	<i>The existing regulatory infrastructure is adequate if operated efficiently and it is counter-productive to add additional layers of obfuscating legislation and controls in the hope of thereby making some improvement.</i>
<i>Although I am against this vision you will realise that I believe a root and branch reform of traffic policy is long overdue instead of the present unrealistic approach reinforcing policies which have clearly failed with more of the same!</i>	<i>It would simply be another nail in the coffin of the British motorist. The opportunities already exist for improving road safety, but they are being squandered to dogma and political correctness.</i>	<i>DO NOT WANT IT! Let's have proper road safety with personal freedom as the main criteria not politician's ego.</i>	<i>Those in favour of this policy should put their names, reputations, and personal finances on the line - they will be killing people and should bear such responsibility when casualties rise.</i>
<i>Sweden should put its own house in order by banning dangerous and environmentally damaging DRL before seeking to advise others on road safety. Like the little boy in the story of the Emperor's new clothes world opinion is building against this flaw in Swedish road safety policy at www.lightsout.org and www.dadrl.org.uk</i>	<i>I consider this yet another idea by an increasing bureaucratic meddling in our lives. Most accidents could be engineered out of black spots coupled to better driver and pedestrian education/training. There should also be more police traffic patrols.</i>	<i>Instead of wasting time and money on yet another headline grabbing scheme it may be good idea to ensure re-print of the Leeming book and start honest consultation on this subject.</i>	<i>This is a nightmare idea.</i>
<i>The general public should have the automatic right to vote on these matters before they are made law assuming both sides of the argument could be presented fairly (unlikely). European political classes have been almost completely taken over by so called "greens" who hate cars and the mobility and freedom to travel that people enjoy. They wish to revert to a pre car age where apparently life was wonderful. This amounts to a vicious attack on people's freedom achieved by manipulating arguments.</i>	<i>Until you can create the driver who won't make a mistake, the vehicle that won't suffer a mechanical failure, the road surface that retains total grip in all conditions it's an impossible dream. Having attended crashes in which well over 100 people were killed seriously injured it is a nice idea but it would be better concentrating resources on more realistic targets.</i>	<i>I do not know enough about Vision Zero to make many comments. People do not like having someone else's vision imposed on them so it would be important to "catch" the vision to enthuse people and give them ownership. If the statistics from Sweden are good, which I suspect is the case, then giving them the statistics might be a good way forward.</i>	<i>The small risk of being killed on the road is far outweighed by the benefits of mobility that the car has brought to the masses. Most human activity, including road travel carries an element of risk. The last thing that I want to die from is boredom.</i>

<i>I do not doubt the sincerity or belief-in-good held by proponents of Vision Zero but, to be credible, the means employed to realise the vision must be supportable - at present the whole notion seems highly unrealistic and will take a great deal of resource and effort to explain it to a sceptical public. The resource needed to make zero-casualties a remote possibility, or even simply to convince most road users it is an achievable and worthwhile endeavour, could be far better spent in reducing risk rather than mobility.</i>	<i>While we agree that Vision Zero is morally right, we are concerned that the practical effect of adopting it in the UK may be counter-productive. Zero road deaths are never likely to be achieved.</i>	<i>We should aim to reduce fatalities, but do not kid ourselves that we can achieve zero casualties. It simply won't ever happen.</i>	
<i>A significantly retrograde step with entirely the wrong ethos – and also biased – I don't see anyone considering such policies for accidents in the home which I believe have similar casualty rates or the even more problematic inadvertent deaths in hospitals. I would also like to comment on the process of this investigation – the "National" focus group meetings consisted of 5 in London, 5 in the South West and 7 north of the M62 – I would consider that a case of a few very regional focus groups with limited publicity arranged for the convenience of the facilitators – to offer any results as the result of a national enquiry would be a travesty.</i>	<i>Although VZ gives the country a licence to behave better and more safely on the roads, the concept of Zero is difficult to swallow. It comes across as too idealistic. The inevitability of risk associated with daily life undermines the positive aspects of VZ. I am not sure what the solution is other than getting the media 100 per cent on side. The message should be peaceful co-existence with the motor car.</i>	<i>Culturally it would be challenging to introduce this in the UK. It is a significant marketing job and it needs to be tailored to appeal to the Jeremy Clarksons of this world not the health and safety specialists.</i>	<i>Give us a break and address REAL issues and stop dreaming/scheming.</i>
<i>I wanted to particularly add the connection between speed and quality of life and health other than as a result of collisions and fatal crashes. Speed contributes to noise and disturbance to people's well being. Studies indicate a serious and insidious impact on people's health when exposed to continuous noise of traffic particularly at night time. The higher the speed the higher the decibels. Higher speeds</i>	<i>Road death should not be tolerated, but has it ever been accepted? – Accidents are not inevitable - they are primarily caused by driver error. People need to be made aware of this and then helped to change the way they drive. Any road safety message needs to be supported by an offer of help.</i>	<i>Good if it works, but it needs a 'Tzar' to pull together the multiple agencies working in the road safety areas. Many put 'talk' about what others should do, there are few that offer any preventative measures, but lots of 'affected' individuals who want to give out leaflets about their dead relatives, they are a turn off.</i>	<i>Great idea. Needs strong political backing and much publicity. Happy to discuss this further if you wish.</i>

contribute to climate change and threat to the life as we know it. Although this is not a "death on the road" it would be a denial of this threat to life caused by road vehicles if Vision Zero principles could not recognise this aspect when dealing with desirability of lower speeds.

Would be an important step in increasing the use of walking and cycling for many trips, thereby achieving the benefits of more social inclusion, reduced pollution, improved health and less dependence on fossil fuel supplies from volatile parts of the world.

I used to work in the NHS with people who had had head injuries as a result of RTAs so am aware of the vast costs and human misery involved.

It is desirable if done properly i.e. as a whole.

Great idea.

I think that the vision of a future where there are zero deaths or injuries on the UK's roads is a very desirable one but I do not think that the Swedish Vision Zero policy will get us there. In the first instance I think we should invest in a piece of thorough, independent research into the reasons why accidents occur on our roads and how injuries are sustained as a result of those accidents. I would support the introduction of a RTA investigation team to gather ground zero data immediately after all RTAs where injury or death has occurred. Without this basic understanding, how can we hope to effect positive change? What I think these investigations will show is that we require significant investment in vehicle design, road infrastructure and road user training, not further policy and enforcement.

I am very keen on such a positive vision for our transport.

Anything to raise awareness of road safety in the UK is a good thing.

Conclusion

In contrast to the UK focus groups consultations, which on the whole were more positive about the Vision Zero policy, the respondents to the questionnaire survey were more negative. However, the concerns about the adoption and implementation of such a policy were similar.

Although the questionnaire survey was mainly targeted at UK stakeholders the majority of the respondents (59 per cent) responded in an individual capacity while 6 per cent of the respondents stated no affiliation at all. A high number of responses to the questionnaire survey were very similar in tone and content with the use of similar terminology. It is therefore suspected that multiple entries might have occurred from groups of individuals who were more negative about Vision Zero. The on-line nature of the questionnaire survey meant that anyone could complete the survey and the survey is not in any way a representative sample of a given population. This should be taken into consideration when interpreting the results.

7 Costs and Benefits of Vision Zero

Introduction

This chapter presents a preliminary review of the costs and benefits associated with Vision Zero. Due to the scope of this study only indicative results are presented. There are a number of uncertainties associated with determining the costs and benefits of Vision Zero and a further in-depth analysis of this subject area will be required to gain a truly accurate account.

Valuing Life

Since Mishan's (1971) seminal paper entitled: *Evaluation of life and limb: a theoretical approach*, the valuation of life has been a key area of cost benefit analysis for road safety studies. In this paper Mishan (1971) presents and evaluates four methods of placing a monetary value on human life:

1. Discounting to the present the person's expected future earnings.
2. Calculating the present discounted value of the losses over time accruing to others only as a result of the death of person at age X.
3. A social method based on investment expenditures that occasionally increases or reduces the number of deaths. By analysing these values "*an implicit value of human life can be calculated*".
4. The insurance principle. This is predicated on the premium a man (sic) is willing to pay, and the probability of his being killed as a result of engaging in some specific activity.

Mishan finds difficulties with all of these methods and in a manner that anticipates the discussion around Vision Zero he finds the second method "cold-blooded". This method produces the result that elderly or retired members of society would confer a net gain to society if they could arrange to die in some way. Mishan quotes one policy implication "*the net output method suggests that society should not interfere with the death of a person whose net value is negative*".

Mishan is very clear that we can benefit from sound economic principles without falling into the trap of "dangerous" policy implications but this very early discussion does confirm the serious problems that surround any attempt to put a value on human life.

