

ROAD SAFETY MANAGEMENT CAPACITY REVIEW AND STRATEGY DEVELOPMENT IN UKRAINE

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Acknowledgements

This report was prepared with the support of a number of key agencies and stakeholders in Ukraine. The input and time contributed by senior representatives was greatly appreciated, and provided important insight to the significant road safety issues confronting Ukraine.

The review team appreciated the opportunity to meet with:

- First Deputy Minister of Infrastructure, Dr Vladimir Shulmeister
- First Deputy Minister of Interior, Ms Ekaterine Zguladze
- Chair of Parliamentary Sub-Committee for Road Safety, Mr Igor Didenko

The review team also appreciated the opportunity to discuss issues with senior representatives of: DerzhdorNDI, Kyiv City State Administration, Ministry of Health, Ministry of Infrastructure, Ministry of Interior, National Transport University, Road Safety Support Foundation, Ukrainian Road Safety Association, Ukravtodor, Ukrdiprodor, European Investment Bank, European Union, and the TRACECA road safety project.

Finally, we appreciate the assistance of the Global Road Safety Facility and the staff of the World Bank Kyiv Office for their support.

Executive Summary

Ukraine has a poor record in road safety compared with many of its neighbours and with the European Union, and is suffering significant human and economic losses through road traffic injury.

This report has been prepared following a study of institutional road safety management capacity in Ukraine, following the safe system approach. Whatever the organisational form in which they are established, the World Health Organisation recommends that a lead agency is nominated by Government to lead country's road safety efforts across the various government agencies. This mandate does not exist in Ukraine, which creates a major barrier for reducing road trauma. Draft legislation which would establish such a lead agency has been prepared and needs to be passed into law.

Given the extraordinary pressures which Ukraine faces, yet the substantial and persistent losses on the road, it is recommended that a short strategy document aligned to safe system principles is prepared which:

- i. Includes a clear political mandate for road safety from the President and/or the Prime Minister
- ii. Describes how road safety will be managed and led within the Government of Ukraine
- iii. Sets medium term targets out to 2020 and identify critical intermediate outcome and delivery measures to achieve that target
- iv. Links to a new strategic work programme which details the critical areas of activity over the next five years, and the major investments and decisions that will be pursued.

It is recommended that the strategy incorporate the following five key themes.

- i. Safety leadership – it is recommended that the Government of Ukraine:
 - a. Nominates the Cabinet Minister who will be responsible for developing key road safety legislation and overseeing the establishment of an institutional structure¹ which could begin playing the role of a dedicated Road Safety Lead Agency for Ukraine as suggested by international good practice
 - b. Specifies a vision for road safety which relates to the ultimate safe system goal of eliminating fatalities and serious injuries
 - c. Sets interim 2020 targets towards that goal, including final outcome targets, and delivery targets which are linked to Chief Executive performance
 - d. Schedules a review of strategy implementation by the Cabinet of Ministers in 2018
 - e. Seeks specific cross-party endorsement of the road safety strategy document from Parliament.
- ii. Safety principles – it is recommended that the strategy set the following principles as the basis for road safety decision making and investment:

¹ In the most recent draft legislation a structure called National Highway Safety Bureau was proposed to coordinate road safety within government.

- a. The ultimate road safety goal is the elimination of fatalities and serious injuries from everyday use of the road network
 - b. Road users make mistakes in their use of the road network, and should not suffer death or serious injury as a result of those mistakes
 - c. Whether or not it is implicated in a crash occurring, motor vehicle speed determines the injury outcomes of a crash and needs to be effectively controlled
 - d. Road improvement projects and vehicle import controls need to focus on the protection of users from harm through improved technology and design
 - e. Road users must comply with key traffic rules, and it is the responsibility of government agencies, the private sector and non-government organisations to assist them to use the road free from harm.
- iii. Safety investment – it is recommended that the strategy commit to:
- a. The preparation of a five year safety funding and investment program, covering all aspects of the road network, the vehicle fleet, and road traffic enforcement
 - b. The establishment of a stable funding mechanism for road safety, such as for example a Road Safety Fund, comprising at least 50% of all road traffic enforcement fines (using 2015 as a baseline) and 10% of all road infrastructure investment funds, as proposed in the recent draft legislation.
- iv. Safety standards – it is recommended that:
- a. A safety focussed plan is prepared for the integration of technical standards and norms in Ukraine, which goes beyond the commitments set out in the Association Agreement
 - b. The plan explicitly recognise the gap between current technical standards and norms in Ukraine and current technical standards and norms in the best performing EU countries, and set out a multi-year timetable by which time the gap will be closed.
- v. Safety systems – it is recommended that a focus is placed on developing and strengthening road safety management systems, at both a national level, and an agency or enterprise level.

A small number of high value strategic investment packages have been identified and are recommended here as meriting particular attention by the road safety agencies of the Government of Ukraine, and support from international donor partners in road safety. They include support required to establish a fulltime professionally staffed lead agency for road safety, as well as strategic investments in road traffic enforcement, automated speed enforcement, regulatory compliance systems and safe system demonstration projects, to further boost the projects which are already underway.

Delivery mechanisms for such packages are recommended which draw upon established structures for managing road transport investments with international finance institutions, with the intention of creating at least interim structures which can initiate the necessary safety management reforms and deliver a safer road environment for Ukrainians.

