Integration of Road Safety in Other Policy Areas: Synergies and Conflicts

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April 2013

Summary Integration of Road Safety in Other Policy Areas: Synergies and Conflicts

Integration of road safety into other policy areas can be understood as systematically taking the issue and mainstreaming it in other related fields of policy. A useful tool towards reaching this goal is the experience of integrating environment into all policy areas which was undertaken a decade ago following a new requirement of the European Treaty of Amsterdam. This paper argues that useful synergies can be created and achieved and certain objectives can be met through integrating safety into other areas, in line with the *Safe System* approach. For integration to achieve these benefits one needs to identify potential conflicts and look at ways to overcome them. This paper aims to look at what integration means in relation to several policy areas. It will examine three key policy areas in more detail: employment, environment and health. These topics were chosen as they arguably have the strongest links to road safety policy. The paper will then also cover a longer list of other issues which represent a second tier of policy areas where there are clear links with road safety. These include trade and procurement, liveable cities, transport accessibility and equity, development co-operation, policing and tourism.

Integration of road safety into other policy areas is also included in a number of EU road safety policy frameworks. It is one of the three main principles of the European Commission's Road Safety Policy Orientations 2011-2020. In 2010 Transport Ministers also included a strong commitment to integration in their Road Safety Council Conclusions. The European Parliament's report on road safety adopted in 2011 also supported integration adding that it called for "an exceptionally high degree of coordination". There are some examples of structures to manage and carry through integration at a national level, such as the Inter-Ministerial Committee in France. At a European level, the paper suggests the idea of setting up a similar cross-cutting task force who would co-ordinate road safety policy integration across different policy areas.

The synergies and possible resulting tensions of road safety policy integration are also discussed. On the positive side these include the added strength in achieving joint objectives, pooling of resources and greater efficiency. However the paper also highlights that integration can highlight conflicts where reaching one objective such as road safety, may have tensions for another. On balance though, it is argued that through looking at possible synergies and also potential conflicts the end result should emerge stronger for all involved.

Work Related Road Safety

Improving work related road safety (WRRS) will also contribute to improving road safety as a whole in Europe: a large number of the 30,100 lives lost on European roads in 2011, were related to driving for work or commuting. Road traffic collisions accounted for nearly 40% of incidents at work resulting in death. This is one of the strongest areas for explaining synergies between road safety and another policy area. The paper sets out the EU policy background and then presents the business case, the most convincing argument for integration of road safety into employment policy. Workplace health promotion (WHP) is another related issue of paramount importance; it taps into matters such as lifestyle, work/life balance, and general wellbeing and is likely to cover a large number of driver-related risk factors such as for example fatigue and consumption of alcohol. Excessive and inappropriate speed is the number one road safety problem and also needs to be tackled from the 'driving for work' perspective. Employers can look at changing journey planning, just-in-time management and applying the use of telematics to dramatically reduce the speed risk factor.

Environment

A number of road safety benefits can be yielded by addressing environmental topics. At the European Level the arenas of transport and environmental policy are clearly linked and much work has been carried out over the last decade to ensure an integrated approach towards these two policy areas. However the opportunity exists for further integration to capture the safety benefits of for example by combining trips or promoting safer public transport. This paper looks at a number of areas in more detail; one is land use planning and travel demand management. This can consist of consolidating development, making use of fiscal measures such as congestion charging and walking and cycling improvements. Although cycling and walking are currently less safe than the car per distance travelled, the paper argues that these modes should be encouraged and that safety of walking and cycling should be one of the objectives of safety management. Another topic covered in more detail here is speed management where there are clear synergies between fuel-efficiency, reducing Green House Gases (GHGs) and safe driving. Eco-driving and the use of in-vehicle systems such as ISA are also mentioned as ways to reduce speed for the dual benefits of increased safety and lower emissions.

Health

Road traffic collisions and its links to the public health is the third topic looked at in more detail. There is a strong business case to include the prevention of road traffic deaths and serious injury on the health agenda as their associated costs to the health system across Europe are considerable. Alcohol and health is another major issue linked to road safety. Drink driving is often a precursor of alcohol problems and tackling drink driving within a rehabilitation programme can lead to wider benefits in relation to health. The paper highlights that the use of alcohol interlocks can be a useful tool for managing health and bringing about improvements in road safety. Tackling obesity through promoting an active lifestyle with cycling and walking is also discussed also in relation to “safe routes to school”.

The second tier of areas where there are clear links between road safety and other policy areas are covered in Part 3. These include trade and procurement, liveable cities, accessibility in transport and equity, development co-operation, policing and tourism. Each of these sections will come up with possible synergies and tensions of factoring in road safety into their work area. The figure below aims to show that the interconnections between road safety are manifold and that only one part of them have been presented in this paper. The figure also shows the ways in which the different issues can be interlinked and how they overlap.

This paper concludes that integration of road safety into other policy areas can bring benefits. Joint objectives can be elaborated through co-operation between different areas of work in the public and private realm. This can be of benefit to reducing risk on Europe’s roads.

Figure Integration of Road Safety into Different Policy Areas.


Environment
Employment
Health
Road Safety
Roads Policing
Tourism
International Co-operation
Market for Safety
Trade
Equity
Accesibility
Liveable Cities

Part 1

1.1 Introduction

Integration of road safety into other policy areas means systematically taking the issue and mainstreaming it. Road safety can help meet other objectives. This also means however, identifying potential conflicts and looking at ways to overcome them. This paper argues that useful synergies can be created and achieved and certain objectives can be met through integrating safety into other areas. Moreover, that in line with the *Safe System* approach these can contribute to other societal goals such as improved health and a cleaner environment. This paper aims to look at what integration means in relation to several policy areas. It will examine three policy areas in more detail, these are: employment, environment and health. These three policy areas have been chosen as they are the strongest areas for explaining the most obvious synergies between road safety and other related areas. The paper will then progress to covering a longer list of other issues which represent a second tier of policy areas where there are clear links between road safety and other policy areas. These include trade and procurement, liveable cities, accessibility in transport and equity, development co-operation, policing and tourism. Each of these sections will come up with possible synergies and tensions of factoring in road safety into their work area. The paper will also propose recommendations on how to maximize the benefits and overcome potential problems.

1.2 Road Safety Integration and the European Road Safety Policy Landscape

First as a background in 2011 the EU adopted a new Transport White Paper (64) and set new targets for reducing road traffic deaths in the EU: *"By 2050, move close to zero fatalities in road transport. In line with this goal, the EU aims at halving road casualties by 2020.*" The White Paper Communication reiterates the main elements of the recent "Road Safety Policy Orientations 2011-2020" (62) published in July 2010. An "integrated approach to road safety" is one of the three top principles in the European Commission's Road Safety Policy Orientations 2011-2020. The European Commission states that:

"The future road safety policy should be taken into account in other policy fields of the EU, and it should take the objectives of these other policies into account. Road safety has close links with policies on energy, environment, employment, education, youth, public health, research, innovation and technology, justice, insurance, trade and foreign affairs, among others (62)."

Thus the principle of reciprocality within the policy development process at European level is included in this strategy document. Moreover it is given a high level placement in the document. It comes alongside the other two principles: "highest road safety standards in Europe" and "subsidiarity, proportionality and shared responsibility". However, a structure to systematically ensure that this guiding principle is followed through and monitored was not included and would be a positive addition to bring about its implementation. A suggestion as to how to do this is presented under section 1.4.

The European Parliament, in its Own Initiative Report on Road Safety (77) adopted in September 2011, also supported the strategic objectives proposed by the European Commission in its "Policy Orientations". The European Parliament proposed a "road safety co-ordinator" who would bring together different actions on road safety. It explains that; *"if road safety is to be improved a coherent, holistic and integrated approach is needed which encompasses all road users and stakeholders and seeks to develop synergies with other policy objectives."* Also that: *"the mainstreaming of road safety issues in*

all relevant policy areas..call for an exceptionally high degree of coordination". Thus, also recognising the importance of 'integration' as a guiding principle.

Ministers at the Transport Council in 2010 adopted Conclusions (131) which prioritized measures they wanted to see for the brand new "common European area for road safety" in response to the European Commission's "Policy Orientations 2011-2020". The Ministers supported the Commissions' new ambitious target of halving road traffic deaths by 2020 and even went beyond this by proposing that the EU "aims towards the long-term zero vision" for European road transport safety. They included a strong commitment to integration. Ministers stated that:

"in order to reach maximum efficiency, road safety should be integrated into other policies, together with their enforcement and implementation, such as education, health, social policy and employment, police and judicial cooperation, environment, research, insurance and taxation and therefore a holistic approach is needed."

With this inclusion, Ministers gave additional input to what should be the main areas of European road safety policy making for the next decade and identified integration as one of their preferred priorities.

1.3 Parallels with Environmental Policy Integration

Integration of road safety can learn from the experience of integrating environment into all policy areas. This was a requirement of the Amsterdam Treaty and was propelled into action by the so-called "Cardiff process", which was launched by European heads of state and government during the European Council meeting in Cardiff in June 1998.

The background is that the Treaty of Amsterdam (1997) gave a more prominent place to the principle of integrating environment into different policy areas in Article 6:

"Environmental protection requirements must be integrated into the definition and implementation of Community policies and activities referred to in Article 3, in particular with a view to promoting sustainable development (133)."

In 1998, the European Commission prepared a "Partnership for Integration" Communication (53) explaining how this could be achieved and that this would entail a "break with traditional sectoral decision making" and called for a joint approach to be taken by Council, Parliament and the European Commission. The Commission also recognised in its communication that this would be a long term challenge requiring a step by step approach which builds on experience. During its June 1998 meeting in Cardiff the European heads of states and governments requested all Ministerial Council formations to develop integration strategies, with energy, transport and agriculture called upon to start off the process. In the next years, two further 'waves' were initiated calling on Industry, Internal Market and Development, Economic and Financial Affairs, General Affairs (GAC) and Fisheries to join the process. These and other European Councils requested that progress should be monitored, taking into account the Commission guidelines and identifying indicators.

1.4 Integration Structures at National and EU Levels

At a national level there are already some examples of such constellations of managing road safety and its interaction with other policy areas (31). As cross sectoral co-operation is crucial it is therefore of paramount importance to organise clear institutional roles and responsibilities. The institutional arrangements may include an Inter-ministerial Transport Safety Committee with the Prime Minister as chairperson. Another body with a key role in many countries is the National Traffic Safety Council, which should meet periodically and act as an institutionalised round table for consultation with stakeholders. A single leading agency accountable and with enough powers, is in most cases, indispensable to avoid sub-optimal coordination of road safety responsibilities (31).

France- Inter-ministerial Committee for Road Safety

As far back as 1972, in response to a proposal by the then French Prime Minister the first "National Delegate for road safety" was nominated reporting directly to the Prime Minister. The task of this high ranking official was to organise and coordinate an "Inter-ministerial committee for road safety", chaired by the Prime Minister himself and consisting of all the government ministers concerned, 12 in total. The terms of reference of this committee were to "define government policy in the field of road safety and ensure its application". The committee was "tasked with adopting all necessary directives and preparing the necessary draft legislation, as well as examining the annual road safety investment programme as part of ministerial budgets". The committee continues to exist to this day and meets at regular intervals.

A proposed structure to bring integration of road safety into other policy areas into reality at a European level has also been developed (36). The EU could consider designating a European figure endowed with high authority and recognized by Member State governments to act as a road safety 'Ambassador'. This person would be held personally responsible for both successes and shortcomings of European action. This ambassador would also be responsible for setting up a Road Safety Task Force chaired by the President of the European Commission and including key Commissioners such as Transport, Health, Budget, Research, Enterprise and Industry, Information Society, Employment, Environment and Education and Youth. This model is based on the experience that building political commitment and leadership at the highest level are prerequisites for preventing road traffic deaths and injuries. Such high level task forces already exist in other areas such as employment and media integration. A parallel constellation in the European Parliament could also be set up in the form of a Committee (in the same format as the current one on Climate Change). A chair should be appointed who would then cooperate closely with the Road Safety Task Force of the European Commission and participate in their high level meetings.

The Task Force could meet annually and steer the implementation of the priorities of the EU's road safety policy. Key to this approach would be to work across the different sectors. It would recognise that road safety is a cross-cutting policy which needs buy-in and ownership from different sectors of the policy makers in the EU institutions. Mobilising the EU budget to allow the target oriented setting of measures and setting up financing and incentive models for the implementation of this action plan are also essential. The original idea was for the Council to approach road safety in a similar manner to the Cardiff environmental integration process. Every EU Presidency holder both individually and in their trio formation make an effort to focus attention on road safety and ensure a regular meeting of Transport Ministers to concentrate on this topic.