The True Costs of Road Transport

Maddison *et al.* (1996) re-casts the debate within a more socially neutral framework of externalities. What does road transport “cost” and who pays and is there a deficit or a surplus in the road transport “account”? The authors conclude that there is a large deficit. They calculate that the cost of externalities in UK road transport amount to £45.9–52.9 billion at a time in the early 1990s when the total taxation on road transport (fuel and vehicles) was £16.4 billion. The inference is that taxation “pays” for 31–36 per cent of the external cost and the remainder is uncovered costs which can be referred to as subsidy. The “accident” component in these calculations was £2.9–9.4 billion. These were made up of 6 components:

1. Own human values
2. Other human values
3. Medical and ambulance costs
4. Police and administrative costs
5. Material damage costs
6. Loss of output

This list does not include “grief and suffering” which itself raises the kind of ethical problems that Vision Zero was introduced to resolve. It is not clear that an economic rational exists for putting a monetary valuation on grief and suffering.

Maddison *et al.* (1996) present a summary of results from over 30 studies of the Value of a Statistical Life (VSOL). The studies use the marginal willingness to pay principle and the contingent valuation methodology. Contingent valuation studies produced a VOSL of £2.3 million and other studies an average value of £4.1 million.

There is considerable variation in VSOL around the world and these variations reflect the different methodologies used (see Table 7.1). The results show a low of US\$ 147,000 per life to a high of US \$30 million per life. Whilst it would be perfectly possible to plot all values, delete the outliers, cross-check the methodology and arrive at a plausible average value it is important to note that there is very little scientific reliability in any of these values.

Table 7.1: An annotated overview of studies with empirical estimates of the value of statistical life (*1000) in road safety¹

Authors	Country	Year		Type of Study ³	Number of estimates	Range of estimates in 1996 US dollars ⁴		
		Publication	Data			Single estimate	Lowest estimate	Highest estimate
Atkinson and Halvorsen	U.S.	1990	1986	RP	1	4,636		
Baker	U.S.	1973	1973 ²	RP	4		853	12,797
Beattie et al.	U.K.	1998	1996	SP	4		1,351	15,264
Blomquist	U.S.	1979	1978	RP	1	530		
Blomquist and Miller	U.S.	1992	1987	RP	3		1,481	5,730
Carthy et al.	U.K.	1999	1997	SP	4		1,655	2,154
Cohen	U.S.	1980	1974	RP	1	392		
Desaigues and Rabl	France	1995	1994	SP	6		876	20,377
Dreyfus and Viscusi	U.S.	1995	1987	RP	1	4,159		
Ghosh, Lees and Seal	U.K.	1975	1974	RP	1	838		
Hansen and Scuffham	New Zealand	1994	1994 ²	RP	2		690	718
Johannesson, Johannsson and O'Connor	Sweden	1996	1995	SP	2		3,130	6,156
Jondrow, Bowes and Levey	U.S.	1983	1983 ²	RP	1	2,645		
Jones-Lee, Hammerton and Abbott	U.K.	1983	1982	SP	8		585	9,998
Kidholm	Denmark	1995	1993	SP	3		781	1,163
Lanoie, Pedro and Latour	Canada	1995	1986	SP	2		1,756	3,142
Maier, Gerking and Weiss	Austria	1989	1989 ²	SP	6		1,531	4,226
McDaniels	U.S.	1992	1986	SP	2		8,507	30,838
Melinek	U.K.	1974	1974 ²	SP	1	776		
Miller and Guria	New Zealand	1991	1990	SP	5		1,094	1,749
Morrall	U.S.	1986	1984	RP	4		147	1,917
Persson and Cedervall	Sweden	1991	1987	SP	5		1,411	29,932
Persson et al.	Sweden	1995	1993	SP	2		3,514	4,012
Schwab Christe	Switzerland	1995	1993	SP	1	904		
Viscusi, Magat and Huber	U.S.	1991	1991 ²	SP	1	9,270		

¹ Most of the studies are also used in Elvik's (1995) literature review. Two additional studies are Beattie et al. (1998) and Carthy et al. (1999). Some traffic safety studies used by Elvik have been discarded the information needed for the meta-regression analysis was not available.

² Refers to the year of the study instead of the year of the data, due to missing information.

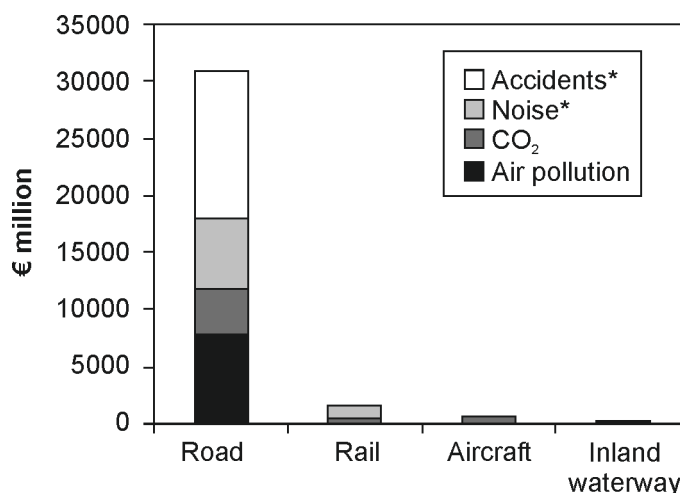
³ SP refers to a stated preference study, and RP to a revealed preference study.

⁴ GDP deflators (IMF, 1999) were used to calculate the VOSL in 1996 prices, and PPPs for 1996 (OECD, 1999) to translate local currencies into 1996 U.S. dollars.

Source: Blaeij et al. (2002)

Maddison *et al.* conclude that an average value for VSOL in the early 1990s was approximately £2 million and that this was “several times higher than the value used by the Department of Transport” (p. 129). Interestingly the authors also conclude “that the countries with the highest value for the VSOL often seem to enjoy the best traffic accident records” (p. 129). Sweden's VSOL quoted at 1993 prices was £2.102 million which is 2.2 times larger than the UK's £948,100. In their survey of 13 European countries Sweden has the highest VSOL. The inference is very clear. The higher the value put on human life, the greater will be the level of intervention and the more successful will be the range of efforts deployed to reduce fatalities and injuries.

Results from an EC (2003) study of externalities in energy and transport present some interesting results from Germany (see Figure 7.1). The accident costs are the largest component of road transport costs and road transport is far more damaging in its costs than all other modes of transport considered even when combined. Road transport in Germany accounted for over 30 billion Euros in external costs in 1998 and accidents accounted for 12 billion Euros or 40 per cent of these costs. The total external costs associated with transport in Germany (33 billion Euros) were 1.7 per cent of German GDP.



*Accidents and noise data only available for road and rail; airborne emissions include direct emissions and due to fuel and electricity production; air pollution from aircraft: emissions of cruising height not included.

Figure 7.1: Externalities in transport, Germany 1998

Source: EC (2003)

Reducing the size of these external costs has an important role to play in achieving a more competitive and dynamic economy in Germany and this provides a direct link between Vision Zero and wider social and economic issues.

At the European level the total external costs for transport accidents is reported as 148 billion ECU (the study pre-dates the Euro). This is 2.5 per cent of European GDP. Banfi *et al.* (1995) found that:

- 99 per cent of accidents costs are located in the road sector
- the human value represents 91 per cent of the external costs for a fatality and 96 per cent for a reported injury
- the average European relative accidents per unit of distance travelled are 32 ECU/1000pkm for cars, 9 ECU/1000 pkm for buses and 1.9 ECU/1000 pkm for trains
- the average accident costs for freight transport are 22 ECU/1000 pkm for lorries
- in the UK the cost of accidents for cars is 26 ECU/1000 pkm (below the European average) and 14 ECU/1000 pkm for buses (higher than the European average)

The European Transport Safety Council (ETSC) has also made estimates of the costs or value of a human life in a road crash. Its estimate was 4.5 million Euros:

“A fatality saved will be valued according to the improved “1 million Euro rule”. This rule was introduced by the European Commission in 1997. The monetary value includes not only the prevented costs of the fatality itself, but also of a proportional share of injuries and vehicle damage; the prevented immaterial damage from death and injury (pain, grief, suffering, etc) is excluded. The value of 1 million Euro is calculated on the basis of data for 1995. Two improvements introduced to the “1 million Euro rule”, the first, made by an ETSC working party, consisted in adding the damage of non-reported accidents and a value of prevented immaterial damage; the second constituted updating the value price of 2000, for the purpose of which a weighted correction of factor of 13.3 per cent was calculated on the basis of the consumer price index and the gross domestic product index. The first improvement led to a result of 3.6 million Euro per fatality saved, the second to an amount of 4.050 million Euro.”