A Findings and Recommendations

1. Ukraine has a poor record in road safety compared with many of its neighbours and with the European Union, and is suffering significant human and economic losses through road traffic injury. The Global Burden of Disease study estimates that road traffic is the number one cause of death for Ukrainians aged 15-24, and the number two cause of death for Ukrainians aged 5-14. The socio-economic cost of road trauma in Ukraine has been estimated at \$4.5 billion, approximately 3.4% of the country's Gross Domestic Product in 2014. The budgetary impact is likely to be felt most directly in Ukraine's health services through on-scene responses to road crashes and hospitalisation of large numbers of injured road users.
2. Key road safety issues appear to be:
 - i. Speed, which is a contributing factor in 39% of fatalities
 - ii. Intersections, which are the site of 30% of fatal crashes
 - iii. Pedestrians, who account for an estimated 38% of fatalities
 - iv. Truck and bus crash victims, who account for an estimated 24% of fatalities.
 - v. Drink driving, which has been highlighted by the World Health Organisation.
3. With its emphasis on *protecting* rather than *perfecting* human use of the road transport system, the safe system based approach is now recognised throughout the world as the basis upon which good road safety practice rests. It was introduced first in the best performing countries such as Sweden and the Netherlands and is also now being pursued widely in Europe, North America and Australasia. Applying this safe system approach will be very challenging for Ukraine, as it requires going well beyond the task of building societal and political support for improvement, and into much more complex issues regarding the management of the transport system. Like many other countries, Ukraine will need to address a legacy road transport system which at this time can simply not deliver safe travel.
4. The primary objective of this report is to contribute to improved road safety institutional capacity by reviewing road safety management capacity in Ukraine, following the safe system approach.

A Lead Agency for Road Safety

5. The identification of a lead agency in government to guide the national road safety effort is the first recommendation of the World Health Organisation for countries which seek to address their road trauma problem. A lead agency is required to orchestrate and align specific road safety interventions and management functions across all government agencies (and non-government actors) to support achievement of intermediate and final safety outcomes.
6. Whatever the organisational form in which they are established, the lead agency needs a clear political mandate to lead the government's road safety efforts across the various government agencies. This mandate does not exist in Ukraine, which creates a major barrier for reducing road trauma. Previous efforts to address the problem have failed. A Road Traffic Safety Coordination Council of Ministers was established in 2006, but it did not have any dedicated professional support and only met briefly. It does not exist in any form now. ***It is recommended that the Government of Ukraine establish a formal legislative mandate for a lead agency to guide the national road safety effort, and that this lead agency mandate is***

supported by the establishment of a fulltime work group of road safety professionals charged with giving effect to that mandate.

7. Draft road safety law has been prepared which, if implemented, would go a long way towards addressing this fundamental road safety problem in Ukraine. It is understood that the legislation has been introduced to Parliament but has not yet been passed. It formalises the powers of the Cabinet of Ministers in relation to road safety, and of a National Highway Safety Bureau (NHSB). ***It is recommended that the draft legislation is reviewed against a good practice set of legislated functions for a lead agency (see Box 3 The functions of a lead agency).*** This would be an important foundation for the establishment over time of a comprehensive road safety legislative structure, addressing key road safety management functions, mechanisms and interventions. ***It is also recommended that the legislation clearly directs the agency to give priority to the promotion of safety – “safety” meaning the protection of Ukrainian road users from fatal or serious injury while using the road – over other road traffic management matters.***

8. ***It is recommended that the lead agency function is established urgently within either the Ministry of Interior or Ministry of Infrastructure.*** The Ministry of Interior performs a number of the lead agency functions, but does not have an effective mandate to perform the role, and is undergoing significant change in its road traffic policing function. The Ministry of Infrastructure has agencies responsible for commercial road, rail and maritime transport safety, and vehicle safety standards, and for the national highways which would provide a strong basis for adding the road safety lead agency function. In either Ministry, the function would clearly need to be managed in a way which reinforces a partnerships-based, multi-sectoral approach required to deliver sustained road safety improvements.

9. A professional safety capacity is essential to ensure that all options prepared for decision are based on sound road safety management principles and evidence and to provide the necessary follow up to ensure that decisions made by the NHSB are implemented by the relevant government agencies. ***It is recommended that the NHSB has its own accountabilities through the responsible Minister to Parliament, a physical office, fulltime staff who form a professional Secretariat, an ongoing revenue and expenditure budget, and equipment to perform the task.***

10. ***A simple strategy-implementation structure is recommended for the NHSB.*** The recommended operational structure for the lead agency is amenable to development and expansion over time as the lead agency is established. The Head would be supported by two experienced Deputy Heads, capable of leading work programs that are dependent on the involvement and support of outside partners for success.

11. Consideration is required to the interim funding and implementation of this structure over time, particularly given current budgetary constraints within Ukraine. Notwithstanding the need for the NHSB/lead agency establishment legislation to be passed, there is an urgent need to establish interim arrangements within the Government of Ukraine to guide the national road safety effort.

12. ***It is recommended that an interim National Road Safety Programme Group (NRSPG) is established to form the nucleus of the lead agency in advance of the NHSB being established.*** The responsibility for establishing the NRSPG would lie with the Project Implementation Unit nominated by the Ministry of Infrastructure for

the Road Sector Development Project currently being developed by the Government of Ukraine and the World Bank.