1.5 Integration of Road Safety into Different Policy Areas. Winners and Losers

The benefits of integrating road safety into other policy areas are manifold. This next section identifies who are the winners and losers of integrating road safety into different policy areas. Before this, a short explanation as to how the related policy areas have been chosen. Those in Part 2: employment, environment and health are highlighted for closer attention as they are the three areas which are most obviously associated with road safety. By linking driving for work, reducing risk in this area can render benefits to a great number of journeys undertaken and contribute to improving road safety more generally. It also touches on some of the key road safety risk factors: speed and alcohol. The second topic, environment, underpins a number of road safety benefits such as promoting safe and also green public transport modes. The third topic chosen for scrutiny is that of health, which has a longstanding base for treating road injuries and deaths as a public health, not just a mobility problem. The paper outlines what the links are and where there are benefits and also potential challenges to be overcome. Under Part 3, the second tier of issues were chosen as there are also clear links to road safety but the links are not as close and sometimes have to be teased out in the paper. At present there is a future research need to identify a theoretical model for choosing the related policy areas and applying the integration process to them. One could for example have chosen sustainable development, with its three pillars of environment, economics and social. However the approach was taken to choose policy areas whose main criteria were the extent to which overlaps with road safety policy already exist and exploration was deemed to be relevant. Figure 1 below aims to show that the interconnections between road safety are manifold and that only one part of them have been presented in this paper. The figure also shows the ways in which the different issues can be interlinked and how they could overlap.

Figure 1 Integration of Road Safety into Different Policy Areas.

The main benefit of integrating road safety into other policy areas is that there is added strength in achieving joint objectives due to synergies. For example if one policy area wishes to bring about a new measure and it discovers that in doing so it will also reach an objective in another policy area this may

give both a boost. One example explored in this paper is under speed management, the introduction of speed limits, speed enforcement and controls have environmental benefits of reduced greenhouse gases. This may have the added benefit of bringing on board other people than if only the arguments around road safety benefits were used. Policing the roads, is another good example. This can bring benefits not just in improved compliance with road safety laws. This also has another benefit as through the presence of Police they can deter criminal activities and support safer communities. One politician or local Police chief may be swayed more by the argument for policing for law and order rather than policing for improved road safety. An alignment of policies needs better co-ordination as discussed previously. This can come about at European level, national, regional or local but also within a company for example. Here synergies may be discovered in the process that the different partners were not even aware existed.

Pooling of resources within the context of an initiative to integrate road safety into another policy area can also help. The management of equity, mobility or lack of it can often have a big effect on a person's health, employment prospects and social interaction. By breaking down the barriers to mobility then this can bring about multiple benefits. Another benefit to integrating road safety concerns into mobility is also improved efficiency for example by using journey planning within freight transport. There is also a clear business case to be made in integrating road safety measures into driving for work. Real savings can be made not just in wear and tear and fuel consumption but also in terms of preventing the loss of life or serious injury. This is also explored in this paper. Safety also has a strong role to play in the market, consumers do take note of safety concerns in their vehicle purchasing. The automotive sector makes up an important part of the European economy and in trading relations with the rest of the world. The EU has the reputation of being the global centre of the safest vehicles. Business can also build on this by including safety as a point to win a contract within procurement if they are providing a transport service for example. The Swedish Trade Council has even launched the Vision Zero initiative to export the concept and road safety related services globally. Thus safety can also be an important factor in sales and marketing either of a vehicle, a service or even a concept.

However integration can also bring up conflicts, where reaching one objective may provide tensions for another. One example can be identified with the new push under health and climate change to promote zero carbon modes of cycling and walking which are currently the riskier modes. However this paper argues that the health benefits outweigh the risks incurred. Reducing road risk exposure by reducing travel may make sense. For example looking at vulnerable groups, encouraging fragile elderly people to walk to the bus stop or a child to walk to school is problematic. There are many other important reasons why people are obliged to, or even choose to move. Safety should not be a barrier to mobility, instead efforts should be made to make mobility and all different modes as safe as possible. Another concern is that through road safety integration it may result in being a casualty of its own success, in that it loses its own separate profile. If road safety becomes part of other policy areas its' own targets may be lost. Yet it is clear that through looking at possible synergies and also potential conflicts the end result should emerge stronger. Through co-operation between different representatives of linked policy areas exchanges will emerge with ideas on how to overcome problems and identify and reach common objectives.

Strategies to bring about this integration should be part of every road safety plan be this at a European, national, regional or company level. Within the EU, for example, they could adopt a strategy to achieve a stringent integration of road safety in all policies that have an impact on road users' risk levels (36). A mechanism is needed to guide the process.

Part 2

Part 2.1 Work Related Road Safety

Three policy areas: employment, environment and health will be examined in more detail to present possible areas of overlap and also conflict. Starting with road safety and driving for work. Driving for work entails journeys undertaken during working hours and improving work related road safety (WRRS) will also contribute to improving road safety as a whole in Europe; 30,100 lives were lost on European roads in 2011, of those a large percentage were related to driving for work or commuting (see Figure 2). Figures show that road traffic collisions (59) accounted for nearly 40% of incidents at work resulting in death.[1] This is one of the strongest areas for explaining synergies between road safety and another policy area. This section will begin by setting out the EU level policy action in this area. It will then enter into looking at the synergies and possible tensions of integration.

Figure 2: Road collisions while working and commuting (50)

Country (data for 2007, except Germany 2006)	Austria	Belgium	France	Germany	Spain
Total deaths	192	175	1,029	1,117	1,167
% of which on the road	54	53	48	61	40
Total deaths at-work	130	96	622	642	826
% of which on the road	32	32	23	34	20
Total deaths commuting accidents	62	79	407	475	341
% of which on the road	100	81	86	97	89

2.1.2 EU Level Policy on Work Related Road Safety

The EU has tackled this topic so far both from the transport and the employment side. First looking at it from the employment side it has adopted "Improving Quality and Productivity at work: Community Strategy 2007-2012 on Health and Safety at work". As part of this the Commission proposed the ambitious goal of achieving by 2012 a 25% reduction in the total incidence rate of accidents at work (number of accidents at work per 100 000 workers) in the EU 27. At present, there are no specific measures focussing on reducing death and injury whilst driving for work. Clearly this should be included in the next Community Health and Safety at Work Strategy as a priority.

In terms of EU legislation, occupational health and safety and road safety compliance are legal necessities in all EU Member States. The European Framework Directive 89/391/EEC on the health and safety of workers (21) requires every employer in Europe to undertake a risk assessment according to the principles of prevention. This should include employees travelling for work. Some Member States have supplementary legislation detailing employers' obligations to eliminate risks related to driving for

[1] This refers to the 'transport branch' and fatal Road Traffic and Transport Accidents in the Statistical Classification of Economic Activities in the European Community. The data do not include commuting nor do they include Ireland or the UK.

work. The European Commission, together with the Advisory Council of Health and Safety at Work, has prepared a Guidance document (52) on applying the Directive 89/391/EEC. This covers key definitions of risk assessment and methodology on how and where to revise and review the risk assessment. Specific Guidance for Reducing Work Related Vehicle Risk is due for development by 2015.

Looking at this topic from the transport perspective, the EU is active in road safety in general and a range of measures have been introduced with relevance to employment as well. Most specific attention to work-related road safety within road traffic law has been to regulate large commercial and passenger road transport operations and the carriage of dangerous goods. A range of other initiatives include best practice guidelines on securing cargo, EU projects on weigh in motion (WIM) technologies to assist the prevention of vehicle overloading and European truck crash causation, carried out by the European industry. The European Road Safety Charter was launched in 2004 and has over 1,000 members including stakeholders from local government, SMEs, global business and the NGO community.

More recently in 2010 the Commission Communication "Towards a European road safety area: policy orientations on road safety 2011-2020" anticipates further activity on work-related safety such as review of the case for the fitment of speed limiters in light commercial vehicles, the compulsory installation of alcohol interlock devices in professional transport vehicles (e.g. school buses) and event data recorders ('black boxes') on professional vehicles.

Following this short EU policy background this paper will now outline the major synergies gained in integrating road safety concerns into employment policy.

2.1.3 The Business Case

The most convincing argument for integration of road safety into employment is the business case. This means that for employers there are the convincing economic arguments in preparing and implementing a work related road safety management programme. A holistic approach to implementing a programme may bring benefits also in other areas, as safety is closely linked to quality, customer service, efficiency, environmental programmes and becoming more efficient (100). In terms of efficiency this may lead to better fuel efficiency as well as less downtime due to different scheduling (45). Another positive effect is likely to be reduced wear and tear of vehicles and enhanced residual value. Furthermore, a collision may result in lost orders. The reputation of an employer may be affected beyond that one day or week of lost business.

The benefits can be reflected in different ways:

- Reduced running costs through better driving standards (fuel consumption/vehicle maintenance costs);
- Fewer working days lost due to injury;
- Reduced risk of work-related ill health;
- Reduced stress and improved morale/job satisfaction;
- Less need for investigation and paperwork;
- Less lost time due to work rescheduling;
- Fewer vehicles off the road for repair;

- Fewer missed orders and business opportunities, reduced risk of losing the goodwill of customers;
- Less chance of key employees being banned from driving (102).

Most employers may look at the cost of their insurance premium and any excess but the far bigger financial implications are the hidden costs associated with every work related incident/collision. Research shows that typically workplace injury costs are met 40% by the employee, 30% by the employer and 30% by the community as a whole (101). The International Loss Control Institute (ILCI) states that for every 1€ paid out by an insurance company there are 8-53€ in uninsured losses, depending on the severity of the collision (87). Research undertaken by the UK Health and Safety Executive (85) identified that the 'below the water line' 'iceberg' costs can be 8 to 36 times greater than the visible 'above the water' 'iceberg' costs. Having a WRRS programme can also boost staff morale and avoid having a high turnover of staff.

2.1.4 Workplace Health Promotion

Another area which will bring benefits linked to road safety to employers is workplace health promotion (WHP). This is of paramount importance, but it is also a real challenge for employers. It taps into matters such as lifestyle, work/life balance, and general wellbeing. Employers are very likely to find that a large number of driver related risk factors are related to health: stress, fatigue, distraction, ageing staff, unhealthy diet, consumption of alcohol, illegal drugs or prescription medicine, pre-existing diseases, smoking and lack of exercise. When it comes to professional drivers, a number of sector-related health conditions are also frequent: lower back pain, being overweight, cardiovascular and respiratory disease, and work-related stress (26). This is also amplified by the fact that the population of professional drivers is an ageing group. Drivers have to work under time pressure in a highly competitive environment providing a broad spread of tasks required by clients (49).

WHP encompasses everything done by employers, their employees, and society to improve the health and well-being of people at work. Here are examples of several WHP measures that employers can implement: enabling flexible working times; offering teleworking when appropriate; offering healthy canteen food; offering sport and relaxation classes; offering courses on social competence like dealing with stress. WHP requires commitment from both, employers and employees (27) and as with every safety endeavour WHP works best when it is part of a safety culture endorsed at all levels of an organisation, starting with senior management. Research shows that investment in WHP yields a return on investment of one to 2.5 – 4.8 in reduced absenteeism costs.

2.1.5 Workplace Health Promotion and Alcohol

The business case for addressing alcohol impaired driving in the workplace is also strong. The vast majority of citizens with alcohol problems are employed full time. Employers can reap productivity gains and savings from a reduction in alcohol-related vehicle crashes (106). Employers of professional drivers have an important role to play in increasing the awareness of drivers about the risks of drink driving. Employers and fleet operators should be strongly encouraged to set up their own initiatives. This should form part of a holistic approach in setting up a road safety plan. One helpful set of guidance is set out in the ILO's Code of Practice on Management of Alcohol and Drug-Related Issues in the Workplace (88). This recommends that every employer should, in cooperation with employees and their representatives, develop a written enterprise policy on alcohol and drugs in the work place. In some countries, for

example in Belgium, all companies are obliged by law to develop and integrate in their working place rules a preventative policy for drugs and alcohol (120).

2.1.6 Driving for work and managing speed

Excessive and inappropriate speed is the number one road safety problem (34). Employers also have a strong role to play in making sure that their employees are driving safely and respecting the speed limits. Exceeding speed limits is widespread, thus a large number of non-compliers are required to change their behaviour to redress the problem. The integration of road safety into employment policy and its management of speed also have positive results for safety and in areas of fuel efficiency. Driving at speeds which are appropriate to the prevailing conditions can offer cost saving across the board not only through a reduction in collision costs but also in terms of reduced vehicle wear and tear, reduced fuel consumption and reduced air and noise pollution.

At the same time, many drivers are under pressure to speed. 'Speeding has been associated with work-related traffic due to trying to save time whilst driving and meeting scheduled deadlines. Many people feel it is necessary to exceed speed limits whilst driving for work. Time pressures may influence drivers to participate in unsafe behaviour whilst driving, such as speeding, overtaking and following vehicles closely (86).'

The pressures of just-in-time management in the professional transport industry, and the risks this poses to road safety in terms of issues such as fatigue and speeding, are already well documented (45). However, the industry is also highly regulated when compared with other modes, with laws limiting the maximum speed of HGV's and buses on certain types of roads and requirements for the use of tachographs which store details of the movement of vehicles and of certain work periods of their drivers. Such initiatives provide a stronger framework in which to combat speeding.