Source: ETSC (2003)

Finding ways to incorporate these external costs into differential pricing policies was at the core of the EC’s policy on “Fair and efficient pricing in transport”. The EC (2003) estimated that the total external costs of transport in the EU were 250 billion ECU with accidents accounting for 24 billion or just under 10 per cent of the total. These numbers are different to the ones quoted in other studies but are still very large and have stimulated a public policy debate on how to reduce the size of the externalities for the benefit of all citizens. Vision Zero is one way of reducing the externalities associated with transport.

External Costs and Value of Life in the UK

In the UK the cost of death and injuries in road incidents include the following:

- lost economic output*;
- pain, grief and suffering*;
- material damage†;
- police and fire service costs†;
- insurance administration; and
- legal and court costs†

Note

Those impacts marked (†) are closely related to the number of accidents, while those marked (*) are related to the number of casualties. Therefore, numbers of accidents and numbers of casualties are the key quantitative indicators for the assessment of proposals. Combining these numbers with values for the prevention of casualties and accidents provides a monetary estimate of the accident benefits of proposals.

Source: DfT (2004a)

The methodological basis and calculation of values for fatalities and injuries is dealt with in “2003 valuation of the benefits of road accidents and casualties” (DfT, 2004b). The terminology and methodology used in the UK approach is very clear. The monetary estimates are “values for the prevention of road casualties and road accidents for use in the appraisal of road schemes ... these do

not represent actual costs incurred as the result of road accidents. They are the cost-benefit values and represent the benefits which would be obtained by prevention of road accidents” (paras 1 and 2).

The UK values are based on the “Willingness to Pay” approach:

“This approach encompasses all aspects of the valuation of casualties including the human costs and the direct economic costs i.e. an amount to reflect the pain, grief and suffering and the lost output and medical costs associated with road accident injuries” (para 3).

The values given in this report per casualty are presented in Tables 7.2, 7.3 and 7.4.

Table 7.2: Average value of prevention per casualty by severity and element of cost

Injury severity	Lost output	Medical and ambulance	Human costs	TOTAL £ June 2003
Fatal	451,110	770	860,380	1,312,260
Serious	17,380	10,530	119,550	147,460
Slight	1,840	780	8,750	11,370
Average, all casualties	9,060	1,910	31,880	42,850

Source: DfT (2004b)

Table 7.3: Average value of prevention per road casualty by class and road user¹

	£ June 2003
Pedestrian	65,790
Pedal cyclist	38,430
Bus and coach occupants	20,290
Goods vehicle occupants	41,260
Car and taxi occupants	34,800
Motorised two-wheeler riders and passengers	76,310
All motor vehicles users	37,300
Average, all road users	42,860

¹ Note that the variation in value between classes of road user is due to differences in proportions of fatal, serious and slight casualties among each class of road user.

Source: DfT (2004b)

Table 7.4: Average value of prevention per accident by severity and element of cost (2003)

Accident severity	Casualty related costs			Accident related costs			TOTAL £ June 2003
	Lost output	Medical and ambulance	Human costs	Police cost	Insurance and admin	Damage to property	
Fatal	495,240	5,410	981,460	1,530	240	9,030	1,492,910
Serious	20,250	12,130	137,680	210	150	4,110	174,530
Slight	2,430	1,030	11,540	50	90	2,410	17,550
All injury	12,310	2,590	43,290	90	100	2,740	61,120
Damage only	-	-	-	3	50	1,520	1,570

Source: DfT (2004b)

Based on these estimates: “the value of these 214,870 injury accidents is estimated to have been £13,083 million at 2003 prices and values. In addition there were 3.2 million damage-only accidents valued at a further £5,011 million. The total value of prevention of all road accidents in 2003 was therefore estimated to have been £18,049 million” (para 19).

Translated into Vision Zero terms and focusing only on fatalities and serious injuries the total value of prevention is £9,900 million. In the language of *Highway Economics Note 1* (para 2) (DfT, 2004b) these are “the benefits which would be obtained by prevention of road accidents”. They are the benefits, therefore, that would be obtained by the full implementation of Vision Zero. They are, moreover, annual benefits and in general terms can be expected to increase by 2-3 per cent per annum as Gross Domestic Product (GDP) increases (para 13).

These benefits are very large indeed and if we run the £9.9 billion figure forward for 10 years at a compound interest of 2.6 per cent per annum in line with guidance on GDP values then the total “value of prevention” over 10 years is £111 billion.

Cost-Benefit Analysis of Road Safety Measures

UK practice in the evaluation of highway proposals has established a methodology for including the benefits that can be attributed to accident reduction in the financial appraisal of these projects. A recent example is the submission by Lancashire County Council to the DfT for programme entry approval for the proposed Heysham-M6 link road (June 2005) (see Table 7.5). This shows significant financial benefits flowing from the scheme as a result of accident and injury reduction which are then fed into the overall case for the new road.

Table 7.5: Lancashire County Council entry approval to Department for Transport for the proposed Heysham-M6 link road

Significant benefits as a consequence of traffic diverting from single carriageways to dual carriage way and motorway	Number of accidents saved: 642 Casualty reductions: 20 Fatal; 178 Serious; 640 Slight.	£29.797 m saving 25 per cent of PVC
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Source: LCC (2005)

The Lancashire example shows that very significant savings can be attributed to road safety interventions. In this case a £29 million saving is made in one small area of one relatively small local authority. The total cost of the scheme (2005) is £118 million.

The ETSC (2003) has addressed the issue of benefit-cost ratios in road safety interventions and has compiled detailed information on four specific interventions:

1. Daytime running lights
2. Random breath testing
3. Audible seat belt reminder
4. Road safety engineering

Implementation of these interventions produces positive cost-benefit ratios (see Table 7.6).

Table 7.6: Cost-benefit ratios of ETSC interventions implemented throughout the EU

	Reduction in fatalities	Cost-benefit ratio	Cost in Euros	Benefits in Euros
Daytime Running lights	2800	1:4.4	23 billion over 12 years	101 billion over 12 years
Random breath testing	2000-2500	NS	150 million pa	8262 million
Audible seat belt reminder	NS	1:6	11.1 million	66 million
Road safety engineering	NS	1:10	NS	NS

NS= Not specified

Source ETSC (2003)

Measures, Interventions and Strategies to Reduce Casualties in the Road Environment

The Victoria Transport Policy Institute (VTPI) in Canada has provided a useful summary of potential interventions (see Figure 7.2). The range and diversity of measures is large and the majority of these have not been subjected to “before and after” studies to provide conclusions on the cost effectiveness and cost benefit analysis of the measures themselves.

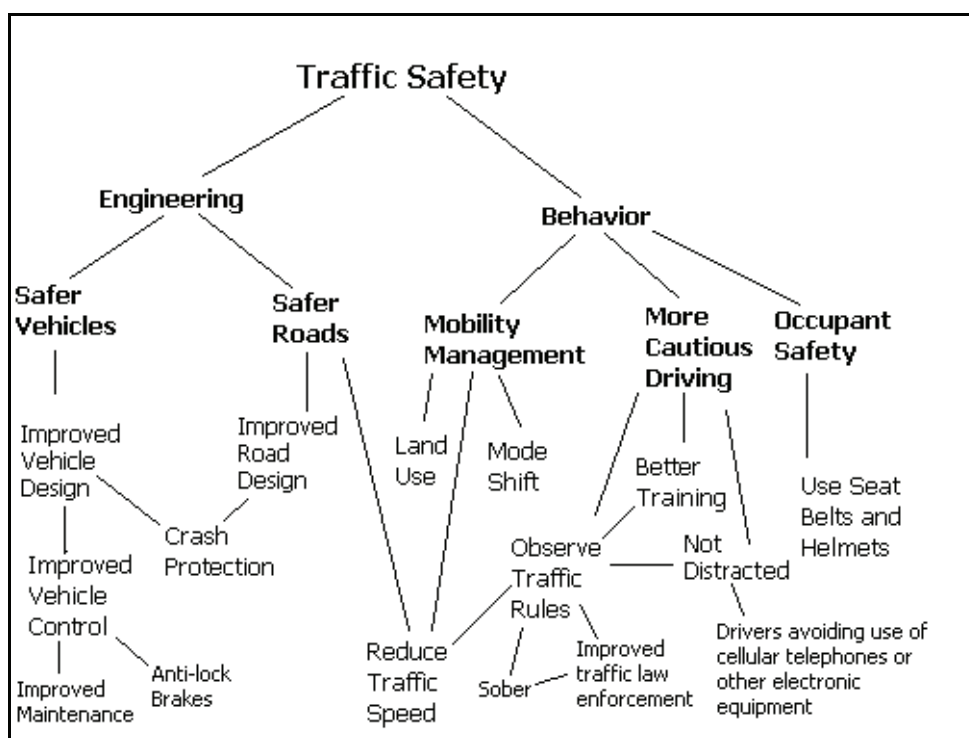


Figure 7.2: Relationships among various traffic safety strategies

Source: VTPI (2005)

The Swedish Vision Zero approach has been reviewed by researchers at the Norwegian Institute of Transport Economics (TØI) (2001) who identified a range of interventions as “fitting” the Vision Zero policy (see Box 7.1).