13. Government accountability for the NRSPG would lie with the Minister of Infrastructure, who would consult with the Ministers of Interior and Health prior to taking any proposal to the Cabinet of Ministers of Ukraine. ***It is recommended that a National Road Safety Programme Forum is formed by the Chief Executives of the Ministries of Infrastructure, Interior, and Health, the Heads of Ukrtransbezbeka, Ukravtodor and the Chief of the new Patrol Police Department, and make recommendations to the Minister of Infrastructure regarding the promotion of road safety in Ukraine.***

14. ***It is recommended that the NRSPG is jointly funded by the Government of Ukraine and IFIs, and comprise fulltime secondees from the key Government agencies (with funding allocated accordingly), and senior level road safety management consultants funded through road transport investment projects.*** This arrangement would allow for essential lead agency functions to be performed in advance of the NHSB being established, using the Project Implementation Unit structure.

Building Road Safety Management Capacity

Results focus

15. Setting ambitious, realistic and achievable road safety targets, based on an understanding of the interventions that will be required, has been an important element of progress in many of the best performing countries. This requires the preparation of a results framework with three distinct components – final safety outcomes (the results being sought), intermediate safety outcomes (the intermediate results to assess progress), and institutional outputs (the deliverables implemented to affect the intermediate results).

16. ***It is recommended that a road safety results framework is developed on a collaborative basis across the key government agencies and become a focus of management and leadership attention to drive road safety improvement over the remainder of the decade. It is also recommended that the Government of Ukraine set an interim fatality reduction target through to the end of the decade which is commensurate with the European target of a 50% reduction over the course of the decade.***

Coordination

17. Road safety requires a determinedly multi-sectoral approach, where partner agencies first come together to agree on strategy and then take responsibility for delivering their own outputs in concert with their partners. ***As well as the establishment of the NHSB, it is recommended that a full coordination structure is established which would be the primary institutional mechanism through which the NHSB performs its lead agency functions (see Figure 6 Recommended road safety coordination structure).*** Ideally established in legislation, this structure needs to link high-end political mandate and decision making through to the road safety agencies within the Government of Ukraine, through to the professional safety leaders within those agencies, and the range of business and civic organisations which involve themselves in the national road safety effort.

Legislation, standards and compliance systems

18. While legislation is needed to establish and mandate the NHSB, the sheer breadth of legislation and standards poses a particular challenge for Ukraine. It may be useful to consider the establishment of an overarching road safety law, as a vehicle for managing change into the future. Particular attention is required to implementing the EU-Ukraine Association Agreement, which should be taken as a clear direction that technical standards and norms in relation to the safety of the road transport sector need to be fundamentally realigned to good European practice. Ukraine has undertaken to approximate its legislation to 12 pieces of EU road transport legislation which represents significant safety opportunity for Ukraine.

19. It is important that the legislative approximation process facilitates significantly reduced road trauma in Ukraine by including safety critical policy components which goes beyond the minimum standards set out in the EU acquis. This may require reforms to be staged, so that interim legislative requirements are not inadvertently presented as providing sufficient safety protection for Ukrainian road users.

20. ***It is recommended that a safety focussed plan is prepared for the integration of technical standards and norms in Ukraine, which goes beyond the commitments set out in the Association Agreement, explicitly recognises the gap between current technical standards and norms in Ukraine and current technical standards and norms in the best performing EU countries, and sets out a multi-year timetable by which time the gap will be closed.***

21. A major new project is being developed within the Ministry of Infrastructure (Ukravtodor) in association with the European Investment Bank to assist in the transition from ex-Soviet technical standards and processes in the planning design, construction and management of the Ukrainian road network. Major opportunities appear to exist in better aligning speed limits with the function and use of the road network, particularly for environments where highways pass through villages. A EuroRAP study also highlights the high potential for cost effective treatments on major highways including the measures to significantly improve safety in relation to:

- i. Pedestrians (footpath provision, traffic calming, pedestrian fencing, upgrading of pedestrian facility, street lighting, refuge islands, signalised crossings)
- ii. Intersections (protected turns at unsignalised intersections and improvement to signing, delineation and lighting)
- iii. Overtaking (median barriers including 2+1 road configurations, lane widening, central hatching or wide centre lines)
- iv. Roadsides (roadside clearance, barriers, shoulder sealing and improved delineation)
- v. Villages (improved pedestrian facilities, parking improvements, traffic calming, and bicycle facilities).

22. Major reforms are underway to strengthen legislation applying to the motor vehicle fleet, the drivers of that fleet, and the commercial operators providing freight and passenger services. The systematic introduction of safety technology through new light and heavy vehicles entering the Ukrainian fleet is a critical step forward for road safety, and will need to be supported by effective vehicle type approval systems. It will also need to be supported by controls on the importation of used vehicles

entering the Ukrainian fleet which is understood to be not yet addressed, and roadworthiness controls on light vehicles which are a commitment under the EU-Ukraine Association Agreement but only for implementation in 2019.