Workloads are increasing and employees can face escalating pressures, for example pressures from clients to deliver faster and more cheaply, with issues such as 'just-in-time management', increased traffic, remote monitoring and working irregular and long hours. Drivers can be over-stressed by the demands placed on them to complete work or to deliver goods to meet the schedules of modern transport systems. If they fail to meet such schedules employers may have to compensate the client for delays incurred. These situations have the potential to encourage drivers to take risk in terms of appropriate driving speeds.

Telematics for Managing Speed

The use of telematics and new technologies which can monitor and record speed provides employers with an opportunity to continuously monitor their employees driving and speed behaviour. This is particularly relevant to professional drivers and provides a means by which employers can identify speeding offences that may go undetected by national enforcers. Insurers can incentivise the use of such technologies by linking their use to insurance premiums. With new technology, fleet managers can see not only that a speed offence took place but also more precisely the speed of the driver in the different speeding zone. Using such data, via a data-warehouse managers at all levels in an organisation can identify the prevalent risks, then target, record and monitor relevant interventions such as training, communications and focused one-to-one discussions. Such devices can be put in all fleet vehicles, although increasingly more detailed analysis is being used to target attention to the 5-15% of drivers

that are responsible for a disproportionate number of collisions and violations in most organisations.

Part 2.2.1 Integrating Road Safety and Environment Policy

Road safety and environmental considerations are high priority areas in terms of transport however they are more often considered separately rather than in a coordinated manner. At the European level the arenas of transport and environmental policy are clearly linked and much work has been carried out over the last decade to ensure an integrated approach towards these two policy areas. Despite the existence of common aims, recent research from the European Commission underlines that the current transport system is not on a sustainable path. The Transport White Paper 'Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system' sets out a roadmap of forty initiatives for the next decade to work towards sustainability. The White Paper aims to build a competitive transport system that will increase mobility, remove major barriers in key areas and fuel growth and employment. At the same time, the proposals aim to dramatically reduce Europe's dependence on imported oil and cut carbon emissions in transport by 60% by 2050. At present transport is responsible for around a quarter of EU greenhouse gas emissions making it the second biggest greenhouse gas emitting sector after energy. Road transport alone contributes about one-fifth of the EU's total emissions of carbon dioxide (CO2), the main greenhouse gas. While emissions from other sectors are generally falling, those from transport have increased 36% since 1990. At a global level "road safety" was recognised as a part of efforts within sustainable transport to reach sustainable development in the outcome document "The Future We Want" adopted by the UN Conference on Sustainable Development in June 2012 (135).

Private vehicular travel and road freight transport are by far considered to be the most detrimental to the environment in terms of transport modes along with air travel. Environmentally sustainable transport aims to address the spread of car dependent lifestyles focusing on public transport (supported by walking and cycling for access and short trips) as well as rail (and water based) freight transport. Car dependency results in more kilometres driven and more road risk while the alternatively public transport offers the safest way to travel. The opportunity exists for further integration of these areas to capture latent benefits.

There are a number of overarching principles aimed at reducing the environmental impacts of transport that also underpin efforts to reduce the impacts in terms of road collisions and their outcomes.

- Reducing the need to travel
- Reducing the length of trips / distance travelled
- Promoting and encouraging the use of modes which perform better with respect to safety and environment (bus, rail)
- Encouraging and facilitating behavioral change (safer, more environmentally friendly)
- More efficient use of transport systems and infrastructure.

It is clear that policy and behavioural changes for addressing climate change and pressures on non renewable resources offer the potential for stronger integration with road safety aims. Transport policy goals emphasise significant modal shift away from road transport for both people and goods while also increasing the efficiency of infrastructure use and co-modality. It is argued that such co-ordination has the potential to also offer significant road safety benefits in terms of collision reductions via a reduction in the volume of road transport and therefore exposure to risk.

2.2.2 Land Use Planning and Travel Demand Management

One area where environment and safety concerns can and should interact is in land use planning and travel demand management. The EU's Transport White Paper stresses that "*Demand management and land-use planning can lower traffic volumes. Facilitating walking and cycling should become an integral part of urban mobility and infrastructure design*." The White Paper signals a change of approach to dealing transport issues – from the traditional single-pronged approach of building more and more transport infrastructure to a more multi-faceted approach that also seeks to manage travel demand and make better and more efficient use of existing resources and new technologies.

Traditional road safety places a strong emphasis on reducing risk through vehicular improvements and road infrastructural improvements (as well as driver behaviour). However, such improvements can also result in increased kilometres travelled and volumes of traffic. The safety impact of such changes is given 'little or no consideration (95).' Further research into this relationship is required and more consideration should be given to the safety impacts of changes in overall vehicle kilometres travelled precipitated by policy intervention. It could be argued that more emphasis should be placed on policy options that seek to reduce kilometres travelled and this approach should be strongly integrated into road safety policy. It is important to recognise that both the numbers of people travelling and the overall distance travelled have an impact on road risk. Thus reducing travel demand has the potential to reduce road risk as well as contribute to more sustainable transport patterns. 'This approach contrasts markedly with the conventional engineering wisdom on the safety benefits of ''improving'' highway facilities and achieving higher standards of design (109).' Travel demand management and/or mobility management measures are becoming increasingly important in terms of contributing to tackling the environmental impacts of transport. Such measures seek to change travel behaviour (trip reduction, trip length reduction, reduction in vehicle use, increased travel by alternative modes etc) rather than to provide more physical capacity for travel (road improvements, bus services etc). Travel demand management can include land use planning measures such as consolidating development, fiscal measures such as congestion charging and a range of other measures including school and work place travel planning, car sharing, teleworking, walking and cycling improvements. 'There is a strong case for mobility management strategies that reduce per capita vehicle travel (exposure) being of value in reducing overall crash risk(103).'

Transport is a demand derived from the location of homes, jobs, education, shopping and other land uses. As such, transport infrastructure and services cannot be supplied or transport demand managed in isolation from land use planning. The interactions between land use planning and road safety need to be considered as part of policy making.

2.2.3 Walking and Cycling

Soft modes have zero emissions but there are implications for safety. The White Paper recognises that: 'in urban areas, walking and cycling, together with public transport, often provide better alternatives not only in terms of emissions, but also of speed[2]: they could readily substitute the large share of trips which

[2] The recent feasibility study for a central London cycle hire scheme considered that cycling is time competitive with all other modes over distances up to 8km. A web based quantitative study amongst

cover less than 5km." Also that "in addition to lowering greenhouse gas emissions, they bring major benefits in terms of better health, lower air pollution and noise emissions, less need for road space and lower energy use". They stress that "accordingly, facilitating walking and cycling should become an integral part of urban mobility and infrastructure design".

In Europe deaths among pedestrians and cyclists decreased by 34% between 2001 and 2009 compared with 39 % for car drivers (43). The risk of being killed in traffic per kilometre travelled is more than 9 times higher for pedestrians than for car occupants and more than 7 times higher for cyclists than for car occupants (30). The severity of injuries suffered by vulnerable road users is also higher than for car occupants. Non-motorised means of transport, such as cycling and walking, account for only a small share of distance travelled by road. But they account for much larger proportions of journeys made and time spent using the roads. It is often claimed that cycling or walking should not be encouraged as they are less safe transport modes than cars. But research rejects this argument because the advantages of walking and cycling for public health (a healthy life through regular exercise) outweigh their disadvantages (the risk of death or injury). Walking and cycling should be encouraged as travel modes for citizens across the EU, and safety of walking and cycling should be one of the objectives of safety management. Furthermore, road safety engineering must not unduly hinder, and, wherever possible, should promote, the use of sustainable transport modes. 'The active transport modes deserve closer analysis in terms of how they can become part of road safety strategies, how their uptake can be facilitated, and what limitations typically apply (103).'

Kick Start Kirkwall: Health and Active Travel

"Kick Start Kirkwall" was a campaign which aims to create a healthier, greener and more sustainable Kirkwall (92). Kirkwall is the capital of the Orkney Islands with a population of 8600. Most of Kirkwall's working residents live within three miles of their place of work, but 43% drive to work. The project was led by Orkney Islands Council and funded by the Scottish Government's Smarter Choices, Smarter Places Campaign and ran for three years 2009-2011. The three year project represented an investment of £1.28 million, of which more than £0.76 million will come from the Scottish Government. The Kick Start Kirkwall campaign included a number of projects, amongst others launching personalised Travel Planning to give local people in 3000 households information and support about the changes they could make towards walking and cycling more and generally becoming more active. Another part of the budget went towards improving infrastructure, path network links and footways around the town to make it easier to walk and cycle. The health sector also played a strong role in the project. For example through the National Health Service doctor referrals which were used for active travel opportunities where physical activity can improve someone's general health. The project resulted in over a third of those targeted changing their travel patterns to walk and cycle more and use their cars less (93).

2.2.4 Speed Management

This section looks at the issue of speed and shows that there are clear synergies between fuel-efficiency, reducing CO2 and safe driving in terms of speed management policies. Continued action to tackle excessive speeding is required as it remains the single biggest contributory factor in fatal road collisions (34). Speed management can be defined as a set of measures to limit the negative effects of illegal or

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both cyclists and non cyclists undertaken in 2006 also found that speed is perceived to be one of the main positive 'drivers' of cycling to work in Central London. Source: TfL, 2008, *Cycling in London*.

inappropriate speed including credible speed limits, enforcement and education, and 'self explaining' and tailored roads and vehicles (111, 1). 'In addition, the concern for safety is not the only reason why speed management is necessary. Speed management strategies are often consistent with other policy goals since speed plays a role in a number of transport indicators such as mobility demand, fuel consumption and CO2 emissions, air pollution, noise and congestion. The current concern over climate change and CO2 emissions has stirred convincing arguments for lowering speed limits and improving their enforcement (34).'

A World Health Organisation report identified speed management precisely as the policy option most likely to bring about synergies between concerns including collision reduction and climate change mitigation. According to Anable et al (5), lower or better enforced speed limits are 'one of the most certain, equitable, cost effective and potentially popular routes to a lower carbon economy'.

The importance of this interaction is recognised by the European Commission in the White Paper on transport which states that "reducing speed is an extremely effective way to reduce not only the risk of collisions but also fuel consumption," particularly as this approach enjoys the support of the European public. Despite this speed management policies remain largely in the domain of road safety and are rarely translated into measures in the environmental sphere. The failure of integrating speed management policy into 'discussions about carbon abatement…are probably because limiting speeds is mistakenly seen as a non-innovative or non-politically viable solution (34).' Setting and enforcing lower speed limits would go some way to harness road safety and environmental benefits. It may be useful to consider a European level approach in terms of legislating for this.

An integrated and combined approach between road safety and environmental policy areas has significant potential for mutual benefits and more concrete action is required in this regard. The OECD estimates that at any one moment 50% of drivers exceed legal speed limits(111). The extent of the behavioural change needed illustrates the urgency and indicates that regulatory may be the most sensible approach to tackle speed. Uniform maximum speed limits for Europe's roads could be a way forward, as is increased enforcement. Calculations have been undertaken showing that reducing speeds across the EU by just 1 km on average could save 2,200 lives every year (34).

France 'Plan Climat'

In France, the Environment Ministry in its 'Plan Climat' (2004) concluded that the potential impact of full compliance with speed limits has been worked out at 2.1 million tonnes of CO2 for private cars, 0.4 million tonnes for heavy goods vehicles and 0.5 million tonnes for light utility vehicles, amounting to a total of 3 million tonnes of CO2 per annum. This is equivalent to a 2% CO2 emissions reduction. This is a high figure compared to other measures implemented by France (see figure 3 below). Unlike other measures it was not foreseen as something achievable over a long time horizon, but as something capable of offering immediate and gradually increasing reductions (thanks to France's efforts to increase compliance with speed limits)(34).

Measures	Reductions 2010 (Mt CO2.eq.)	Pilot	Horizon
Reduction in emissions relating to action on vehicle engine technology	3.0	Ministry of Transport	2008
Application of the directive on biofuels	7.0	MINEFI	Gradual up to 2010
Clear information on energy consumption (Energy Label)	0.2	Ministry of Transport	2005
Bonus/surcharge for vehicle purchase	1	MINEFI/Ministry of the Interior/MEDD	As soon as possible
Compliance with speed limits	**3.0**	**Ministry of Transport**	**Gradual since 2002**
Awareness of the effect of a less aggressive driving style as a topic in the driving test	0.7	Ministry of Transport	2005
Development of collective urban transport systems	0.2	Local municipalities	2005
Improvement in company logistics	0.5	ADEME	2005
Rail freight		Ministry of Transport	Gains after 2010: 0.7 Mt
Hight speed train network		Ministry of Transport	Gain after 2010: 0.6 Mt
Maritime Highways	0.2	Ministry of Transport	2006
Air transport	0.5	Ministry of Transport	2007
Reminder: Air conditioning			
Total sustalnable transport	**16.3**		

2.2.5 Eco-Driving and ISA

Eco-driving and in-vehicle systems that 'provide real-time information on prevailing speed limits' can further contribute to improving compliance with speed limits and, thus capture road safety and environmental benefits. If drivers behave in a more energy-efficient way, this also helps to improve the traffic flow, reduces fluctuations and the risk of congestion and traffic collisions (121). The main arguments in favour of eco-driving within the professional driving context are: a reduction of fuel costs, lower vehicle maintenances costs and vehicle wear and tear, reduction of CO2 emissions by around 8%, improved company image, reduced insurance costs (lower accident rates) and a reduction of stress and fatigue (121).