Box 7.1: Transport measures that have an effect

In the project, we selected six groups of measures. The choice was based on expected effect, type of measure, geographical fit, degree of conflict related to the measure and whether the measure was seen as easy or difficult to implement:

- measures in the road network; larger road projects and conflict-checking measures
measures to reduce speed in sparsely populated areas; speed limits, police controls, automatic speed controls (ATK)
- measures to reduce speed in residential areas specifically; physical measures (bumps), low speed zones (30 km/h)
- measures to reduce speed in urban areas in general; environmentally friendly streets, automatic speed control (ATK), intelligent speed adaptation (ISA)
- technical measures; seat belt reminders, alcolock devices.
- measures to improve driver behaviour through cooperation with employers – discussed under technical measures. All of these measures are shown to have a significant impact on traffic safety

Source: TØI (2001)

In an authoritative study of costs and benefits of road safety interventions the ECMT/OECD (2001) has summarised the cost benefit ratios of some commonly used interventions (see Table 7.7).

Table 7.7: Cost benefit ratios of road safety interventions

No.	Measure	Benefits (in mill. CHF/year)	Costs (in mill. CHF/year)	Cost-benefit ratio	Cost- benefit difference (in mill. CHF/year)
1.	Two-phase model	109	66	1.6	43
2a.	Random breathalyser tests for alcohol level without blood-alcohol test	227	12	19.0	215
2b.	Random breathalyser tests for alcohol level with blood-alcohol test	227	14	17.0	213
3.	Accident data recorder	49	83	0.6	- 34
4.	Speed warning devices	187	162	1.2	25
5.	Distance warning devices	113	157	0.7	- 44
6.	Development of thoroughfares	27	25	1.1	2
7.	Compulsory child restraint systems	5	5	1.1	0.5
8.	Higher level of control	26	5	5.5	22
9.	ADMAS point system	524	26	20.0	498
10.	Cycle and moped training courses	5	4	1.1	0.5
11.	Higher proportion of public transport	1 122	61	18.0	1 061
12.	Compulsory wearing of cycling helmets	40	9	4.7	32

Source: ECMT/OECD (2001)

The ECMT/OECD report (p. 95) also quotes UK government evidence on cost benefit analysis of road safety interventions:

“The Department has monitored the introduction of recent local safety schemes and this is one of the few areas where expenditure is underpinned by a considerable amount of knowledge about costs and benefits. Clear benefits can be shown, with the first-year rate of return of these schemes typically in excess of 150 per cent”

It further makes the point about the UK (page 97):

“The striking feature of local road safety projects is their very high cost-effectiveness. In a review published in 1997, the typical benefit from such projects was reported to be 150 per cent of the cost in the first year alone; even if such measures were effective for only 6/7 years, that implies average benefits that are 10 times the cost. These figures are very high compared with the returns from other uses of the resources.”

Discussion

Two points emerge from this review of cost benefit analysis and cost effectiveness studies in road safety. The first is that there are nearly always large benefits and they are considerably larger than any associated costs. The second is that there are still a number of measures and approaches that have yet to be deployed in the UK to further reduce casualties. Many of the 12 items in Table 7.7 remain to be implemented more generally in the UK. Two of the measures have a cost benefit ratio of less than 1 (the benefits are less than the costs) and are unlikely to be implemented.

Theoretically, Vision Zero brings with it a 10-year stream of benefits that can be valued at £111 billion. There are very few public policy areas and public policy interventions that can bring benefits of this magnitude.

This of course begs the question of whether or not Vision Zero can be achieved and this question is dealt with in Chapter 9. On the basis of Swedish experience with Vision Zero it is feasible that UK fatalities and serious injuries can be reduced by a significant degree and to a number much lower than the current level. The costs of doing this are very difficult to calculate and the literature we have reviewed in this section is not as comprehensive on the costs of road safety interventions as it could have been. The fact remains (see Table 7.7) that cost benefit ratios are very favourable in this area and the question that could be put is: “Given this very positive business case for intervention why do we not spend much more on road safety interventions and traffic law enforcement?”

WHO (2004) concluded in its review of global road traffic injury prevention with a very simple statement:

“Road traffic crashes are predictable and can be prevented” (p. 158)

This resonates very well with the results of our focus group discussions. Citizens are not at all convinced that the current level of danger and injury is “normal” or difficult to reduce. Rather, they think it is a function of inadequate attention to urban design, speed control and policing (amongst other things).

Vision Zero captures the public mood and the professional view of WHO. It is possible to do much better and it is possible to visualise a world with zero deaths and zero serious injuries. This section has shown that the economics works in the same direction. There is no especially difficult economic barrier to moving in the direction of Vision Zero.

Indeed the WHO report raises the possibility of a large number of co-benefits that have not been factored into the discussion so far:

“Vision Zero in Sweden and the sustainable safety programme in the Netherlands are examples of good practice in road safety. Such good practice can also have other benefits. It can encourage healthier lifestyles involving more walking and cycling and can reduce the noise and air pollution that result from motor vehicle traffic.” (p. 158)

There are also strong links with the UK discussion about sustainable communities and neighbourhood renewal and social exclusion. An urban environment characterised by large volumes of cars and lorries, difficulty crossing roads, noise, pollution and a constant fear of danger and a constant level of parental reluctance to allow children freedom to move around is not going to meet the policy aspirations underpinning the encouragement of new forms of urban living and healthy lifestyles. At the very least it will deter public use of public space and encourage more short car trips contrary to public health advice on the benefits of walking and cycling.

The contribution of Vision Zero to walking and cycling, reducing obesity and reducing inequalities in health and social exclusion is an important factor in this discussion. Its impact on costs and benefits is also large and more work is needed on the value to society of reducing the obesity epidemic (for example) and the role that Vision Zero can play in this.

8 Backcasting a Vision Zero Policy

Introduction

Backcasting is a well-established technique for charting a course to a “preferable future”. For the purposes of study we will assume that the preferable future is already clearly defined and is characterised by a commitment to a vision characterised by zero fatalities and serious injuries in road crashes.

The backcasting technique has been defined by Robinson (1996):

“The major distinguishing characteristic of backcasting analysis is a concern, not with what futures are likely to happen but with how desirable futures can be attained. It is thus explicitly normative, involving working backwards from a particular desirable future end-point to the present in order to determine the physical feasibility of that future and what policy measures would be required to reach that point”

The approach adopted by Robinson was adopted by the OECD (2002a) in its study of Environmentally Sustainable Transport (EST) and is the same approach adopted here. Robinson’s methodology was developed in the context of defining what a sustainable Canada would be like in 2030 and then working out how to get “there”:

“Based on research initiated by the Sustainable Society Project in 1988, Life in 2030 is unique in that it uses backcasting instead of forecasting to trace the path of Canada forty years into the future to the year 2030. Instead of predicting the most likely future based on current trends, the authors set out a desirable future and discuss the changes that would need to occur between 1990 and 2030 to arrive at this future vision. This vision, derived from ethical, political, and ecological principles, is not viewed as definitive, for the authors hope to inspire others to conceive of, and work towards, their own visions of a sustainable future” (Robinson, 1996).

This backcasting methodology was used in the OECD EST project (2002a):

“At the core of the design of the EST project is a method for policy development known as backcasting, a term to make a distinction from the forecasting methods that are more frequently used” (p.14).

“In backcasting goals are set and there is a working backwards – backcasting - to determine what must be done to reach them. Policy development based on forecasting results in attempting to change projected trends to avoid an undesirable future. Policy development based on backcasting results in doing what is necessary to achieve a desired future” (p.14).

“The approach is as simple as what was outlined ... you decide what future you want, you plan for it, you secure it and then you hold on to it” (p.16).

Figure 8.1 presents the OECD backcasting approach. The OECD has defined a desirable future (EST). This is different to Business as Usual (BAU) and attention must now be given to defining the “policy pathway” that connects where we are now in 2005 with where we want to be in the future e.g. 2030.