23. Driver licensing reform is incorporated into the draft road safety law. This legislative reform goes further than the commitment under the Association Agreement which refers only to the 1991 EU Directive, and so also represents a step forward for road safety in Ukraine. This includes proposals to set the training and education standards for driving examiners, including minimum standards for their initial qualification as well as regular refresher courses, and to strengthen medical fitness to drive requirements.

24. Legislation needs to be supported by regulatory management and compliance systems. Implementing regulatory reform for the entry and exit to and from the road transport system by vehicles, drivers and transport operators requires action on a wide variety of fronts: specification of legal safety requirements; investment in capital and operating funds; and compliance systems.

25. While previous discussion has highlighted elements of the safety standards being addressed in Ukraine, and opportunity to strengthen these legal requirements, there appear to be fundamental difficulties with the electronic systems and registers needed to effectively regulate motor vehicle traffic – the driver license register is only in electronic form for licences issued from 2014, and many vehicle records relate to use not ownership. Either of these difficulties would fundamentally undermine the ability of authorities to enforce traffic law. ***It is recommended that a significant reform program is initiated for motor vehicle regulatory management systems, in line with the need for electronic registers which has been highlighted by stakeholder agencies.*** These registers should be linked to effective crash, health and road asset databases.

26. As for many countries around the world, the safety of Ukraine's road transport system is heavily dependent on how fast motor vehicle traffic is allowed to flow, and the quality of controls placed on motor vehicle drivers who exceed the permitted speed. ***The default urban speed limit of 60 km/h in Ukraine is well above good European practice, and it is recommended that this be reduced to 50 km/h.***

27. A further issue arises in the law which prevents prosecution for speeding until the vehicle is detected travelling at 20 km/h over the speed limit. A driver speeding at 80 km/h is sixteen times more likely to be involved in a casualty crash, than if driving at the speed limit in a 60 km/h zone. ***It is recommended that the 20 km/h speed enforcement tolerance law is repealed immediately, its repeal is widely communicated to the community, and the Chief of Police introduce an operational speed enforcement tolerance to 5 km/h over the speed limit.*** This operational approach could be given effect immediately or staged over a 12 month period, and should be supported by an excellent communication plan, and sustained rigorous enforcement.

28. Given the large estimated volume of alcohol related fatalities, a significant investment in drink driving enforcement is likely to provide good safety benefits. A survey of road traffic enforcement practices recently illustrated that of 17 EU member states where roadside alcohol testing information was available an average of 165 roadside alcohol tests were conducted by Police per 1000 population in 2010. ***It is recommended that Ukraine invests in a drink driving enforcement programme***

which targets the sustained annual delivery over a three year period of at least 100 roadside alcohol tests per 1000 population. It is also recommended that a good practice review of drink driving enforcement practice is undertaken, including the effectiveness of the legal systems in supporting this activity, and effectively deterring drink driving.

29. Major structural change is underway in road traffic policing, with an entirely new general duties force being recruited to replace the former traffic police force. An EU supported project is currently underway to support traffic enforcement planning. ***Significant additional investment is recommended in three key areas:***

- i. ***General deterrent focused, road traffic policing training which covers every level of the new force***
- ii. ***High quality road safety intelligence and analytical capability which provides commanders with the information necessary to undertake daily tasking***
- iii. ***Specialised traffic equipment, and training in such equipment to detect and manage prosecutions of drink drivers and speeding drivers, and collect crash data.***

Funding and resource allocation

30. There are obvious and major constraints on road safety funding from the Government of Ukraine. A number of significant activities have been scaled back, and the potential for increased funding in the short term may be limited. There are a number of sources of potential funds within Ukraine which are directly associated with the safety of the road transport system. These need to be explored and tested for their ability to be put in place. Draft road safety law identifies the need for a Road Safety Fund, and it is strongly recommended that this is established and formalised within the Government's accounting systems.

31. Safety funding and resource allocation should be an early and significant priority for the NHSB – investment in safety is essential and produces strong economic returns when allocated to the right projects. ***It is recommended that a five year safety funding and investment program, covering all safety aspects of road safety management, the road network, the vehicle fleet, road user behaviour, and trauma management, is developed, in line with the UN Decade of Action on Road Safety.*** This should include the specification of funding sources determined by the Government of Ukraine, and the development of a specific schedule of infrastructure safety retrofit programs with Ukravtodor.

32. ***It is recommended that the Road Safety Fund identified in draft legislation is established, that it comprise at least 50% of all additional road traffic enforcement fines (using 2015 as a baseline), and 10% of all road infrastructure investment funds, and that the formal decision making role for allocation of the Fund is held by the lead agency for road safety.***

Communication and Promotion

33. There is professional recognition of the need to increase understanding amongst decision makers and influencers, but promotional activity for road safety appears to be at a low ebb in Ukraine. Promotion of key road safety concepts among decision makers and opinion leaders is urgently needed. Standalone communication to road users (sometimes called education) is highly unlikely to be effective in

achieving key behaviour changes in the driving population. It has to be combined with other activities, most notably with strengthening road traffic enforcement activity. ***It is recommended that a road safety promotional plan is developed in collaboration with a wide range of government and non-government stakeholders, led by the NHSB, with the purpose of:***

- i. ***raising the profile of road safety in Ukraine and creating a climate for change amongst national or local decision makers and influential people within the community and media***
- ii. ***directing promotional investment into major evidence-based national initiatives to enhance the effect of major changes in road traffic enforcement or the road safety environment***
- iii. ***providing a mechanism for local communities or communities of interest to advocate for local government decisions to improve safety on city or village streets.***

Monitoring and Evaluation

34. Good results focused monitoring and evaluation systems start with good crash fatality and injury data. Significant disparities exist between official reported data and estimates developed by WHO which suggests a significant review and subsequent investment into crash data collection, analysis and management systems is a high priority for Ukraine.