While the White Paper refers to the need to harmonise and deploy road safety technologies, the EU should have a stronger leadership role in promoting green and safe technologies especially Intelligent Speed Assistance Systems. ISA is a mature technology that has substantial safety benefits and potential

to reduce the consequences of most severe crashes (fatal and serious injury). Research shows that advisory ISA can achieve up it an 18% reduction in fatal accidents and intervening ISA can achieve a 37% reduction in fatal accidents in the UK (34). It is also an effective instrument in mitigating climate change. Carsten et al. (2001) demonstrated that in the U.K., CO2 emissions from cars using ISA could fall by 8% (14).

There is room for a more integrated approach between road safety and environment policy makers in terms of policies relating to speed and developing measures to apply them that can offer mutual benefits.

2.2.6 Vehicle Characteristics: Environment and Safety

Measures to promote increased replacement of inefficient and polluting vehicles are part and parcel of tackling the environmental impacts of transport. There are synergies here with road safety aims as older fleets tend to be less safe and modern vehicles include a larger range of safety technologies to help minimise risk. The production of lighter and less powerful vehicles could also do much to address concerns around fuel consumption. Many environmental programmes such as those incentivising low-GHG vehicle purchases and labelling the consumption of new vehicles sold are likely to affect the average mass of vehicles (98).

Over the last 15 years the top speed and more importantly the acceleration capabilities of cars have increased significantly. Almost every new car sold today is capable of reaching or exceeding a speed of 130 km/h - the upper legal limit on virtually all of Europe's roads. The majority of new cars today can exceed 130 km/h by at least an additional 40 km/h. More importantly from a safety perspective, the ability of today's cars to accelerate rapidly to any speed the driver chooses leads to these capabilities being used. Thus for today's traffic conditions the majority of cars are greatly over-powered for the conditions in which they are actually used (35). Limiting the top speed, acceleration ability and overall power of vehicles could also be considered as a means of addressing environmental concerns and could also reduce both numbers of road deaths and serious injuries. It's also possible within a professional context for fleet owners to adjust the fleet's performance and limit points such as top speed electronically. There is room for further integration between road safety and environmental policy areas in terms of vehicle design and characteristics including weight, mass, power, ergonomics.

Larger, Heavier Vehicles

Such issues have recently come to the fore in the EU as part of an ongoing debate over Directive 96/53 governing the weights and sizes of lorries; the European Commission recently opened a consultation on the subject (68). Longer and heavier vehicles (LHVs) are trucks typically measuring 25.25 metres in length and weighing up to 60 tonnes. Directive 96/53/EC allows Member States to use such vehicles at national level under the concept of the European Modular System (EMS) however, LHVs are not allowed to cross borders - revisions to this are being considered. The idea for increased us of LHVs is hotly contested by environmental groups who argue that facilitating their broader use will make road freight transport cheaper and more attractive to the detriment of more sustainable modes. There are also concerns in terms of road safety due to their size, weight, existence of larger blind spots and potential compatibility issues with existing road infrastructure (37). 'But the review also offers an opportunity to make 'smart' changes to lorry sizes, i.e. to move to a 'smarter' (greener and safer) design of the lorry's cabin including aerodynamics (132).'

2.2.7 Electro-mobility

Electric vehicles represent part of the move away from fossil fuel reliant transport and also offer transport that does not emit air pollutants and significantly reduces noise which results in marked benefits in terms of human health[3] improvements. Electric mobility is growing and such vehicles are likely to form a central part of future transport options. Within Europe, electrification of transport (electromobility) is a priority in the Community Research Programme. It also figures prominently in the European Economic Recovery Plan presented in November 2008, within the framework of the Green Car Initiative. Although the technology is relatively well developed the use of significant volumes of electric vehicles has not yet occurred in Europe and in this regard the potentials on road safety are not fully realised and here potential conflicts exist.

At low speeds electrically powered cars provide a near-silent ride with some research showing that they are silent up to approximately 20km/h. When exceeding this speed level, noise emission remains low and is caused mainly by the sound of the tyres. In this regard there is concern that such vehicles cannot be easily perceived by particularly by pedestrians and cyclists, older road users and those with, for example, visual impairments. Other safety concerns include the increased mass of electric passenger cars, the high voltage and how this reacts during a collision and the potential for different driving behaviours amongst those driving electric vehicles. In order to minimise potential negative impacts future research into such areas is required. Furthermore, it would be prudent to monitor and analyse crashes in which electric vehicles are involved (125).

Some moves are already being made to tackle the potential increased road risk proposed by almost silent vehicles. The Japanese government has drawn up a provisional norm for the requirements set to the sound level of electric vehicles up to 20 km/h. In Europe, acoustic warning systems and their possible standardisation are in the process of being developed as part of a proposed new regulation (65) on motor vehicle noise however it is still being debated as to whether manufacturers should be obliged to fit such systems or if it should remain voluntary.

2.2.8 Fiscal Measures

2.2.8.1 Road User Charging

Recent research 'indicates that transport pricing reforms can significantly increase traffic safety. However, these impacts are often overlooked, both when evaluating pricing reform benefits and when searching for traffic safety strategies (96).' The economic rationale for fiscal measures is that road users should pay directly for their trips, the service required to carry them out and the resulting associated costs including congestion, environmental damage and collisions. Therefore the transport system efficiency would be improved by aligning charges more closely with these costs. Aims also include changing road user behaviour and cutting greenhouse gas emissions.

[3] It is a major cause, not only of hearing loss, but also of heart disease, learning problems in children and sleep disturbance.

Road user charging or '*Road Pricing* means that motorists pay directly for driving on a particular roadway or in a particular area.' Road user charging is usually implemented as part of transport demand management packages alongside other demand management measures such as public transport enhancements. Road user charging can take many different forms including road tolls, cordon or area tolls, congestion charging or distance based charging. The impacts in terms of road safety are likely to vary depending on the form of road pricing introduced, its characteristics and the characteristics of the area in which it is being applied. Such relationships are complex and it would be useful for more evidence based research to provide deeper understanding in this regard. The table below gives a general summary the benefits of various pricing strategies, including on safety.

2.2.8.2 Pay as you Drive Insurance

Insurers are also keen to contribute to reducing the number and severity of collisions on the road, both as part of their commitment to social responsibility and of their efforts to lower claims rates (15). Clients can benefit from, reduced risk and in paying lower premium rates. By analysing claims data, insurers can identify groups of high-risk drivers and isolate the factors that contribute to their risk as a group. Where possible, they then tailor their products to address some of these factors. In some markets this is done by incentivising safer behaviour through initiatives such as no-claims discounts, discounts for driver training or telematics. Insurers can also influence safe vehicle choice by reducing insurance premiums linked to safety.

Pay-as-you-drive (PAYD) vehicle insurance is a 'new type of car insurance that ties the level of insurance premium to the risk level associated with driving behaviour of the policy holder. PAYD allows the direct administration of penalties for risky behaviour (e.g., speeding, driving during dangerous hours) and rewards for safe behaviour (e.g., keeping the speed limit). As such, it offers insurance companies a promising instrument for promoting driving at safe speeds and discouraging excessive speed violations.' A recent review of field test focused on young drivers and tested the effects of PAYD on speeding; here defined as driving above the posted speed limits. The experiment found 'that PAYD resulted in modest, but significant reductions in speeding of young drivers.' The study also sets out practical guidelines for policy makers and insurance companies aiming to introduce PAYD schemes as a tool to reduce crash risk, improve traffic safety, and reduce the negative environmental impacts of car use (10).

Figure 4 Road Pricing Benefits (113)

Strategy	Revenue Generation	Congestion Reduction	Pollution Reductions	Increased Safety
Road toll (fixed rates)	3	2	1	1
Congestion pricing (time-variable)	2	3	2	1
HOT lanes	1	2	1	0
Cordon fees	2	3	1	1
Distance-based fees	3	2	2	2
Pay-As-You-Drive insurance	0	2	2	3
Road Space Rationing	0	3	1	1

Rating from 3 (very beneficial) to –3 (very harmful). A 0 indicates no impact or mixed impacts.

2.2.8.3 Congestion Charging

Recent examples include the Stockholm scheme (2005) which demonstrated a decline in the number of injury collisions as a result of congestion charging. In the scheme the evaluation of the impact on road safety looked was based on estimates and 'relationships between road safety and changes in vehicle kilometres travelled, traffic flows and speed levels.' Both personal injuries and traffic collisions and an analysis of factors that indirectly affect road safety were considered. 'The combined effect of the Stockholm Trial on road safety is assessed to turn out undeniably positive, since the positive effects of reduced traffic are expected to be greater than the negative effects of increased speeds. A large percentage of the traffic accidents within the charge zone occur during the hours when the charge is imposed. A cautious estimate is that the Stockholm Trial has entailed a decline in the number of personal injury accidents of 5-10% within the congestion tax area (117).'

2.3.1. Road Safety as a Public Health Issue

Road injuries and deaths should be treated as a public health problem as well as a mobility issue. Internationally the public health dimension of the road safety problem was discussed as early as 1962, in a WHO report (110). In 1974, the World Health Assembly adopted a Resolution, declaring road traffic collisions a major public health issue and calling for Member States to address the problem. In 2004 the WHO and the World Bank jointly published the first "World report on road traffic injury prevention" (140). It also forcefully puts the case that road traffic collisions are a public health problem and that death and serious injury that they result in are avoidable and preventable. Looking at the area of health there are three areas that have been identified within the context of integration for consideration in this report: road safety and impact on death and serious injury on health strategies, alcohol and the links to tackling obesity.

This Figure 5 below shows that the projected likely trend showing that if nothing is done (business as usual) then road traffic injury is predicted to be one of the three main causes of death and injury in the world by 2030 (compared to 9th in 2004) (144).

2004 Disease or injury	As % of total DALYs	Rank	Rank	As % of total DALYs	2030 Disease or injury
Lower respiratory infections	6.2	1	1	6.2	Unipolar depressive disorders
Diarrhoeal diseases	4.8	2	2	5.5	Ischaemic heart disease
Unipolar depressive disorders	4.3	3	3	4.9	Road traffic accidents
Ischaemic heart disease	4.1	4	4	4.3	Cerebrovascular disease
HIV/AIDS	3.8	5	5	3.8	COPD
Cerebrovascular disease	3.1	6	6	3.2	Lower respiratory infections
Prematurity and low birth weight	2.9	7	7	2.9	Hearing loss, adult onset
Birth asphyxia and birth trauma	2.7	8	8	2.7	Refractive errors
Road traffic accidents	2.7	9	9	2.5	HIV/AIDS
Neonatal infections and other[a]	2.7	10	10	2.3	Diabetes mellitus
COPD	2.0	13	11	1.9	Neonatal infections and other[a]
Refractive errors	1.8	14	12	1.9	Prematurity and low birth weight
Hearing loss, adult onset	1.8	15	15	1.9	Birth asphyxia and birth trauma
Diabetes mellitus	1.3	19	18	1.6	Diarrhoeal diseases

2.3.2 Engaging the Health Community in Road Safety

There already exists a strong tradition of medical and public health professionals and their respective organisations which have initiated programs for change within the area of road safety (36). This represents a strong advantage in gaining support for bringing about change. They have acted as opinion leaders or encouraged politicians to promote legislation which introduced traffic safety measures in a number of Member States. For example, medical groups have been particularly instrumental in convincing politicians about the merits of seat belts, child restraints and motorcycle safety helmets and about the need for vigorous enforcement of laws requiring their usage. The WHO proposed that the health sector takes on a more proactive role and brings road traffic injuries back into its core business. The EU health policy makers should take a similar approach.

At a European level, the EU regularly adopts strategies looking at health. The most recent one is called 'Together for Health- A Strategic Approach for the EU 2008-2013'. This current strategy includes four main principles: shared health values, links between health and economic prosperity, strengthening the EU's voice in global health and 'integration'. According to the EU Treaty, the EC is required to make sure that a high level of health protection is ensured in 'the definition and implementation of all Community Policies and Activities (57)'**.** Transport policy is not listed as one of the key priorities. However it is mentioned briefly within the context of tackling obesity and the need to promote physical activity. The strategy has three strategic objectives: good health in ageing Europe, protecting people from health threats and supporting dynamic health systems and new technologies. However the need to include road traffic deaths or serious injuries has been overlooked in this strategy. One road safety issue, namely the safety of vulnerable road users, is identified as a priority for action in a 2007 Recommendation adopted by Member State governments on prevention of injury and promotion of safety (18). Clearly there is a need for the EU to communicate the benefits of countermeasures in

reducing road risk in terms of public health and cost savings to the European citizens in the next EU Health Strategy. The EU should also look to integrate road transport safety into the EU Health Strategy.