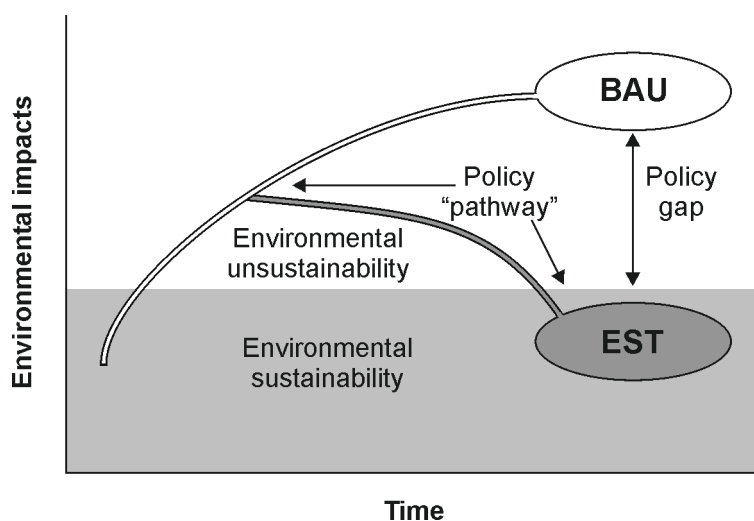


Figure 8.1: OECD backcasting approach

Source: OECD (2002b)

The policy development process can be illustrated diagrammatically (see Figure 8.2). The purpose of the exercise is to get from the present to the desirable future via a number of possible pathways (P1, P2, P3).

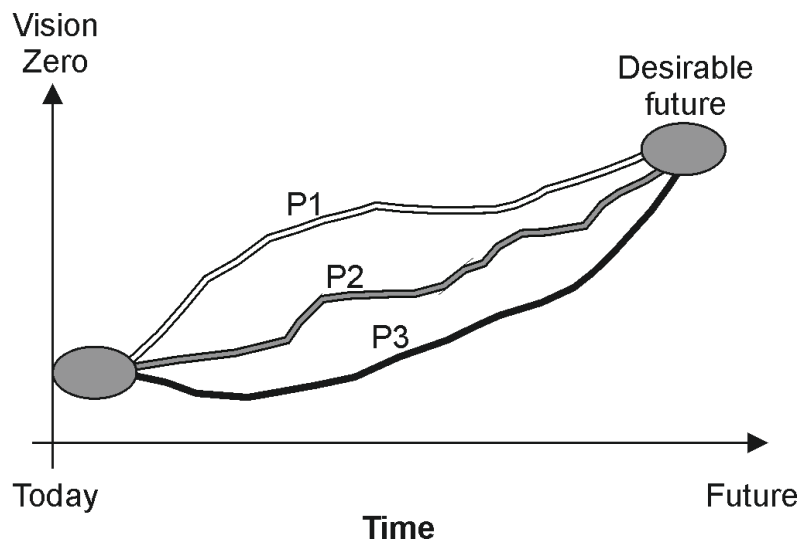


Figure 8.2: Backcasting and policy development

Development of Policy Pathways

For the purposes of this study we have adopted the same methodology as the OECD EST project. This is “structured brainstorming”. This was conducted internally within the SEI and produced the policy pathways presented in Figure 8.3.

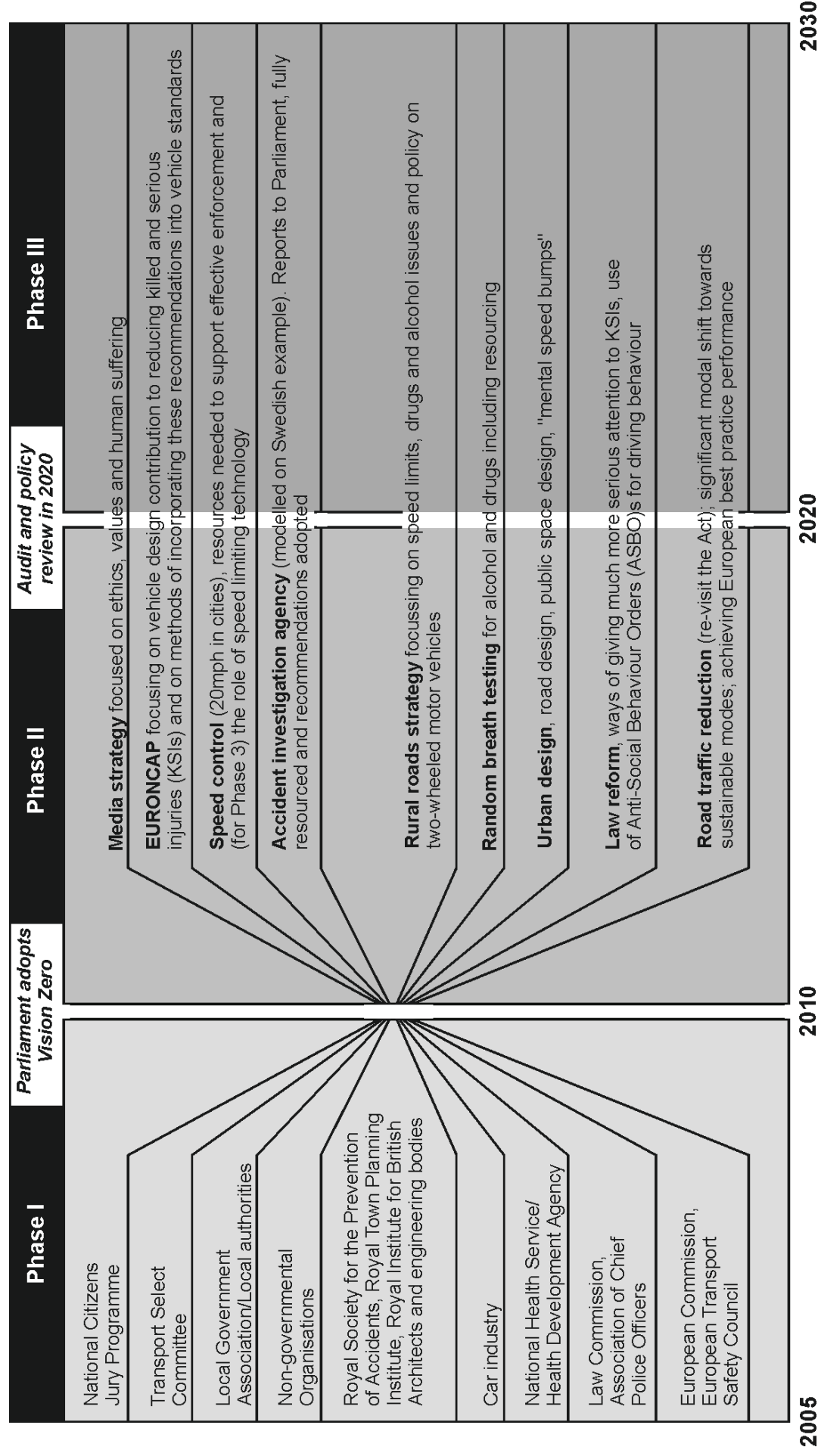


Figure 8.3: Policy pathways for Vision Zero

The pathway that has been identified as leading to the full implementation of Vision Zero in the UK is split into two parts. The first part (up to 2010) consists of structured consultations and consensus building across the main dimensions of government and civil society. It is based on the WHO (2004) view of the need to involve all these dimensions if we are to create an effective road safety policy (see Figure 8.4). The pathway is also influenced by the WHO (2004) summary of recommendations presented in Box 8.1.

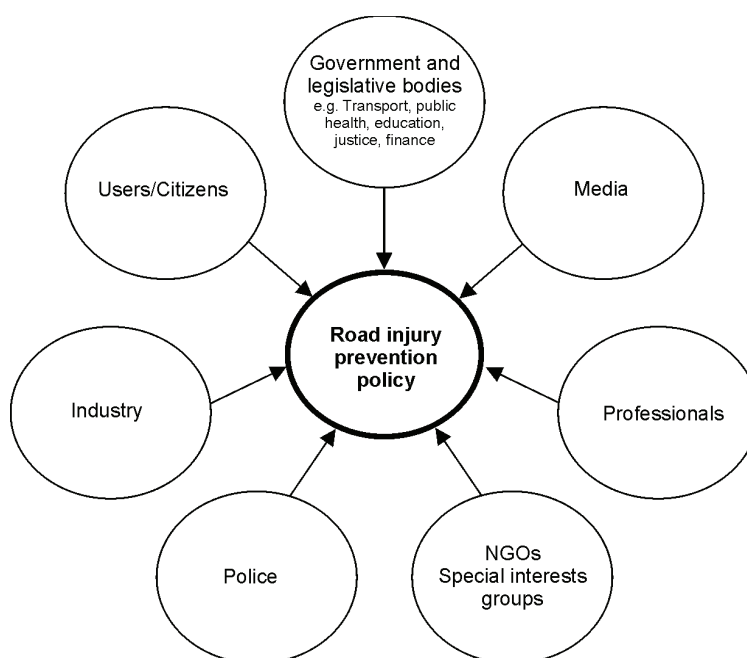


Figure 8.4: Key organisations influencing road safety policy

Source: WHO (2004)

Box 8.1: Action for safety

Role of governments

- Make road safety a political priority
- Appoint a lead agency for road safety, give it adequate resources, and make it publicly accountable.
- Develop a multidisciplinary approach to road safety
- Set appropriate road safety targets and establish national road safety plans to achieve them.
- Support the creation of safety advocacy groups.
- Create budgets for road safety and increase investment in demonstrably effective road safety activities.
- Enact and enforce legislation requiring the use of seat belts and child restraints, and the wearing of motorcycle helmets and bicycle helmets.
- Enact and enforce legislation to prevent alcohol-impaired driving.
- Set and enforce appropriate speed limits.
- Set and enforce strong and uniform vehicle safety standards
- Ensure that road safety considerations are embedded in environmental and other assessments for new projects and in the evaluation of transport policies and plans.
- Establish data collection systems designed to collect and analyse data and use the data to improve safety.
- Set appropriate design standards for roads and promote safety for all.
- Manage infrastructure to promote safety for all.
- Provide efficient, safe and affordable public transport services.
- Encourage walking and the use of bicycles.