35. As part of the TRACECA regional road safety project the Ukrainian crash data system is being analysed. ***It is recommended that the results of the TRACECA data project are taken and packaged into an investment project which will considerably strengthen the collection, collation, analysis, reporting and use for subsequent improvement programmes of road crash fatality and injury data in Ukraine.*** This needs to be supported by and linked with improved electronic vehicle and driver registers, as well as infrastructure and health records.

Research and Development and Knowledge Transfer

36. One of the most significant road safety research and development projects in Ukraine over recent years has been the completion of a European Road Assessment Programme (EuroRAP) study of 1666 kms along the M12, M17 and M18 – roads of national and international importance in need of upgrading and rehabilitation. The resulting Star Rating map showed that a third of the roads rated less than 3-star for car occupants and only about one in eight sections where pedestrians could expect to be present achieved a 3-star rating. This study is being used as input to a major road upgrade project for a 40 km section of the M12, which will support a more safety focused approach to infrastructure investment.

37. ***It is recommended that:***

- i. ***the EuroRAP results are used to shape a safe system demonstration project on the remainder of the M12 corridor from Ternopil to Uman, highlighting the strong safety benefits from smaller scale safety focused treatments combined with more intensive enforcement and promotion operations***
- ii. ***EuroRAP methodology is progressively used for prioritization and selection of road infrastructure improvement projects***

iii. *a EuroRAP study is undertaken for the whole 21,000 km Ukrainian network of international, national and regional roads of significance.*

38. Sustained knowledge transfer relating to good road safety management practices in Europe and the application of safe system principles is an important priority across the road safety partner agencies, and into wider political, professional and institutional settings within Ukraine. *It is recommended that a specific road safety management knowledge transfer project is developed which focuses on the professional development in road safety of key agency and professional leaders. This would include peer to peer exchange with European neighbours, and access to international expertise and training for specific professional disciplines, but also on a partnership basis as a whole.* That is, investment is made into a cross-agency training and development program which actively promotes learning across disciplines and across organisational boundaries.

Developing a Multisectoral Strategy for Road Safety

39. A 2011 *Strategy for Improving the Road Traffic Safety Rate in Ukraine up to 2015* was approved. A number of the priorities identified in the strategy remain relevant, but it is clear that implementation of the strategy has proven difficult, and has been exacerbated by the lack of a lead agency for road safety. A new strategic focus on the safe systems approach is needed.

40. *Given the extraordinary pressures which Ukraine faces, yet the substantial and persistent losses on the road, it is recommended that the focus be on preparing a short document (to supplement a new strategic programme) which is aligned to safe system principles. The strategy document would:*

- i. *Include a clear political mandate for road safety from the President and/or the Prime Minister*
- ii. *Describe how road safety will be managed and led within the Government of Ukraine*
- iii. *Set medium term targets out to 2020 and identify critical intermediate outcome and delivery measures to achieve that target*
- iv. *Link to a new strategic work programme which details the critical areas of activity over the next five years, and the major investments and decisions that will be pursued.*

41. *It is recommended that the strategy is developed along the following five key themes.*

Safety leadership

42. *It is recommended that the Government of Ukraine:*

- i. *Nominates the Cabinet Minister who will be responsible for overseeing the establishment of the NHSB*
- ii. *Specifies a vision for road safety which relates to the ultimate safe system goal of eliminating fatalities and serious injuries*
- iii. *Sets interim 2020 targets towards that goal, including final outcome targets, and delivery targets which are linked to Chief Executive performance*
- iv. *Schedules a review of strategy implementation by the Cabinet of Ministers two to three years after adoption in 2018*

- v. *Seeks specific cross-party endorsement of the road safety strategy document from Parliament.*

Safety principles

- 43. *It is recommended that the following principles provide the basis for road safety decision making and investment in Ukraine:*
 - i. *The ultimate road safety goal is the elimination of fatalities and serious injuries from everyday use of the road network*
 - ii. *Road users make mistakes in their use of the road network, and should not suffer death or serious injury as a result of those mistakes*
 - iii. *Whether or not it is implicated in a crash occurring, motor vehicle speed determines the injury outcomes of a crash and needs to be effectively controlled*
 - iv. *Road improvement projects and vehicle import controls need to focus on the protection of users from harm through improved technology and design*
 - v. *Road users must comply with key traffic rules, and it is the responsibility of government agencies, the private sector and non-government organisations to assist them to use the road free from harm.*

Safety investment

- 44. *It is recommended that the strategy document commit to:*
 - i. *The preparation of a five year safety funding and investment program, covering all aspects of road safety management, the road network, the vehicle fleet, road traffic enforcement, and trauma management, in line with the UN Decade of Action on Road Safety*
 - ii. *The establishment within the NHSB of a Road Safety Fund, comprising at least 50% of all additional road traffic enforcement fines (using 2015 as a baseline) and, as proposed in draft legislation, 10% of all road infrastructure investment funds.*