From the transport perspective, the European Commission's Directorate General (DG) MOVE has dedicated a whole objective within the "Road Safety Policy Orientations" to "improving emergency and post injury services". The EC notes that road injuries "have been recognised as a major public health concern at international level, in particular by the World Health Organization and in the framework of the UN Decade of Action for road safety (62)." Here, the European Commission proposes that different actions are needed to target serious injury including for example on the safety of the vehicle and of infrastructure, ITS, the availability of emergency aid, the speed and coordination of intervention, the efficiency of first aid and rehabilitation (62). The "Policy Orientations" do not go into a lot of detail, instead commit to preparing a "global strategy of action to tackle serious injury and first aid (62)." The EC stress the need to progress on coming up with an EU common definition for serious injury and launched a public consultation in April 2012 on this topic that should provide input to the serious injury strategy itself (67).

England Health Strategy Include Road Safety Indicators

In England the government has decided to include the indicator 'Killed or seriously injured casualties on England's roads' for the objective 'Improving the wider determinants of health' in *A public health outcomes framework for England, 2013 – 2016(20)*. In addition an indicator on 'Hospital admissions caused by unintentional and deliberate injuries in under 18' draws attention to younger road users. Although this inclusion is fortunate, this comes about against the background of the lack of a numerical objective in the *Strategic Framework for Road Safety*, published in May 2011. The integration of road safety into health policy is also mirrored at a local level. In a survey of local authorities it was also found that road safety officers were being encouraged to work more with colleagues in public health (115). These connections will be particularly important as public health becomes more localised and whilst working towards the road safety indicators in *A public health outcomes framework for England, 2013 – 2016.*

2.3.3 The Costs of Road Traffic Deaths and Injuries

There is a strong business case to include the prevention of road traffic deaths and serious injury on the health agenda. When it comes to calculating costs, the recent EU Transport White Paper recognises that the social costs of road collisions will rise in the future. The increase in traffic would lead to an external cost of collisions of 60 billion Euro higher by 2050. Recent estimates undertaken by ETSC state that if no one had been killed nor seriously injured in 2010, the benefits to society would have been of the order of 105 billion euro (42). These estimates illustrate the continuing social and economic importance of working to reduce collisions, injuries and deaths on EU roads.

In addition to the 31,000 people killed in road collisions in the European Union in 2010, about 1,700,000 people are recorded as injured in police records each year, among them 300,000 seriously. Road deaths represent only the "tip of the iceberg" of traffic collisions. For every road death in the EU, at least 44 road injuries are recorded, of which 8 are categorised as "serious". For example in Ireland, most of our patients with road traffic collision related injuries are young males with traumatic brain injuries, traumatic spinal cord injuries and traumatic limb amputations. Of those with traumatic injuries, only approximately 10% will return to work, which has a devastating effect on the person and their extended

family (40). Involvement in road collisions is one of the leading causes of death and hospital admission for EU citizens under 45 years of age. Today, thanks to more protective vehicles, better emergency response and medical progress, many deaths are prevented but the survivors remain and many are seriously injured. European and national decision makers from both the health and transport should not neglect this less-publicised part of the real picture.

2.3.4 Alcohol and Health

One major issue straddling health and road safety is alcohol. Europe is the heaviest drinking region in the world, with a prevalence of heavy episodic drinking in excess of one fifth of the adult population (142). This represents a major challenge to health, not least as driving whilst impaired represents one of the largest road safety challenges resulting in death and serious injury. Drink driving is often a sign of an alcohol problem. Thus by treating drink driving one can also treat the broader problem and vice versa. Differences among countries have to be taken into consideration, with a European average of 9.24 litres of pure alcohol consumed per year. Data from the latest WHO Report on Alcohol and Health 2010 show that countries such as Malta, Norway and Sweden have a low level of alcohol consumption compared to Estonia, Czech Republic and Ireland (142). The European Commission estimates that across the EU at least 25% of all road deaths are alcohol related (28), against 11.5% according to official statistics (39).

2.3.5 EU Policy on Alcohol, Health and Drink Driving

The Road Safety "Policy Orientations" of the European Commission touch on drink driving but do not give it a big priority. The strategy placed an emphasis on enforcement of road users' behaviour, including drink driving, stressing the need to match strong penalties for drink driving with preventative measures. The Commission also committed to: "examine to what extent measures are appropriate for making the installation of alcohol interlock devices in vehicles compulsory, for example with respect to professional transport (e.g. school buses)" and to look at the possibility of making use of alcohol interlock devices mandatory in certain specific cases within the context of a new common road safety enforcement strategy. In an accompanying memo the Commission also stated that it would consider legislative measures to require mandatory use of alcohol interlocks for specific professional cases, such as school buses, or in the framework of rehabilitation programmes (for professional and non-professional drivers) after drink driving offences.

Drink driving features also within the EU's strategy on reducing alcohol related harm from DG Health and Consumers (55). The priorities identified in the Communication include "reducing injuries and deaths from alcohol-related road accidents". Concerning drink driving, the Strategy recommends introducing maximum BAC limits according to the above mentioned Recommendation (0,5 g/l and 0,2 g/l for professional and novice drivers). Moreover, DG Health and Consumers highlights the importance of effective enforcement of drink driving laws in order to substantially reduce road deaths. Thus, it recommends the introduction and enforcement of frequent and systematic random breath testing, supported by education and awareness campaigns involving all stakeholders. In the framework of the EU strategy there is also a Forum to tackle alcohol-related harm involving the Commission, businesses and NGOs (48).

2.3.6 Alcohol Interlocks as a Tool for Managing Health

Alcohol Interlocks can be considered an effective countermeasure in the fight against drink driving. They are a technology connected to the vehicle ignition system and require the driver to take a breath test in order to drive the car. If the driver is found with alcohol above the legal BAC limit the engine will not start. In many EU countries, technology is used on a voluntary basis in vehicles which are used for the transport of goods or passengers. The alcohol interlock is used as a quality assurance tool to comply with a company's alcohol and drugs policy. More and more countries in Europe are adopting legislation for the use of alcohol interlocks in rehabilitation programmes for first high-level offenders and recidivists as a substitute punishment of driving licence withdrawal (47).

As drink driving is often a precursor of alcohol problems, tackling drink driving within a rehabilitation programme can lead to wider benefits in relation to health (9). A study compared the costs of hospital care and sick leave/disability pensions between two groups of drink drive offenders. Researchers compared one group of offenders who participated in an alcohol interlock programme and a second group of offenders whose licences were revoked. The participants in the alcohol interlock programme had regular medical checkups. Those who did not change their alcohol habits were dismissed from the programme. Cost savings were substantial, average health care costs were 25% lower among participants of the alcohol interlock programme during the 2 year programme with savings increasing for those who completed the 2 year programme to 37% during the treatment and 20% during the post-treatment period. It was found that the positive health care effects were due to reduced alcohol consumption. The rate of individuals with harmful alcohol consumption after 12 months in the programme had been reduced to 14% compared to 68% at the start. This is an interesting example of how a road safety rehabilitation measure can also have positive health effects and financial savings for the health sector.

2.3.7 Road Safety, Health and Mobility Patterns

Another interrelated area of overlap between road safety and health is the increase of active transport modes. Active travel includes walking and cycling with a shift away from motorised transport with the aim of reversing the declining trend in physical activity (123). Action on obesity is included in the EU's Health Strategy, also as this can lead to other health problems such as diabetes. The European Commission's Health Strategy also points out the links to active transport and the need to promote physical exercise to tackle obesity. Based on the latest estimates in European Union countries, overweight affects 30-70% and obesity affects 10-30% of adults (143). Country estimates of 2008 revealed that approximately 35% of all people in the WHO European Region are insufficiently physically active (143). The EU has a strategy on Nutrition, Overweight and Obesity (56) which also highlights the need to promote physical exercise including active commuting. Studies from the UK and the USA already show that obesity reduces life expectancy and the impact may become greater in future given the increase in childhood obesity (116). As mentioned previously under the environment section there are risks associated with active transport such as walking and cycling. However the public health benefits of active transport are stronger then the risks incurred. For the individuals who shift from car to bicycle, it is estimated that beneficial effects of increased physical activity are substantially larger (3-14 months gained) than the potential mortality effect of increased inhaled air pollution doses (0.8-40 days lost) and the increase in traffic accidents (5-9 days lost) (82). Reluctance to take up these health promoting and sustainable forms of transport is one element of the obesogenic environment (114). Encouraging cycling and walking to work can also be part of workplace health promotion covered in section 2.1.

Liverpool – Public Health Budget Invested in 20mph Zones

In Liverpool, the local National Health Service (NHS) trust will invest £665,000 over four years to implement and study an extension of the city's 20mph limits to a majority of streets (97). One of the aims is to improve road safety says a local Liverpool City Councillor: "This is a really important project, which we believe will bring massive benefits to our city. It will make our roads safer, potentially saving hundreds of lives, and it could present a saving to society of over £5million a year". As well as providing road safety improvements, the plans would also bring benefits to local people's health, through the promotion of safe walking and cycling.
The majority of pedestrian accidents in Liverpool occur in built-up areas, and hospital admissions caused by road traffic injuries are higher in more deprived areas of the city. From 2013, local authorities who are responsible for road safety, will take on larger responsibilities for public health in England. The idea is that lowering road speeds may cut the NHS bill for treating crash victims, and also combat obesity by encouraging more walking and cycling. Due to the increased health benefits of walking and cycling, public health funds could be invested in providing safe walking and cycling infrastructure such as in the presented cases. Every transport and land use decision could include a 'health check' which would entail looking at the potential impact on levels of walking and cycling and other aspects of health including road safety and air pollution (123).

2.3.8 Safer at which price? The issue of mobility

Concerns over children's safety and security have contributed to the increase in the number of parents using cars to take their children to school. By driving cars to school, traffic increases, which reduces pedestrian and cyclist child safety and the quality of life of children. This in turn means more parents are inclined to use a car to take their children to school and thus the negative spiral continues (76). Concerns for the health of children, increased socialisation and a way to tackling child obesity would be counter arguments. In addition, walking and cycling to school increases children's appreciation of road dangers and further assists in the development of key skills which are important for future independence (11). In many countries, child casualties are going down not because of improved safety but rather due to reduced exposure to risk as they are driven to school and spend less time out on the streets playing. Cycling and walking should instead be encouraged but of course this should be made safe.

Safe routes to schools

Safe routes to schools programmes aim at encouraging and enabling more children to walk and bike to school safely. Implemented in numerous countries and cities, these community-based road safety programmes usually involve school jurisdictions, teachers, pupils, parents, local police, the municipality and local road operators.

For example, the Safe route to school programme of the Barcelona City Council involves the school community, the Municipal Institute of Education (IMEB), the Guardia Urbana and the City Council's Department of Mobility. All actors involved regularly meet to analyse the situation and decide upon next actions (traffic calming measures, extension of 30 km/h limits, infrastructure improvements, etc). The Safe routes to school programme in Riga also gathered recommendations about how to teach traffic rules and guidelines for teaching staff and produced a traffic safety handbook with the help of EU funding.

Part 3

The next part of this paper will cover other issues, giving a shorter overview these include trade and procurement, police and justice, liveable cities, accessibility in transport, development co-operation, equity and tourism. These issues represent a second tier of areas where there are clear links between road safety and other related policy areas. Each of these sections will come up with possible synergies and tensions faced in factoring in road safety into their work area.

3.1 Market for Safety

Including the safety performance of vehicles in purchasing criteria has dual advantages for both the producer through business and for the buyer in terms of increased safety. Vehicles have a critical role to play in influencing road safety and choices in this regard offer opportunities. The EU has a role to play in developing a 'market for safety'. This can be understood as where safety is a clear choice in vehicle purchasing with demand and supply responding in the market.

Vehicle passive safety has improved considerably over the past decade due in part to increased minimum standards laid down by EU type approval regulations and also by car manufacturers' efforts to meet consumer demands for safer cars. Improved vehicle safety has been demonstrated to make a large contribution to casualty reduction. Yet, European citizens do not benefit equally from these improvements. Safety levels of new cars sold are notably lower in some European countries than others. According to the European car manufacturers association (ACEA), the average age of cars is 8 years in the EU-15 and up to 15 years in Latvia, 11 years in Slovakia and down to 7 years in the UK (2). To date, no specific studies have been carried out to identify the causes of the differences in safety levels of average new cars sold in different countries, but they are likely to follow from a combination of factors. These include differences in national market characteristics such as purchasing power, tax levels, availability of models, or cultural and mobility patterns. Consolidating the internal market for safety will have to be an important cornerstone of achieving the new EU's 2020 road safety target.

The EU has the reputation as the home of the safest vehicles now and in the future. It should continue to aim high and raise the EU common minimum standards on safety and prioritise proven life-saving technologies. All cars produced in the EU or imported into the EU have first to meet EU common minimum standards laid down by EU type approval regulations. Those regulations cover general safety of vehicles, availability of seat belts and head restraints, tires, pedestrian protection, side and frontal impact protection.