Role of public health

- Include road safety in health promotion and disease prevention activities
- Set goals for the elimination of unacceptable health issues arising from road traffic crashes.
- Support research on risk factors and on the development, implementation, monitoring and evaluation of effective interventions, including improved care.
- Promote capacity building in all areas of road safety and the management of survivors of road traffic crashes.
- Translate effective science-based information into policies and practices that protect vehicle occupants and vulnerable road users.
- Strengthen pre-hospital and hospital care as well as rehabilitation services for trauma victims.
- Develop trauma care skills of medical personnel at the primary, district and tertiary health care levels.

- Promote the further integration of health and safety concerns into transport policies and develop methods to facilitate this, such as integrated assessments.
- Campaign for greater attention to road safety, based on the known health impacts and costs.

Role of vehicle manufacturers

- Ensure that all motor vehicles meet safety standards set for high income countries – regardless of where the vehicles are made, sold or used – including the provision of seat belts and other basic equipment
- Begin manufacturing vehicles with safer vehicle fronts, so as to reduce injury to vulnerable road users
- Continue to improve vehicle safety by ongoing research and development
- Advertise and market vehicles responsibly by emphasizing safety.

Role of donors

- Highlight the improvement of road safety outcomes as a global development priority.
- Include road safety components in grants for health, transport environmental and educational programmes
- Promote the design of safe infrastructure
- Support research, programmes and policies on road safety in low-income and middle-income countries
- Make funding for transport infrastructure projects conditional on the completion of a safety audit and any follow-up required.
- Set up mechanisms to fund the sharing of knowledge and the promotion of road safety in developing countries
- Facilitate safety management capacity building at regional and nationals.

Role of communities, civil society groups and individuals

- Encourage governments to make the roads safe
- Identify local safety problems
- Help plan safe and efficient transport systems that accommodate drivers as well as vulnerable road users, such as bicyclists and pedestrians
- Demand the provision of safety features, such as seat belts in cars
- Encourage enforcement of traffic safety laws and regulations and campaign for firm and swift punishment for traffic offenders.
- Behave responsibly by:
 - abiding by the speed limit on roads;
 - always wear a seat belt and properly restraining children, even on short trips;
 - wearing a crash helmet when riding a two-wheeler.

Source: WHO (2004)

Phase I

Phase I is the preparatory phase leading to a suggested parliamentary decision or Act (along the same lines as the Swedish Parliament decision in 1997) and consists of:

- Citizen juries to establish an unbiased and full citizen perspective on what is required from a road safety policy and what citizens think of Vision Zero
- A transport select committee investigation
- A local government association viewpoint backed up by discussions in every local authority
- The full involvement of NGOs from all sides including all those concerned with road safety, speed reduction and road traffic danger
- The involvement of professional bodies especially road safety officers, planners, engineers and architects
- The car industry
- The NHS and the Health Development Agency and public health specialists
- The Law Commission, association of chief police officers and serving police officers.

The objective of this preparatory phase is to produce a summary of the main issues involved in pursuing a Vision Zero policy and to establish the views of all relevant stakeholder groups. The Citizens jury dimension is particularly important because it allows a more considered view to emerge than the focus groups in this study. Focus groups took one hour whereas a citizen's jury exercise will involve up to 20 people in 30-50 hours of discussion. This provides space for a much more considered view to emerge and for this view to be based on questioning, hearing expert evidence and discussion (Wakeford, 2002).

The preparatory phase ends with parliamentary approval for the adoption of Vision Zero as the guiding principle of UK road safety policy.

Phase II

Phase II follows immediately and is scheduled to run until 2020 and consists of nine dimensions:

1. **A media strategy.** A media strategy that is focused on ethics, values, the harm done by deaths and injuries to those associated with the tragedy (especially friends and family), the human cost, the economic cost and the case for adopting an ethical policy on this issue.
2. **EURONCAP.** Full legal incorporation within an EU legislative framework of vehicle design standards to minimise and eliminate killed or seriously injured (KSIs) in road crashes through vehicle design paying particular attention to those outside the car and vulnerable road users

3. **Speed Control.** WHO (2004) identified speed as a crucial variable in reducing deaths and injuries (see Figure 8.5). There is persuasive international evidence that a general adoption of 20 mph speed limits in urban areas would have a significant impact on reducing deaths and injuries and that this should be associated with enough resources and direction to ensure full and fair enforcement. There is also a case for speed limiters and other automatic speed devices.

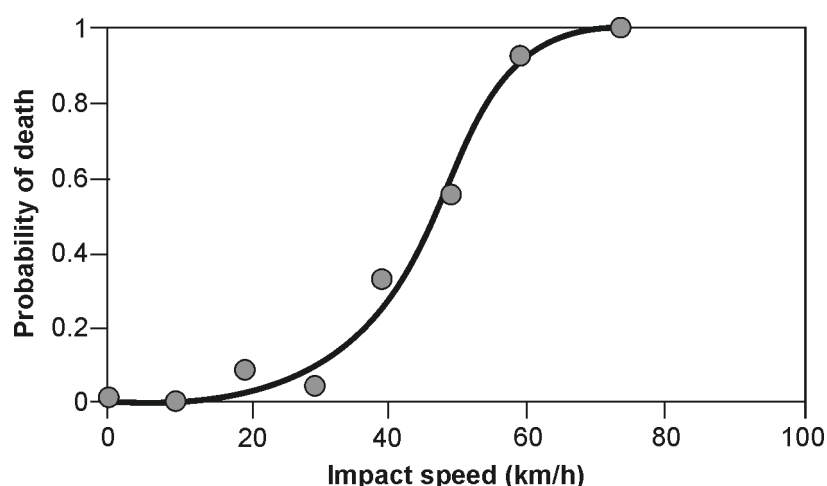


Figure 8.5: Pedestrian fatality risk as a function of the impact speed of a car

Source: WHO (2004)

4. **Accident investigation and reporting.** The Swedish experience borrows concepts from aviation and has emphasised the importance of a new agency (separate from policing and from local authorities) that can investigate all KSIs. Each investigation would be associated with a report and with recommendations that would be designed to prevent a recurrence. These would be both generic (e.g. road traffic law, vehicle design) and specific to that situation (e.g. road design).
5. **Rural road safety strategy.** Much traffic growth is occurring on rural roads. Patterns of travel especially in SE England involve the use of rural roads. Speeds tend to be higher on rural roads. There is a need for a specific rural road strategy involving education, design and speed limits and enforcement. This should also take into account motorbike KSIs on rural roads.
6. **Random breath tests.** Both the European Transport Safety Council and the WHO recommend random breath tests as an effective method of reducing KSIs. This is a key part of Vision Zero.
7. **Urban design, road design.** There is a need to re-think the practice of architecture, planning and engineering. Recent work on “mental speed bumps” recommending the ending of “actual speed bumps” and the removal of roadside clutter has much to recommend it (Engwicht, 2005). Based on Dutch and Danish traffic engineering practice, Engwicht, identifies the street as a public realm and the arena for civilised human interaction.

8. **Law Reform.** There is a need to review current road traffic law especially in the way it deals with deaths and serious injuries on the roads. There is widespread criticism of the way in which the law deals with these incidents and whether or not as the law stands it acts as a deterrent. This requires a fundamental review covering traditional areas of legal principle e.g. strict liability, intention, the need to provide a deterrent, the need to be proportionate and the need to take into account human rights legislation especially regarding Article 8 (Right to respect for private and family life).
9. **Public transport, cycling and walking.** In spite of much UK governmental activity at the policy level, UK cities still perform badly on the modal share held by public transport, walking and cycling compared to European cities (see Table 8.1). Support and encouragement of these sustainable modes of transport is specifically mentioned in the WHO (2004) report.