Safety standards

- 45. *It is recommended that:*
 - i. *A safety focussed plan is prepared for the integration of technical standards and norms in Ukraine, which goes beyond the commitments set out in the Association Agreement*
 - ii. *The plan explicitly recognises the gap between current technical standards and norms in Ukraine and current technical standards and norms in the best performing EU countries, and set out a multi-year timetable by which time the gap will be closed.*

Safety systems

- 46. *It is recommended that a focus is placed on developing and strengthening road safety management systems, at both a national and sub-national level, and an agency or enterprise level – that is, a more systematic approach to identification of key safety performance factors, specification and funding of plans to address those factors, effective implementation of the plans, and monitoring and evaluation activity to translate lessons learned into the next continuous improvement phase.*

Strategic Investment Packages

47. Amongst the variety of initiatives that are proposed or underway a small number of high value strategic investment packages have been identified and are recommended here as meriting particular attention by the road safety agencies of the Government of Ukraine, and support from international donor partners in road safety.

48. The intention is that these investment packages form the basis for a safety investment plan for Ukraine, for which there is significant need. ***It is recommended that, once the overall form and shape of these packages is agreed, the Government of Ukraine and its international partners look first to this schedule, and engage with the NRSPG and the subsequent NHSB regarding the best safety components to build into their road transport investment projects or other support activity.*** The packages may need to be adapted to specific sources of funds available and developments in Ukraine.

49. It is envisaged that the first priority is the letting of a road safety management consultancy, which will provide the necessary external support to the NRSPG on critical and urgent road safety issues, and lay the basis for a sustained safety management programme.

50. ***The following strategic investment packages are recommended for preparation and delivery (and are further detailed in the report).***

<i>Developing Road Safety Management Systems</i>	
Objective	Prepare and support initial implementation of a multi year work program through to 2020 to systematically lift national road safety management capacity and performance in Ukraine
Accountability	(National Highway Safety Bureau) (Ministry of the Interior) (Ministry of Infrastructure) (Ministry of Health) Delivery under a substantial road safety management consultancy contract, which is sourced from a mix of Ukrainian nationals and internationally recognised road safety management consultants
<i>Improving Road Traffic Enforcement</i>	
Description	A major road safety capability project which is based on providing leadership, analytical and practical support for the new road traffic policing force to significantly reduce road trauma
Accountability	Ministry of the Interior
<i>Introducing Automated Speed Enforcement</i>	
Description	A major feasibility study to identify and develop specific investment proposals for the introduction of automated speed enforcement systems in Ukraine.
Accountability	Ministry of the Interior

<i>Developing Regulatory Compliance Systems</i>	
Description	A major study to assess legislative, information technology and operational systems to support motor vehicle, driver and operator compliance systems that will facilitate more effective enforcement
Accountability	Ministry of the Interior
<i>Implementing Safe Systems Corridor Demonstration Projects</i>	
Description	A major safety improvement project on the M12 using 2013 EuroRAP study as the basis for developing a specified set of works.
Accountability	Ministry of Infrastructure

Phased Implementation

51. ***It is recommended that a strong project management approach is taken to road safety strategy and development in Ukraine, initially focusing on three phases over a period of approximately 36 months.*** This approach would use the strengthened implementation structures set out in this report, including the interim use of a National Road Safety Programme Group within the Project Implementation Unit in advance of the establishment of the NHSB.

Phase One (Establishment), Months 1-6

The focus of this phase is on specifying commitment of the Government of Ukraine to significantly addressing the road safety management issues outlined in this report, and making the first safety focused decisions:

- i. Legislation is passed to establish the NHSB, following any amendment arising from a review of good practice functions identified in this report, with appointees reduced from eight to four, and the recruitment of a Head and two Deputy Heads for the permanent Secretariat
- ii. A tender is let for a road safety management consultancy to work within the permanent Secretariat, alongside road safety staff seconded from the major road safety agencies, with the task of leading implementation of the recommendations of this report
- iii. Legislation is passed to establish a Road Safety Fund comprising 50% of additional traffic enforcement fines, and 10% of transport investment funds, to reduce the default urban speed limit from 60 km/h to 50 km/h, and to repeal the law which sets a 20 km/h speed enforcement tolerance for speeding motorists.

Phase Two (Development), Months 7-18

The focus of this phase is on undertaking the detailed specification of longer term road safety management reforms and interventions:

- i. A concise road safety strategy document is prepared on a collaborative basis which sets out the key initiatives relating to safety leadership, safety principles, safety investment, safety standards, and safety systems, and investment packages as outlined in this report
- ii. Specifications are prepared for internal Government of Ukraine reforms and for multilateral or bilateral technical assistance, including:

- a. Safety legislation reform plan
 - b. Road safety funding and investment programme
 - c. Road safety promotional plan
 - d. Implementation of data systems reform recommended by TRACECA
 - e. Completion of EuroRAP survey of 21,000 km of roads of significance
 - f. Reform of motor vehicle regulation management systems
 - g. Feasibility study for automated speed enforcement.
- iii. Significant new initiatives are introduced:
- a. Results management framework
 - b. Develop and implement road safety knowledge transfer project
 - c. Develop and implement road traffic enforcement, training, intelligence and equipment project.