Robust in-vehicle safety technologies should be mandated in new legislation (as has been the case for ESC). This would prevent that such safety technologies are sold as standard in one EU country and not as optional equipment in another. For all other safety equipment, the EU needs to promote their standard fitment across the EU and address the differences observed in safety levels. Demonstration activities and wider support are needed to promote consumer demand and reduce production costs.

3.1.2 Guiding Choice of Vehicles: EuroNCAP

Influencing the consumer to purchase safe cars and safety technologies is an important element of road safety. The European New Car Assessment Programme (EuroNCAP) tests the collision worthiness of new cars with respect to front and side impacts, pedestrian and child safety. According to a study the risk of

severe or fatal injuries is reduced by approximately 12% for each EuroNCAP star rating (94). When EuroNCAP started to test the crash performance of cars fifteen years ago, the average car was awarded 2 stars for occupant protection. Now almost all cars tested are awarded 5 stars for combined occupant and pedestrian protection. This is a prime example of how a consumer information programme can raise standards in an area in this case safety and contribute to building a “market for safety”.

3.1.3 Large Purchasing Power: Procurement

Non-private customers, such as governmental bodies and local authorities can through their public procurement policies play an important role by including specific requirements on minimum safety levels in their vehicle purchase and leasing policies. Each year European public authorities spend the equivalent of 16% of the EU Gross Domestic Product in total. This includes a number of different items amongst others transport vehicles and transport services (58). The EU action seeks to create a European area for public procurement in the context of the internal market. It has adopted legislation (22) including criteria for green public procurement. With the rationale that: “public procurement can shape production and consumption trends and a significant demand from public authorities for "greener" goods will create or enlarge markets for environmentally friendly products and services”. Also that: “by doing so, it will provide incentives for companies to develop environmental technologies (58).” Green public procurement can be a major driver for innovation, providing industry with real incentives for developing green products and services – particularly in sectors where public purchasers represent a large share of the market (e.g. construction, health services, or public transport) (63). This legislation should be updated to include safety which would result in a real boost for safety in public procurement as well as promoting innovation in the area of safety technology and vehicle standards. Government fleets also make up large percentages of vehicle purchases and journeys. Thus the purchasers of these cars have a large bargaining power when it comes to including certain criteria such as safety.

Swedish Road Administration’s Safety Requirements for Vehicles

The Swedish Transport Administration, a government body, is leading the way in terms of improving vehicle safety by passing a law (124) that has set high vehicle requirement standards for government fleets. Recommended minimum traffic safety requirements have been developed, not only for government owned vehicles but also for lease vehicles, short-term rental vehicles and private vehicles used for work purposes. The law, passed in 2009, requires all government bodies to buy or rent only 5-star Euro NCAP cars for occupant protection (“government specification” as is the case for environment standards). The levels of safety requirements increase with length of time a vehicle is used for. It is recognised that the highest Euro NCAP standards should be aimed for and this is a moving target with room for continual technological improvements. Due to the requirement to rent only 5-star Euro NCAP cars for occupant protection (“government specification” as is the case for environment standards), this has had another overspill effect as rental companies, such as Hertz, Avis and Europcar, are upgrading their whole fleet to offer ‘SRA recommended cars’ to all their customers (40).

In the private sector, companies can include safety in their vehicle purchasing criteria as well. In doing so, companies contribute to the market penetration of safer cars by supporting the demand for such vehicles and for safety technologies, which hopefully in turn help lower the price of safety technologies. Company car registrations account for 50.5% of the 11.6 million passenger cars registered across 18 EU

Member States in 2008[4]. Indeed private sector actions can help protect not only professional drivers but all road users. Innovations in vehicle safety equipment are developed and hit the markets at a very fast pace (sometimes much faster than the time it takes to legislate on their use) and fleet vehicles are most often the quickest route to get vehicles fitted with such innovations. There is a relatively quick turnover of fleet vehicles, which ensures that these safety features can soon be passed on to private vehicle drivers (83). Large fleet operating organisations can literally influence the market by using their strong purchasing/consumer power and dictate what sort of vehicles and equipment hit the market. For example, in the UK Ford changed their Transit van to meet some requirements of one of their big customers: British Telecom. The vehicle industry has already started responding by marketing vehicles such as the "safety van" which includes the latest safety features in their state of art vehicles (99). This is another example of a useful synergy that has come about as a result of integrating safety into, in this case purchasing policies.

3.1.4 Integrating Safety in the Supply Chain

Including safety in public and private procurement should be extended beyond vehicle safety to include safety as criteria for contracts. This can have further safety benefits. But by integrating this requirement there are other benefits such as in saving time and becoming more efficient. Large employers either public or private can influence policies in Small and Medium Enterprises (SMEs) when they subcontract out work further along the supply chain by insisting that subcontractors adopt the same conditions and standards in relation to driving for work (41). Large employers should be encouraged to share their good practice with smaller companies who may not have the facility of human resource management found in many larger companies (45).' Liability responsibility and appropriate risk management and preventative measures must be extended through the supply chain (45).

Systole

In Sweden, in 2008 five major buyers of transport and the Swedish Road Administration, developed a tender tool called 'Systole' that provides a meeting place for goods owners and transportation companies that value sustainability and safety. This provides for ongoing dialogue during contracts and allows hauliers to support the company with solutions. The tool allows for the 'live' evaluation of hauliers and for communication of long term requirements. The goal orientation safety requirements includes for example one of the key road risk factors "speed" as specific criteria and gives it the highest priority. The goal is that 'speed should be adapted to prevailing circumstances and never exceed the relevant regulations.' To achieve this goal 7 requirements are set out which include developing procedures for planning and scheduling that take into account speed limits and traffic conditions, developing procedures for monitoring and reporting on this, having technical support for keeping to the speed limit on all vehicles and technical support for follow-ups of exceeding the speed limit on vehicles (119).

ISO International Standard 39001 Road Traffic Safety Management System

A new ISO international standard 39001 for road safety management (due to be published in December

[4] However, the share of company cars in total registrations varies between countries. It is lowest in Greece (24%), highest in Germany (60%).

2012) will provide a useful framework on continual improvement in road safety. This new ISO Standard adopts a similar approach to other existing ISO Standard on environment management systems 14001. It can be adopted by a public authority or company but it can also be used to cover transport services contracted in the supply chain. Any player with an influence on road safety should be able to use the standard as guidance in its efforts of contributing to safe road traffic. ISO management systems are based on the Plan-Do-Check-Act methodology which is a cyclical approach involving several steps and requires strong leadership and commitment from top management (90). A management system is defined as "a set of integrated or interacting elements of an organisation to establish policies and objectives and processes to achieve those objectives (90)."

3.2 EU Global Trading Block

The EU is the world's largest producer of motor vehicles with a 25% share of global production (71). Global production of vehicles is broadly shared between Europe, the Asia-Pacific region and North America. The European automotive industry[5] is a key sector for the European economy, providing a contribution to the EU trade balance of around €70 billion (12). It is an important source of employment in the European economy, providing over 12 million jobs (12). It directly employs over 2 million people, and indirectly supports about 10 million jobs in other industries. The health of the sector affects roughly 8% of the EU's active workforce (71). EU exports of motor cars reached €76 billion in 2010, with a 58% increase over 2009 (13). Total automotive exports (including also buses, trucks, components, etc.) represent about 10% of the value of total EU exports. Total EU automotives exports in 2010 totalled €132 billion with imports at €47 billion (13). The main five regions vis-à-vis which the EU has a surplus are the NAFTA and EFTA countries, China, the Russian Federation and the Middle East. The European vehicle industry faces a time of crisis within Europe with mature markets and an economic crisis. The EU market for new passenger cars declined by 5.5% in 2010 (13.3 million units registered), due to the ending of government fleet renewal schemes in many EU countries (71). Even so it represents a home market of 500 million consumers with a relatively high income. While the European market has a low-growth perspective, third markets are growing fast with the global economic recovery, changing the trade flows and the automotive value chain (12).

The long term global outlook for the automotive industry is promising: world-wide new car sales, for example, are projected to increase by more than 10% in 2020, when compared to 2008, mainly as a result of the motorisation of emerging markets (12). This makes Free Trade Agreements to improve market access in third countries even more important as the economic value of these markets for the competitiveness of the EU automotive industry increases. It is important here to safeguard safety within the trade negotiations governing both imports and exports to Europe. However, it is not yet clear to what extent the growth in such emerging markets will be addressed primarily by European exports or by production established through foreign direct investment into the new markets. Beating off the international competition will be a challenge but the automotive industry can further develop its safety credentials. It can demonstrate global technological leadership by profiling itself as the producers of the world's safest vehicles and placing itself at the forefront of cutting edge technology.

Car industry policies increasingly promote safety as a marketable commodity (29). Volvo was the first to adopt a Vision Zero first that no one should be killed in a Volvo, this was swiftly changed to include

[5] Here the term automotive industry, is meant to cover the entire supply chain, covering vehicle manufacturers, suppliers, distribution and after-market services.

external road users so that no one should be killed either in or by a Volvo and included the target date of 2020 (136). Toyota has also adopted a Vision 0 and is aiming: “for the complete elimination of traffic deaths and injuries (134)” but has not set a target date. Another example comes from Nissan who as far back in 2004 adopted a vision zero, more precisely that: “the goal of which is to reduce the number of fatal accidents to zero.” They are using as a reference point, the number of such accidents in 1995 that involved Nissan vehicles and have set a series of milestones, including cutting the 1995 fatal accident figure in half by 2015 (108). These examples further show that some vehicle manufacturers do see safety as important; also as they see that their consumers rate it highly when purchasing a new car.

Exporting the Vision Zero-for Safety and for Trade

The Vision Zero Initiative is a network of Swedish companies and organizations, which was founded on the initiative of the Swedish Government and Swedish industry in 2010. The Vision Zero Initiative (137) is administrated by The Swedish Trade Council, with offices in more than 60 countries. The role of the Vision Zero Academy is to generate knowledge-based policy advice for stakeholders in different countries on innovation and implementation of traffic safety management systems, services and technologies. Located in Gothenburg, the Vision Zero Academy also focuses on professional training, research and development, traffic safety management and safety performance factors. This is an example of a country actively exporting not only safe vehicles but the entire concept of safety which for Sweden is Vision Zero and can be defined as: “No one should die or suffer serious injury in traffic. We place the main burden for safety on system design because we recognise human weaknesses and low tolerance to mechanical force (138).” The Vision Zero was first conceived in 1994 and in 1997 the Parliament passed a Road Traffic Safety Bill that wrote the Vision Zero into Swedish law. Since then, the Swedish Trade Council together with its partners have taken this message around the world as part of an effort to “export” vision zero together with the business and trade opportunities it offers to Swedish companies abroad. A starting point was to organise high-level workshops to create a political base in selected countries. For example in November 2010 a 3 day business seminar was organized in Malaysia with the aim of provide the Swedish industry access to interesting business opportunities in Southeast Asia and to give decision makers in the region access to the latest technology with the field of road safety (139).

3.3 Research, Development and Safety

The EU is seen as a centre of excellence and innovation in research and development in the area of vehicle safety. Effective vehicle safety design result relies upon continuing research and development, understanding of the source and mechanism of injury protection in a range of crash conditions, regular monitoring of performance in real world conditions, and confirmation that new technologies are used and accepted (29). Research and development is supported by the spending from public authorities: regions, Member States and the EU. Road safety research should continue to benefit from this public funding. There is a strong need to ensure the dissemination of knowledge about successful measures and research results among decision makers and practitioners. At present the automotive industry itself is a key driver of knowledge and innovation. It represents Europe's largest private investor in research and development. The EU automotive industry was the biggest investor in R&D in 2009 (€ 28bn/year), followed by Japan and the US, making the sector the largest private Research and Development investor in absolute terms (12). Taking into account the importance of the sector for the EU economy, research and development of safety topics should continue as this investment sustains this important competitive advantage.

3.4 Roads Policing: Road Safety and Fighting Crime

Looking at another spectrum of road safety policy; policing. Enforcement is a means to prevent collisions from happening by way of persuading drivers to comply with the safety rules. In addition, it can bring benefits to reaching law and order aims as well. It is based on giving drivers the feeling that they run too high a risk of being caught when breaking the rules. Effective enforcement leads to a rapid reduction in deaths and injuries. Moreover, sustained intensive enforcement that is well explained and publicised also has a long-lasting effect on driver behaviour. Undertaking enforcement work can also work to deter and detect criminal activities. "Denying the criminals the use of the road" is a phrase first coined in the UK but has now been used in other Member States. The idea behind this approach is that as most criminals need to use the road through proactive roads policing the presence of Police can deter criminality and also uncover it during other traffic law checks. One recent Europe wide TISPOL week long seat belt check during March 2012 resulted in 125,000 seat belt offences but also uncovered 3256 criminal offences including fire arms, stolen goods, drugs, illegal immigration and for human trafficking (129).