Table 8.1: Modal split in selected European cities (2000)*

City	Foot and Cycle (%)	Public Transport (%)	Car (%)	Number of Inhabitants
Amsterdam (NL)	47	16	34	718,000
Groningen (NL)	58	6	36	170,000
Delft (NL)	49	7	40	93,000
Copenhagen (DK)	47	20	33	562,000
Arhus (DK)	32	15	51	280,000
Odense (DK)	34	8	57	1,983,000
Barcelona (ES)	32	39	29	1,643,000
L'Hospitalet (ES)	35	36	28	273,000
Mataro (ES)	48	8	43	102,000
Vitoria (ES)	66	16	17	215,000
Brussels (BE)	10	26	54	952,000
Gent (BE)	17	17	56	226,000
Brujas (BE)	27	11	53	116,000

* No comparable data is available for UK cities

Source: Thorsen (2000)

10. **Promotion of sustainable transport** is an important component of Vision Zero which should aim to achieve European best practice standards, which in its turn reduces car use (especially for short journeys) and reduces the volume of traffic which reduces exposure to danger. A renewed emphasis on these alternatives to the car would greatly assist in reducing KSIs, reducing greenhouse gases and creating civilised urban areas.

Phase III

Phase III will involve a major review of progress and appropriate modification of particular measures and will then continue until 2030.

Discussion

Backcasting is a “can do-will do” tool. It replaces the traditional emphasis on forecasting, mitigation and trying to influence trends with a determined effort to deliver a new paradigm and a new future. More mundanely but equally importantly it offers new insights into synergy and the potential for mutually reinforcing and multiplicative gains. Robinson (1990) makes the point that backcasting does not produce one “perfect” path from a given starting point to a “desirable future”. The results of a backcasting exercise must be internally consistent and cover the main policy strands that can be identified as necessary to connect starting and end points but this does not mean they are the only possible policy connections. There may be others. This is also the case here. The path we have produced is based on the “structured brain storming” approach in OECD (2002). The structure was supplied by three clear strands of evidence:

- WHO report on world road traffic injury prevention (WHO, 2004)
- Focus groups
- Swedish experience with Vision Zero.

The backcasting exercise assumes that there is a clearly defined “*desirable future*” and in the case of this study that is represented by Vision Zero for road traffic fatalities. It is important, however, to note that this is still a scenario. The existence of a road safety policy known as Vision Zero and of a policy pathway to maximise the probability of delivering that policy does not imply that the policy is necessarily the “right” one or the “best” one to deliver road safety improvements. Equally, the powerful message of backcasting especially in sustainable development (Robinson, 1990) and in transport (OECD, 2002) is that a clearly defined outcome can be achieved through careful selection of policy measures designed to produce the desirable result. This chimes perfectly with the WHO conclusion: “*Road traffic crashes are predictable and can be prevented*” (WHO, 2004, p. 158).

The policy pathway described in this backcasting exercise requires further analysis to ensure that it is sufficiently robust to deliver the Vision Zero scenario. This applies across all backcasting exercises including the OECD example. The areas requiring further analysis include:

- A policy consistency analysis to demonstrate whether or not Vision Zero policies might conflict with other policies and vice versa.

- A speed limit of 20mph in urban areas might well conflict with air quality policies and greenhouse gas reduction policies depending on the specific emission performance of vehicles at that speed.
- A “mental speed bump” approach which would clear away traditional speed control bumps could produce a smoother driving profile and reduced emissions (less acceleration and deceleration).

An audit of current policies or policies in development would go some way to delivering the policies listed here as Vision Zero policies. Many Vision Zero policies have already been put in place in the UK. The debate over speed cameras illustrates that speed control has not been neglected. It could be argued that the UK is already on a pathway to deliver Vision Zero but without the “branding”. An audit would reveal exactly what measures have already been taken, which are currently being developed and which have yet to be developed.

In Figure 8.3 the horizontal lines are parallel and simply show policy areas that should be developed and implemented. In a “real” policy environment there would be more interweaving of these lines e.g. the media strategy should run for 6 months before the 20mph speed limit in urban areas is introduced. The interaction and timing between individual measures and packages of measures requires intensive discussion with the agencies and bodies responsible for these areas of expertise and this in turn would produce a more “real time” set of lines in a critical path diagram.

A Vision Zero road safety policy requires a much improved level of performance in public transport, walking and cycling. This will reduce noise and pollution and contribute to the delivery of other policy objectives in noise reduction and air quality management. It will also improve the health of the population (e.g. through reduced obesity). It will reduce NHS costs through reduced accidents and injuries, reduce greenhouse gases through the modal shift and reduce engineering costs through the removal of “humps and bumps”. It improves the sustainability of cities and delivers sustainable community and neighbourhood renewal objectives. It could act as a policy integrating package.

9 Vision Zero Risk Analysis

This concluding chapter evaluates the risks associated with the adoption of a Vision Zero policy in the UK. It is important to note that this chapter is not designed to arrive at a conclusion about whether or not the UK should adopt Vision Zero. That decision is for the normal political process and for Parliament and we have not set out to arrive at a “balanced view” on whether or not UK road safety policy should be steered in this direction.

The risk assessment exercise falls into two sections. In the first section we undertake a conventional SWOT analysis (Strengths, Weaknesses, Opportunities and Threats) which is evidence-based in that it utilises the results of this study. The second section is a regulatory impact assessment based on the EC’s methodology used to scrutinise proposals for new actions, laws or regulations.³

SWOT Analysis

Strengths

- System wide re-invigoration of all stakeholders and actors to achieve greater levels of reduction in KSIs.
- Replacement of an economic logic (CBA) with a strong human value and ethical logic that resonates with clearly expressed citizen views and value systems.
- Greater coherence between all parties in the road safety debate.
- A hugely popular (focus group evidence) recognition that deaths and injuries on the roads are not acceptable and are regarded as avoidable.
- Saving £111 billion over 10 years (to be adjusted by the actual degree of reduction of KSIs).

Weaknesses

- A view amongst some professionals that it is unrealistic and unattainable.
- A need to explain what is meant by a “vision” and what will be done to deal with departures from the Vision Zero target (i.e. explaining why it may not be reached).
- Some budgetary uncertainties around the requirements of a Vision Zero policy that are aimed at road engineering (e.g. central barriers).

Opportunities

- The harvesting of synergy in that Vision Zero can bring about reductions in greenhouse gases, noise, pollution and can at the same time reinforce the sustainability and attractiveness of urban communities and neighbourhoods.
- The reduction in greenhouse gases can be quantified and can be valued using Treasury values. The value of a tonne of carbon has been used by the Treasury and DfT (2003) to evaluate aviation policy. A value of £70 per tonne was used for the year 2000 and £100 per tonne in 2030. This would create a stream of benefits additional to the £111 billion already identified.
- The reduction in noise will assist in achieving EU noise legislation requirements. Currently there is very little development of policy to address noise regulation requirements.
- The realisation of large scale reductions in demand for and pressure on NHS accident and emergency facilities. This in its turn can release thousands of hours of operating theatre and medical staff time. This will be of increasing importance as medical science saves life but creates long-term dependency on medical care at a cost that is greater than the value of a life.
- A changed road environment with much greater public confidence in safety and security which will increase walking and cycling levels and reduce obesity. Pedestrians and cyclists frequently identify “road danger” as the reason why they do not walk and cycle or prevent their children from doing so. A step-change in safety and security has the potential to liberate these modes and (for example) remove the 21 per cent of traffic which is school run related in the morning peak in school term time. This will contribute to the reduction of congestion.
- A clear policy route to implement World Health Organisation recommendations which state that RTAs are predictable and preventable.
- The availability of a mechanism that can be translated to regional and local levels of government and effectively decentralised/devolved. This opens up new possibilities e.g. the German system where Munich (for example) will always “out-do” Duesseldorf or Hamburg to show that Munich is “the best”. Regional and city competitiveness can be very useful in generating innovation. What could Manchester “do” to achieve Vision Zero that would “out-do” Liverpool? Could northwest of England do much better than southeast of England?

³ For a full description of EU regulatory impact assessment with specific examples in different areas of regulation see: http://europa.eu.int/comm/secretariat_general/impact/practice.htm accessed in February 2006

Threats

- The possibility that it will be held to ridicule as “silly” and create a storm of protest.
- The possibility that it simply might not “work” and the possibility of political backlash as ministers explain why such a high profile policy did not work.
- The possibility that the detail (based on Swedish evidence) might attract strong opposition e.g. the Swedish emphasis on compulsory bicycle helmet wearing and the removal of road obstacles (trees and rocks). It should be noted, however, that Swedish preferences on matters of detail need not be translated into UK policy.

Impact Assessment

On 15 June 2005 the EC published guidelines for regulatory Impact Assessment (IA) (EC, 2005). The guidelines identified six key analytical steps for IA which should be undertaken with stakeholder consultation and expert advice throughout the process:

1. Identify the problem
2. Define the objectives
3. Develop main policy options
4. Analyse impacts
5. Compare options
6. Outline policy monitoring and evaluation

The EC recommends that an IA be undertaken for policy, budgetary and legislative proposals. It is therefore appropriate to apply this IA methodology to Vision Zero.