Phase Three (Delivery), Months 19-36

The focus of this phase is on the delivery of major new safety investments, based on the development projects initiated during phases one and two. New investments are envisaged into road safety management systems, road network safety management, and road traffic enforcement. A review of the implementation of the new road safety strategy is envisaged, ahead of the preparation of a subsequent phase of activity.

B Road Safety Management Context

52. This report identifies critical institutional and strategic issues which need to be addressed in order for Ukraine to significantly improve its current level of road safety performance.

Road traffic injury is a global development issue

53. Globally, road traffic is the cause of tremendous health losses, which are projected to increase. In 2004, the World Health Organization (WHO) declared a global crisis in road traffic injury in its *World Report on Road Traffic Injury Prevention*.² The six primary recommendations from the report remain relevant to Ukraine's current road safety situation:

- i. Identify a lead agency in government to guide the national road safety effort
- ii. Assess the problem, policies and institutional settings relating to road traffic injury and the capacity for road traffic injury prevention in each country
- iii. Prepare a national road safety strategy and plan of action
- iv. Allocate financial and human resources to address the problem
- v. Implement specific actions to prevent road traffic crashes, minimize injuries and their consequences and evaluate the impact of these actions
- vi. Support the development of national capacity and international cooperation.

54. Globally, the crisis continues to develop. An estimated 1.24 million people died on the world's roads in 2010, and several million more are temporarily or permanently disabled each year. The 2013 *Global Burden of Disease* study estimated that road traffic injury is the leading cause of death worldwide for 15-24 year olds, and the second leading cause of death for 25-39 year olds behind HIV/AIDS. WHO projects that road traffic injury will accelerate and overtake HIV/AIDS as a cause of death by 2030.

55. The United Nations established the *Decade of Action for Road Safety 2011-2020*, with a global plan based on five pillars – road safety management, safer roads and mobility, safer vehicles, safer road users, and post-crash response. Most recently, in August 2015, UN member states included a road safety target within the overall health goal of the newly agreed Sustainable Development Goals. The target is to halve the number of global deaths and injuries from road traffic accidents by 2020.

56. Road traffic injury is a major development issue. The *World Report* noted that more than half the people killed in traffic crashes are young adults aged between 15 and 44 years – often the breadwinners in a family. The burden of road related trauma is unevenly distributed, with over 90% of road fatalities occurring in low-income and middle-income countries as a result of rapidly increasing rates of motorization and growing access to road transport. Road traffic injuries are estimated to cost low-income and middle-income countries between 3% and 5% of their gross national product.³

² Peden M, Scurfield R, Sleet D, Mohan D, Hyder A, Jarawan E, Mathers C, eds (2004). *World Report on Road Traffic Injury Prevention*, World Health Organization, Geneva.

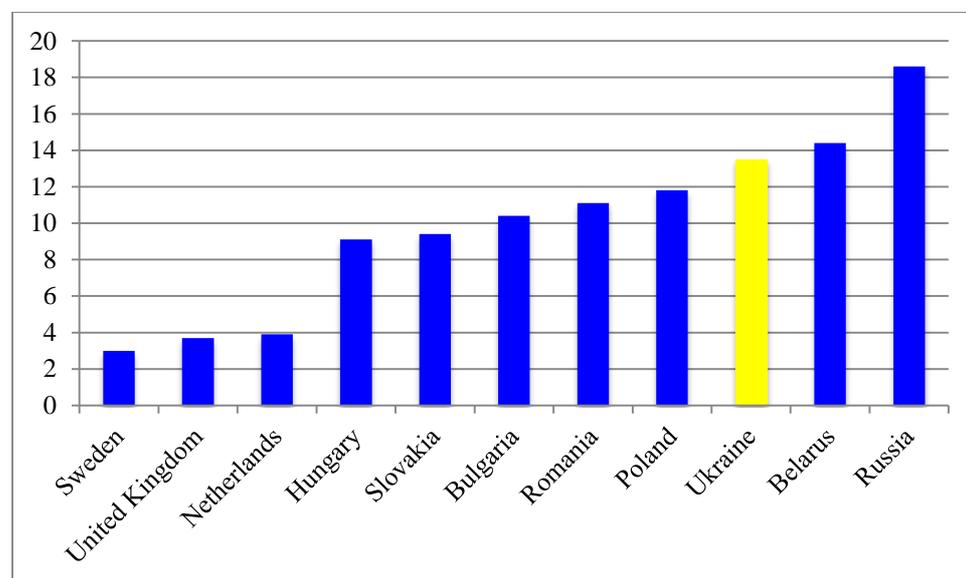
³ See iRAP and Dahdah, S and MacMahon K, *The True Cost of Road Crashes: Valuing Life and the Cost of a Serious Injury*, International Road Assessment Programme, Basingstoke.