At a European level, there has been progress in this area in the past decade. In November 2011 legislation was adopted by the EU to enforce traffic laws across Europe. This new EU Directive builds on previous action in this area. In 2004, European Commission adopted a Recommendation on Enforcement in the field of road safety (54). In the Recommendation Member States are asked to apply in a national enforcement plan what is known to be best practice in the enforcement of speed, alcohol and seat belt legislation. The European Commission Road Safety Policy Orientations include an objective on enforcement and foresee the development of a road safety enforcement strategy. On the Justice side, in 2008 the Police Co-operation Working Party adopted Council Conclusions on road safety (19). They affirmed their commitment to reducing road traffic deaths on Europe's roads and identified some common areas of action such as promoting exchanges between national contact points and combating trans-national illegal races of motor vehicles on European public roads on the basis of gathered intelligence and improved mechanisms for operational police coordination in this field. Special meetings to discuss road safety amongst the Law Enforcement Council Working Group[6] are ongoing.

TISPOL, the European Traffic Police Network Organisation has been established by the traffic police forces of Europe in order to improve road safety and law enforcement on the roads of Europe. Their main priority is to reduce the number of people being killed and seriously injured on Europe's roads. "Enforcement of traffic law and education, where appropriate, will make a significant contribution to reducing the carnage on our roads. This is evident in a number of TISPOL member countries (127)." Since their creation in 2000 their activities have expanded to cover roads policing aimed at reducing crime on the roads such as illegal immigration, human trafficking, drugs, transport of stolen goods and so on. They cite strong evidence that those engaged in criminal activities are involved in fatal and serious injury crashes (128).

New Roads Policing Strategy – England and Wales

In 2011 the Association of Chief Police Officers adopted its new Roads Policing Strategy for England and

[6] The Police Co-operation Working Party was renamed after the Lisbon Treaty to the Law Enforcement Working Party.

Wales. This included a continued emphasis on reaching two aims safer roads and combating crime. “Proactive road policing can deny criminals the unchallenged use of the roads, and is an effective measure for preventing and detecting crime (3).” It includes a section on terrorism stating that: “The roadside encounter presents essential intelligence gathering opportunities and the potential for stopping and disrupting terrorist activity by road policing officers (3).”

Mass Breath Testing in Finland

Enforcement of breath testing can be undertaken in a way whereby all drivers that go through a check point are breathalysed. This type of screening can include the detection of other non road safety offence related activities. In Finland, so-called blanket testing was introduced in 1977 whereby a whole road is blocked off and everyone is tested. Communication with the media and publicising the results of the activities are an integral part of this traffic control. The main aim is to vary time and place and ensure that drivers are aware that they may be tested anytime or anywhere. The number of roadside police checks for alcohol per 1000 inhabitants is the highest in Finland, where no less than 385, drivers per 1,000 population were checked in 2008 (46). Just as with other mass checks these sometimes uncover other criminal activity.

3.5 Liveable Cities: Urban mobility and the sustainable modes

Transport safety is an essential component of sustainable urban mobility and should be firmly integrated into the mobility planning processes by cities. In attempting to secure change in urban mobility patterns, road safety can be regarded as a critical challenge, largely because of the social and economic cost of road collisions. As such, safety should be tackled at all levels of mobility planning. Real and perceived safety can have a profound effect on modal choice especially in terms of the most sustainable modes of travel - walking and cycling and ability to access public transport. At the European level the White Paper includes Urban Mobility Plans within its list of initiatives. Addressing urban transport at this level is a relatively recent development. Safety should be integrated not only into the development of Urban Mobility Plans but into proposed Urban Mobility Audits and Guidelines and be reflected in common targets.

In developing policies a useful approach may be to adopt a clear hierarchy of transport users, with pedestrians, cyclists and public transport users at the top of the hierarchy. As a general principle, these users should have their safety and convenience needs considered first. It is most important that the hierarchy is applied where a large share of travel is (or could be) made by walking, cycling and public transport. A higher share of travel by collective transport, combined with minimum service obligations, will allow increasing the density and frequency of service, thereby generating a virtuous circle for public transport modes. This is in fact another important synergy across the environmental and road safety policy areas. While collective transport minimizes negative environmental effects, the core public transport modes (bus and rail) are the safest modes of transport. Trips by public transport, including walking or cycling to and from access points are collectively safer than car trips (30).

30 km/h in Graz

The introduction of 30km/h zones in cities has had multiple benefits. For safety it reduces speeds and thus increases safety of vulnerable road users and car passengers. For the environment it brings reduced

CO2 and reductions in noise pollution. Graz in Austria has provided Europe with a source of inspiration in this area but also a process that has been watched carefully and lessons have been drawn from their experience. Graz was the first city in Europe to introduce a 30km/ speed limit for all roads in the urban area, apart from the through roads (25). Following a successful pilot which was accompanied by research they introduced the scheme more broadly across the city. The introduction was accompanied by an information campaign, signage, infrastructure measures, speed enforcement and changes to the parking regime. The campaign part pulled in different decision makers and multipliers, such as the church to support the decision. At the start in areas where the new speed limit was introduced both the frequency and seriousness of collisions were reduced by approximately 25%. However, they do cite that this number then again began to rise once enforcement slackened off. There was an improved quality of life due to lower noise levels, pollution and more soft modes.

3.6 Accessibility

The negative impacts of road transport can have a significant impact on overall quality of life in cities and in rural areas and are many and varied. Such impacts include collisions resulting deaths and injuries and reduced access to services and opportunities as a result of perceived or real road risk. Furthermore, studies have suggested a clear relationship between traffic volume and quality of life, including the amount of social interaction with neighbours (122). Increased mobility does not necessarily increase quality of life, for example driving can reduce interaction at a local level. Such impacts can contribute to social exclusion and deprivation.

The demand for transport is a 'derived' demand meaning that people travel, not for the sake of travel itself but, in order to reach services or opportunities which they desire or need including employment, education, health care and leisure facilities. As such, accessibility can have a major impact on overall quality of life and life chances. Mobility can be defined as the amount of travel undertaken and is different to accessibility, which can be defined as the amount of opportunities reached (104). Halden et al defined accessibility from two view points: 'origin accessibility' which is 'about the ease with which any individual or group of people can reach an opportunity' and 'destination accessibility' or the ease with which a given destination can be reached from a given origin or set of origins (81). This also includes new possibilities of 'virtual' travel using technology and telecommunications to connect people and places. Considering transport in such a way means that the concepts of reliability and flexibility are important considerations alongside simple journey time.

An evaluation of the accessibility of a location or for a group of people should include an evaluation of safety levels. Measures to improve road safety contribute to accessibility by removing some of the barriers which stop people from accessing local services e.g. reducing vehicles speeds and improving conditions for vulnerable road users will reduce severance caused by busy roads. Improving accessibility can contribute to improved road safety by reducing the need to travel, the distance travelled to access opportunities and modal choice.

3.6.1 Removing barriers to increase accessibility

Improving the walking environment, providing traffic calming and reducing speeds can all contribute to increased accessibility. Furthermore, urban realm improvements such as providing adequate lighting, using high quality materials in footway construction and minimising visual and physical obstructions

from unnecessary or inappropriately placed street furniture can reduce risk for pedestrians. Improving pedestrian and cycling provision is discussed further in Section 1.3 of this report.

3.6.2 Information and Journey Planning

Helping people know and understand the travel options available to them is part of accessibility planning. Safety should be an integral consideration in this regard. In understanding travel options people should be educated about the safety risks and opportunities and provided with advice on how to make their journeys safer.

This includes better travel information provision, assistance with travel planning (individually, for households, work places, other key destinations/origins). 'A travel plan is a package of practical measures to reduce the cost and environmental impact of work-related travel by offering staff realistic and cost-effective alternatives to their car (Derbyshire 2008). Travel plans promote flexible and sustainable transport solutions, such as car share schemes, working from home and cycle facilities, tailored to businesses' individual needs but they are not anti car. A travel plan is about encouraging people to use cars more wisely and offering them better alternative travel choices. Travel plans should include the encouragement of safe and fuel efficient modes of transport (38).' In this regard the travel planning process can offer people more comprehensive and reliable information about the alternative choices available to them for example reliable bus route maps and timetables, maps of cycling facilities such as cycle lanes and bike parking and good quality pedestrian linkages. Travel behaviour can be influenced by new ITS applications that mainly provide the traveller with a better basis for decisions in terms of traffic and travel information. Journey planning should focus on identifying the safest most sustainable mode of travel as well as the safest, most efficient route. This would include the identification of and dissemination of information on safe and direct routes for pedestrians and cyclists as alternatives to short car trips.

3.7 Equity

In 2004 the Report on Road Traffic Injury Prevention the WHO stated that: "Road crash injury is a social equity issue – equal protection to all road users should be aimed for since non-motor vehicle users bear a disproportionate share of road injury and risk (140)." This was part of a new understanding of road safety included in their "road safety paradigm shift". At present transport as other areas suffers from levels of inequality this can be understood as different road user groups not being served with the same equal access to safety as others. Disadvantaged groups include for example the elderly, children, young people, those on low incomes, people with mobility issues, vulnerable road users including pedestrians, cyclists and powered two wheelers. Studies show that motor vehicle crashes have a disproportionate impact on the poor and vulnerable in society (140), (32). The WHO argues that equal protection for all road users in transport policy should be a guiding rule, to avoid an unfair burden of injury and death for poorer people and vulnerable road users (32). Measures to improve road safety should be linked to other actions to combat these inequalities. Some of which are elaborated below.

Inequality in health has been recognised by EU governments as a leading cause of premature death and disability and that action has to be taken at a national level (18). Introducing equity orientated policies and interventions should be targeted at narrowing the safety divide through action targeted at reducing the exposure to, risk of and consequences of injury for less affluent people or neighbourhoods (32). This includes taking action in areas such have been covered above introducing traffic calming measures,

integrating these considerations into land use planning to reduce risk and the resulting death and injury. Alongside tax rebates, social marketing to low-income households or other means tested measures governments should choose to legislate and enforce the most important safety measures. The WHO identifies here the example of imposing certain safe behaviours such as wearing seat belts or motorcycle helmets for all (141). "Safety for all" Strategies such as traffic calming, improved public transport and improved recreation areas will help to reduce injuries among people with low income and other population groups as well (141).

3.7.1 Children

Evidence from studies conducted in Europe and elsewhere on children and young people shows that low socioeconomic status increases the risk of being injured in road traffic for both fatal and non-fatal injuries (141). Even in high-income countries, poor children are at greater risk than children from more prosperous families (141). A study in the United Kingdom reported that pedestrians and cyclists among deprived children have a much higher risk, with mortality rates more than 20 times higher among children of unemployed parents versus children of parents with the highest occupational status (24).

Purchasing of safety equipment such as the correct child safety restraints can be difficult for low income households, even though these are now required by law across the EU. There are different examples of programmes which have introduced free or discounted child safety restraints (6).

Effects of Traffic Calming on Inequalities in Child Pedestrian Risk

Jones et al (2005) have studied the effects of traffic calming on inequalities in child pedestrian risk. In city A, the child pedestrian injury rate ratio (injured children per 1,000) between the most deprived and the most affluent part of the city was 3.21 before traffic calming. Traffic calming was introduced, and the most deprived part of the city benefited from 4.80 times as many traffic calming features (speed humps, etc.) as the most affluent part. Following traffic calming, the injury rate ratio was reduced to 2.01. In city B, the child pedestrian injury rate ratio of most deprived area to most affluent area was 4.27 before traffic calming. After traffic calming, it was reduced to 3.96. In city B, however, the most deprived area received only 1.88 as many traffic calming features as the most affluent area. The study suggests that: (1) Social disparities in child pedestrian risk can be reduced by means of traffic calming, and (2) The more strongly traffic calming is concentrated in the deprived areas, the greater is the reduction of the social disparities in risk (91).

3.7.2 Disadvantage in Old Age

The European Commission recognizes "an aged society will demand transport services that are safe, secure, comfortable and user-friendly (62)." While older people account for one sixth of the European population, every fifth person killed in road traffic is aged 65 or over (33). Moreover, due to population ageing, older people will represent an increasing share of the total population. This could have a negative impact on road safety development in the future. If the risk rates of older people and others decline at the same pace, by 2050 one death out of three is likely to be an elderly person. Providing safe mobility to senior citizens deserves special attention and requires a re-think of policies and strategies related to transport and health.

Poverty affects old people, with 22% of elderly people being categorised of being 'at-risk-of-poverty' with a higher number of elderly women being included (60). The importance of independence and mobility is an important part of healthy ageing and staying active. Driving can maximise this mobility and enables this independent mobility. However poverty affects mobility choices including the dilemma of keeping a car and continuing to drive. In Wales, organisations have come up with the concept of "transport poverty" and are seeking official recognition. Modelled on 'fuel poverty' this is when people with low incomes, including old people spending a certain percentage of their income on their cars (115). One of the costs that rise with age is insurance which can increase dramatically with age. Pay-as-you-drive could be adapted for older people introducing restrictions linked to journeys that carry higher risks. One the decision has been made to give up driving, old people are then reliant on friends and family and public transport and getting around on foot which may be complementary. Again, poverty here may play a role in influencing modal choice and it is crucial that measures are taken which support safe modal choices. A recent EU project AENEAS (Attaining Energy Efficient Mobility in Old Age) took up this topic and aimed to improve attractiveness of sustainable transport for older people in different European cities. This of course can have advantages for safety, as discussed previously but accessibility to information and journey planning needs to be taken into account.