Identify the problem

The problem addressed by Vision Zero is the number of deaths and serious injuries caused by ordinary everyday use of the roads. Embedded in this problem is the growing realisation that the road environment in terms of systems control and management is out of line with other systems. In very general terms society as a whole expects that there will be zero deaths and serious injuries in the workplace and also in aviation. Recent debates with regard to rail safety indicate that there are similar

expectations in this area of transport. It can be argued, therefore, that Vision Zero is a reasonable expectation for the road sector.

In the case of Vision Zero the key players and affected populations have already been identified in Figure 8.4. There is also consensus around the causes of deaths and injuries in the road environment and evidence has been reviewed in this report to show the importance of speed limitation, road engineering and driver training. The problem is clearly a national problem requiring national action and at the moment is not interpreted as an EU-wide issue.

Define objectives

The objectives are very clearly defined by a Vision Zero approach to road safety. The objective is to reduce deaths and serious injuries to zero by a future date (e.g. 2030). This would then be associated with interim dates e.g. a 50 per cent reduction in KSIs by 2007. The UK is already well advanced in target setting and has achieved levels of reduction that compare well with Sweden. Indeed UK progress with reductions is at least as good as or better than Sweden. Vision Zero (in Sweden) is seen as a broad societal objective that can go beyond target setting to create an intensely supportive environment for all those who move around.

The requirement to explore consistency with other policies is demanding. Vision Zero is consistent with policies to:

- reduce deaths and injuries on the roads
- reduce the need to travel (e.g. PPG13)
- reduce greenhouse gases and noise
- create liveable and sustainable communities through neighbourhood renewal strategies and policies e.g. to address the problem of social class differentials: “Children from the poorest social classes are five times more likely to die in road accidents.”⁴
- improve public health e.g. the public health white paper and its emphasis on reducing obesity and increasing levels of physical activity⁵

Vision Zero requires an economic impact assessment to explore in more detail than is possible in this project report its wider economic implications. A preliminary assessment would indicate that the economic consequences are either neutral or positive. This is based on the information already reviewed in the cost-benefit section on externalities and the costs of deaths and injuries. There is a substantial gain to society as a whole from reducing deaths and injuries. The impacts on mobility and

⁴ Source: <http://senet.lsc.gov.uk/guide2/neighbourhoodrenewal/index.cfm#policies> accessed in February 2006

⁵ See: http://www.dh.gov.uk/PublicationsAndStatistics/Publications/PublicationsPolicyAndGuidance/PublicationsPAmpGBrowsableDocument/fs/en?CONTENT_ID=4095034&chk=PQUHcu accessed in February 2006

accessibility are likely to be positive in the sense that Vision Zero sits very well within the policy framework already established by PPG13. This framework emphasises the importance of “joined-up” land use and transport planning which can be further exploited to reduce unnecessary car trips and, hence, reduce exposure to risk. A modal shift to walking, cycling and public transport can be expected to have substantial positive impact through the reduction of congestion and reduction of economic losses associated with delay. More discussion is required with stakeholders on all these points but there is no *a priori* reason to conclude that Vision Zero impacts negatively on economic policy objectives.

Develop main policy options

The policy option is Vision Zero. In Sweden Vision Zero has been implemented through very specific detailed measures that are aimed at speed, reducing risk, re-engineering the road environment and investigating deaths in great detail.

Analyse impacts

Much of this would translate to the UK in very much the same form but this needs more careful investigation to:

- identify (direct and indirect) environmental, economic and social impacts as they occur;
- identify who is affected (including those outside the UK) and in what way;
- assess the impacts in qualitative, quantitative and monetary terms where possible and appropriate;
- consider the risk and uncertainties in the policy choices, including obstacles to compliance (EC, 2005).

We have indicated that Vision Zero provides positive outcomes and a high level of consistency with a wide range of social, environmental and economic policy objectives.

Compare policy options

In the case of Vision Zero, this stage in the impact assessment is not appropriate. This is because this project is entirely concerned with Vision Zero and not with other policy options. It would, of course, be desirable if not essential, that the UK government should carefully define and explore other policy options as part of a wider governmental review of road safety policy.

Outline policy monitoring and evaluation

This stage is crucial to Vision Zero and would involve some imaginative monitoring and evaluation procedures. The core indicator, is, of course KSIs but monitoring should be sensitive to a long-standing discussion about RTA statistics. These discussions have identified areas of special importance and concern:

- The degree to which accidents and injuries are under reported and the discrepancies between police data and hospital data. These discrepancies are likely to be small for fatalities but data should be collected and collated from NHS sources for serious injuries.
- Definitional problems. What is a serious injury? This would have to be reviewed.
- Confounding factors. Since the publication of *One False Move* in 1990 by Hillman, Adams and Whitelegg there has been a debate about levels of exposure to risk. If large numbers of road users (e.g. children) stop walking and cycling, because, for example they are driven to school, friends and social events then RTA statistics will show a reduced level of KSIs which is not related to any effective intervention aimed at improving safety or reducing danger. Increased danger on the roads can deter use of the roads (e.g. elderly people not going out). This can produce a perverse result showing that very dangerous roads are very safe. It will be necessary to capture these confounding effects and measure exposure and use of public space. It will also be necessary to evaluate public responses to a Vision Zero world.
- UK RIA requires a summary of costs and benefits (see Table 9.1).

Whilst it is not possible in this study to carry out a full assessment of all costs and benefits associated with Vision Zero it is nevertheless useful to do this in an “indicative” manner. This is intended to flag up the issues and areas which require further analysis. Table 9.1 presents a summary of the costs of benefits of Vision Zero. Option 1 is the full implementation of Vision Zero. There are no other options.

Table 9.1: Summary costs and benefits of Vision Zero

Option	Total benefit per annum: economic, environmental, social	Total cost per annum: - economic, environmental, social - policy and administrative
1	£11 billion from fatality and injury reduction Unknown amount from greenhouse gas reductions (based on Treasury estimates of value of one tonne of carbon) Unknown savings from reduced congestion brought about as a result of modal transfer and increases in walking, cycling and public transport Unknown savings from reductions in obesity Unknown social benefits to the elderly from higher levels of physical activity, mobility, social interaction and independence	No additional costs associated with economic, environmental and social dimensions No reason why there should be any increase in administrative costs Unknown costs associated with additional policing resources to deal with speeding, substance abuse and anti-social driving behaviour Unknown additional costs associated with engineering works.

Source: Cabinet Office (2005)

Conclusion

The Swedish Vision Zero road safety policy has attracted worldwide attention and has been incorporated in the WHO 2004 report on road safety. In this study we have found large scale public support for the concept in the focus groups and a considerable amount of scepticism in the professional community. The Swedish interviewees were very confident that adopting Vision Zero had reinvigorated road safety intervention and stimulated a high level of co-ordination and common purpose in all the professional stakeholders. This does not mean to say that it is supported by all stakeholders. There is scepticism in Sweden just as there is in the UK.

The detailed analysis of Vision Zero has revealed that there are considerable economic gains to be had from such a policy innovation. There are a number of detailed policies and measures that can be implemented to maximise the achievability of Vision Zero with very few risks.

Vision Zero also provides a significant degree of policy synergy and forms natural links with policies already adopted by government in areas that include sustainable communities, public health, modal transfer, best value and greenhouse gas reduction.

The core logic underpinning Vision Zero is not susceptible to scientific analysis or logical rigour. The Swedish decision to abandon a materialistic, cost benefit approach to road safety and to ground road

safety in an ethical and human centred value system was intensely political. The decision to align road safety with the tacit Vision Zero that already applies to aviation and to health and safety at work was partly logical and partly political. Sweden decided that just as there should be an expectation of no deaths in aircraft accidents and no deaths at the work place so by logical extension there should be no deaths on the roads. The logic is attractive (and meets with public approval) but the decision on equivalence is political.

The WHO has captured the policy importance and significance of this subject in its 2004 report:

"Road traffic crashes are predictable and therefore preventable ... the time to act is now. Road users everywhere deserve better and safer road travel" (page 164)

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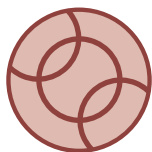
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SEI is an independent, international research institute specializing in sustainable development and environment issues. It works at local, national, regional and global policy levels. The SEI research programmes aim to clarify the requirements, strategies and policies for a transition to sustainability. These goals are linked to the principles advocated in Agenda 21 and the Conventions such as Climate Change, Ozone Layer Protection and Biological Diversity. SEI along with its predecessor, the Beijer Institute, has been engaged in major environment and development issues for a quarter of a century.

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