Smart Mobile Senior Citizens, Flanders, Belgium

"Smart Mobile Senior Citizens" engaged senior citizens throughout the Flemish Region to get to know sustainable transport modes in real life and increase their use. The project initiator has been a Belgium NGO called Mobiel 21, which for the implementation closely co-operated with municipalities and organisations of senior citizens. An important element is the self-activation of the older people, meaning that senior organisations take the lead in implementing the local actions. Since 2009, 12 municipalities have participated (7).

3.8 International cooperation with EU Neighborhood Countries and Third Countries

The next section looks at the EU's external dimension. Globally, each year nearly 1.3 million people die as a result of a road traffic collision. Ninety percent of road deaths occur in low- and middle-income countries, which claim less than half the world's registered vehicle fleet. The EU is the biggest humanitarian aid donor worldwide and provides half of all international development aid. The objective of EU development policy is to eradicate poverty in the context of sustainable development, including the achievement of the Millennium Development Goals. The EU's funding instruments include: bilateral agreements (Partnership Agreements), the instrument for pre-accession assistance, the European Neighbourhood Instrument, the Development Co-operation Instrument and the European Development Fund. As the world's biggest aid donor, the EU should ensure that EU road safety policy objectives apply to external programming. At present road safety is not formally integrated into approaches or instruments on institutional strengthening in the transport or health sectors. Yet the EU is funding road crash injury prevention programmes abroad through several of the aforementioned instruments. The White Paper states that "transport is fundamentally international and because of this, most actions in the Road Map are linked to challenges related to the development of transport beyond the EU borders". At present road safety is not a policy or programmatic priority for DG Enlargement, EuropeAid or for the European Investment Bank. However, Member States unanimously supported UN resolution A/64/266 on improving the global road safety crisis, which proclaims 2011-2020 as the Decade of Action for Road Safety. This provides a further framework for actors from around the world to engage in this topic.

Certainly the EU has a role to include road safety in its relations with its close and even more distant neighbours when it comes to co-operating on transport.

The European Neighbourhood Policy was developed in 2004, with the objective of avoiding the emergence of new dividing lines between the enlarged EU and our neighbours and instead strengthening the prosperity, stability and security of all concerned. This policy is supported by a funding instrument: the European Neighbourhood Partnership Instrument. The EU's TEN-T policy also covers looking to improve the most important transport axes for international trade between the EU and the neighbouring countries and beyond. Here programmes could include funding for road safety including institution strengthening, legislative reviews, capacity building for professionals including the traffic police, social marketing campaigns. Moreover, once a twinning programme on road safety has been completed any new EU funds could be made dependent on the implementation of the national road safety plan. More broadly speaking, mechanisms to extend the EU's Road Safety Policy Orientations to the neighbourhood countries could also be sought.

The EU's national governments have substantial development and co-operation budgets. Different development agencies from the EU have undertaken road safety related projects within their field of activity in transport. Road safety is not formally recognised as a separate category and is usually seen as a small part of the road transport sector. The total amount of bilateral aid specifically for global road safety probably amounts to less than $10 million a year (16). Other Member States such as Sweden and the UK have recently dropped road safety from their priority areas for development even though these include "health" and "sustainable development" transport and road safety is no longer present. This follows years of work in this area.

EU Twinning Egypt

The EU supported a twinning project with Egypt on enhancing road safety for two and a half years with experts from Germany and Austria (8). The specific aims of the project were threefold: to co-ordinate national road safety activities and legislative reform, support the institutional capacity of the General Roads Authority in the Egyptian Ministry of Transport and upgrade the road safety management system. The twinning involved around 30 experts from the EU and the Egyptian National Road Safety Board. Amongst the achievements were training for Egyptian infrastructure experts and police in state of art EU road safety knowledge. New proposals were made to revise key road safety related laws such as the Public Roads Law and traffic law. Proposals were made to introduce new standards and regulations on safe infrastructure management including road safety audits, traffic calming (in view of protecting vulnerable road users) and safety in traffic works zones. Other new areas of work include institutionalising co-operation between NGOs and the different sub-committees of the National Road Safety Board. Another output was the training of 150 police officers and engineers in accident reporting and accident investigations using special guidance which has been developed for Egypt. In future they will use the Geographical In-formation System (GIS) for the exact localisation of the accidents and for defining a unique accident identification number. A special fund of the EU has allowed the piloting of the hard and software in 2011.

National Example-Spain-Argentina and Beyond

Twinning between governments has been organised within the context of IRTAD (International Traffic Safety Data and Analysis Group) (89). Here low and middle income countries are twinned with an

existing IRTAD member and a "new" country. The aim is to set up or improve safety data collection and analysis systems and thus integrate the new countries into the group. This is achieved through visits of experts between the two participating countries, formulation of recommendation for data collection and analysis improvement and participation in IRTAD meetings. This work is financed mainly through the World Bank Global Road Safety Facility. One of the twinning projects is between (Dirección General del Trafico of Spain) and Argentina and was started in April 2010. This Programme is part of a broader project financed by the World Bank Global Road Safety Facility. The IRTAD twinning is focusing on developing a Road Safety Monitoring and Evaluation System within the National Road Safety Observatory of the Argentinean Road Safety Agency. One of the results so far is the development of a standardized police form. This form is now already adopted in all provinces in Argentina. For the first time, in 2011, police in all provinces will record the same accident data, which will allow sharper analysis by the National Road Safety Observatory. This co-operation has led to greater interest in the Latin American and Caribbean region to create broader co-operation and has led 18 countries to create the Ibero-American Road Safety Observatory.

3.9 Tourism

Within the EU, travelling on holiday is an obvious area to find synergies between road safety and tourism policy. Links are already there at European and at national level but these can be built upon and improved. At present the EU tourism industry generates more than 5% of the EU GDP, with about 1,8 million enterprises employing around 5,2% of the total labour force (approximately 9,7 million jobs)[7]. Per country share of GDP ranges from example in Cyprus 9.5%, Greece 4.2%, Spain 3,8%, Sweden 2.4%, UK 1.4% (78). When taking into account the size of the labour market, the largest shares employed in the horeca (hotel, restaurant and catering) sector were found in Malta (7.9%), Spain (7.4%), Cyprus (7.3%), Greece (6.9%) and Ireland (6.5%) (17). Europe remains the world's number one tourist destination with 370 million international tourist arrivals in 2008, or 40% of arrivals around the world (61). The EU's last tourism strategy was adopted in 2010 and it aims to: 'encourage a coordinated approach for initiatives linked to tourism and define a new framework for action to increase its competitiveness and its capacity for sustainable growth'. The Strategy did recognise that tourism policy is transverse in its nature and included the need to look at travel as a priority. 'This is particularly true of transport policy (sustainable mobility, passenger rights and safety and transport quality) (61).' The EU has a developed system to protect passengers and consumers, including those with disabilities or reduced mobility, on all means of transport under its passenger rights initiative (70). The headline Tourism Strategy of the EC doesn't yet include mechanisms for preventing loss of life and serious injury within the context of tourism and European citizens or others taking a holiday.

3.9.1 Information about Modal Choice and Risk

There are numerous possibilities for taking action to improve the safety of holiday makers and integrating road safety concerns into tourism policy. The most important one is enabling tourists to make safe transport choices. Just as at home, it is important that information is there for road users about the different modes available and their associated risk to guide them in their choice. But different to home tourists are often in unfamiliar territory and may be grappling with different infrastructure and

[7] When related sectors are taken into account, the estimated contribution of tourism to GDP creation is much higher: tourism indirectly generates more than 10% of the European Union's GDP and provides about 12% of the labour force.

road user culture. Journey planning should be factored into holiday planning. Looking at how to get to one's destination is important, if driving, issues such as fatigue and making sure proper rest stops are planned for is crucial for preventing risk. If flying or taking the plane then tourists need to look at how to manage the "final mile" or the leg from the airport or train station to the hotel. Efforts to make public transport easily accessible to tourists are important to help them to make the choice to take this safer transport option. Looking at issues such as providing such information about public transport options at arrival points and easy payment are all relevant. At present there are numerous projects on promoting sustainable transport modes in tourism such as the examples from Austria such as 'Alpine Awareness' (4). The idea behind Alpine Awareness is to promote environmentally friendly travel (essentially public transport, and travel by bicycle, by foot). However safety considerations should be included.

Within the Network of European Regions for a sustainable and competitive European tourism (*NECSTouR) (107*) and the EDEN (European Destinations of Excellence) (71) destinations there is ongoing work on developing a system of indicators for the sustainable management of destinations. One of the planned actions under this network is to organise awareness-raising campaigns for European tourists concerning the choice of destinations and means of transport. Again this should be extended to include an indicator on safe mobility.

3.9.2 Information about the Traffic Rules

EU Member States and the European Commission will now have a legal duty to inform non-resident road users about existing rules in their country. Under Article 8 of the new Directive on Cross Border Information Exchange (23) on road safety related offences. The European Commission will need to keep its website summary of the rules in force in Member States updated. Currently this can be found on-line entitled "Going Abroad"(72). Member States have obligations in this area. They will in turn need to provide information on these rules to the Commission as well as providing road users with the necessary information about the rules applicable in their territory. According to the Directive they should be looking to work with multipliers such as road safety bodies, non-governmental organisations active in the field of road safety and automobile clubs. Car clubs are already active in this area in providing information to their members ahead of a holiday, but so is the traffic police. TISPOL has developed driving guides to European countries. They provide clear and easy-to-follow information to answer the most frequently asked questions by visiting motorists. Recent changes in legislation are highlighted, with tips on what to do in the event of a breakdown or collisions (126). It is hoped that through raising awareness and linking this to increased enforcement that drivers will no longer feel above the law when they are on holiday and comply with road safety related traffic legislation.

France – Information to Tourists

France is a transit country where non-resident traffic rises to over 50% during the peak holiday season in certain regions. In 2008 France launched an awareness raising campaigns on the importance of complying with road safety related traffic legislation to its seasonal visitors. Information materials in different languages were distributed at entry points to the country giving an overview of French traffic rules. This covers issues such as drink driving, speed limits, child safety. It alerts drivers to the presence of safety cameras to enforce speed limits on French roads. There is a section on managing fatigue. They include a table of the main offences and penalties in France (80).

3.9.3 Car Rental

Car rental is another area where safe choices can be offered. Here the car rental firms can play an important role in giving advice to the customer to guide them to making a safe choice and that they are choosing a vehicle type they are familiar with. Moreover they are an information point in providing guidance on rules and regulations to tourists in that country. In terms of encouraging compliance with the rules and making sure that there is no feeling of impunity car rental organizations can set up a system whereby if a driver does offend then the bill for the fines is transferred to them directly such as for example in Malta.

Malta

In Malta, tracking down non-resident traffic offenders is simplified by the fact that many tourists hire cars when visiting the island. Malta with a population of 412,961 hosts 1.5 million visitors every year, many of whom hire cars. Any detected traffic law offence is enforced in a very swift and efficient manner. As regards seat belt use and speeding fines, the tickets are sent within a 24 hour period to the car hire company who charges the credit cards of their hire clients. In the case of drink driving, offenders are taken to court immediately otherwise they must stay in Malta to deal with the court proceedings.

3.9.5 Access to Justice

In case of death or serious injury, post collision legal procedures are a matter for serious consideration for victims of traffic collisions whilst on holiday. Currently under development the EU is an initiative guaranteeing the same level of protection, support and access to justice throughout the EU for victims of road traffic collisions (66). With the new Communication on "Strengthening Victim's Rights in the EU', the European Commission identifies "compensation as one of the basic needs of victims (66)". It notes though that people in road traffic collisions in another Member State may face administrative and procedural difficulties when they seek compensation because of different limitation and prescription periods. The Commission will aim to address this problem by proposing to harmonise the rules on limitation periods so that victims do not risk losing their right to compensation for procedural reasons. Within this context the European Commission recognises that although it has for many years taken action on road safety: "Prevention work is crucial not only for cutting crime and accidents in the short and medium term, but also for changing attitudes towards criminal or reckless conduct that can give positive, long-term and lasting results (66)." Making a link between tackling road safety within the criminal and justice policy in relation to upholding the rights of victims across Europe is a laudable start to tackling a complex issue.

3.9 Conclusion

This paper has shown that integration of road safety into other policy areas brings benefits. Joint objectives can be elaborated through co-operation between different areas of work in the public and private realm. This can be to the benefit of saving lives and reducing risk on Europe's roads. For integration of road safety into other policy areas, not to be an ad hoc process a mechanism must be sought to introduce this process and follow it through. There are conflicts though that can arise, however by exchanging ideas and entering into dialogue with partners in different sectors these can be identified early and avoided or a compromise can be found. This paper has demonstrated that the potential for finding synergies is broad and stretches beyond obvious areas for integration such as employment policy, health and environment. But also, that there is more scope to expand areas of

common work to reach joint goals. Integration should be an ongoing process which should be monitored and revised within a spirit of dialogue between representatives of different policy areas.

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