The burden of road traffic injury in Ukraine

57. Ukraine has a poor record in road safety compared with many of its neighbours and with the European Union. WHO's *Global Status Report on Road Safety 2013* highlights the road safety performance of different countries by establishing a consistent survey methodology of road fatality data across all countries. The survey methodology does not attempt to provide precisely accurate fatality data for each country, but does allow for some country comparisons to be made.⁴

58. The WHO survey estimated that there were 6121 road fatalities in Ukraine in 2010, occurring at a rate of 13.5 road fatalities per 100,000 population. Ukraine compared well with Russia and Belarus in 2010, but did not compare well with other neighbouring countries (Hungary, Slovakia, Bulgaria, Romania and Poland), and even less well with the Netherlands, Sweden and the United Kingdom, traditionally the best performing countries in Europe (see Figure 1 below).

Figure 1: 2010 Fatalities per 100,000 population comparison



Source: World Health Organisation (2013), *Global Status Report on Road Safety 2013*, Geneva.

59. The average fatality rate reported in the survey for the WHO European Region (which includes Russia and extends south to Turkey and east to Kazakhstan) was 10.3 fatalities per 100,000 population. Across the 28 member countries of the European Union, there were 6.2 fatalities per 100,000 population in 2010.

60. Ukraine is suffering significant human and economic losses through road traffic injury. The Global Burden of Disease study estimates that road traffic is the number one cause of death for Ukrainians aged 15-24, and the number two cause of death for Ukrainians aged 5-14.⁵

⁴ The methodology included the development of a national consensus (through a National Data Coordinator) on the best representation of data from that country. For harmonization purposes, reported national data in some countries were adjusted to estimate fatalities within 30 days of a road crash, and to compensate for underreporting.

⁵ Institute for Health Metrics and Evaluation, 2013, *Global Burden of Diseases, Injuries, and Risk Factors Study 2013* (retrieved May 2015 <http://www.healthmetricsandevaluation.org/gbd/visualizations/gbd-heatmap>).

61. Police reported deaths and injuries on the road appear to have reduced since a peak in 2007, but remained largely constant over the four years from 2010 to 2013 (see Table 1 below).

Table 1: Police reported road deaths and injuries

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Deaths	6966	7229	7592	9574	7718	5348	4875	4908	5131	4824
Injuries	53638	55999	60018	78528	63254	45675	38975	38178	37519	37526

Source: Ministry of Interior of Ukraine

62. It is important to note first the difference in the official Police reported data of 4875 fatalities in 2010 and the estimate of 6121 fatalities in 2010 made by the WHO. One reason for the difference is that a road death is recorded by Police in Ukraine when it occurs at the scene of the crash, whereas the international standard is to record deaths which occur within 30 days of the crash. The large difference in the two figures, with 25% more fatalities estimated by the WHO, is not necessarily fully explained by this however, and needs to be more fully investigated. The importance of data collection and analysis is addressed in more detail in Section D.

63. With the available information, it appears that there has been improvement in road safety over the ten year period. However, assuming current data collection methods have applied consistently over this period of time, it appears that there has been very little improvement in recent years. Police reported fatalities has been relatively constant over the past four years, whereas it has improved substantially in other countries. For example, one of the most recent international comparison data, published by the International Transport Forum, shows that Poland's fatality rate has improved by approximately 15% between 2010 and 2013, and the best performing countries in Europe have continued to improve.⁶

64. The socio-economic cost of road trauma in Ukraine has been estimated at \$4.5 billion,⁷ approximately 3.4% of the country's Gross Domestic Product in 2014. The cost comprises material losses through damage to property and lost productivity, as well as human losses through serious or fatal injury. The budgetary impact is likely to be felt most directly in Ukraine's health services through on-scene responses to road crashes and hospitalisation of large numbers of injured road users. The scale of the losses mean that it is highly likely that very cost-effective measures can be put in place by the Government of Ukraine to reduce economic and budgetary losses associated with road trauma.

65. Table 2 provides the contributing factors for fatalities identified by Police over an eight year period from 2006-2013. The primary issue highlighted here is speed, including those factors such as safe distance and overtaking which are likely to also be associated with driving too fast to avoid a crash. Intersection factors are also notable, as are the various pedestrian factors.

⁶ IRTAD (2015), *Road Safety Annual Report 2015*. International Transport Forum, Paris.

⁷ TRACECA project note, calculated from the methodology used in IRAP evaluations and based on Dadah and McMahon.

Table 2: Contributing factors identified by Police (2006-2013)

Main violations	Deaths	
	Number	Percentage
Speed related	19526	39
Manoeuvring	8005	16
Entry to oncoming lane	6793	14
Crosswalk in wrong place?	5060	10
Cross walking unexpectedly	4799	10
Safe distance	1586	3
Passing through intersection	1491	3
Drink drive	1218	2
Pedestrian crossing rules	1152	2
Overtaking	1126	2
Sleeping when exhausted	977	2
Cross walking when drunk	954	2

Source: Ministry of Interior of Ukraine

Note: Some deaths may be counted under two or more violations as the purpose here is just to show the major contributory causes leading to death and injury on Ukraine roads

66. Combined with Ministry of Interior data regarding user involvement in crashes, key issues appear to be:

- i. Speed was identified as a contributing factor in 39% of fatalities
- ii. Intersections are the site of 30% of fatal crashes
- iii. Pedestrians account for an estimated 38% of fatalities
- iv. Truck and bus crash victims account for an estimated 24% of fatalities.

67. There are many other specific and systemic issues, including alcohol which is addressed further in Section D, but these are all areas where significant improvements can be made, with well proven interventions. This view was reinforced by some simple traffic safety observations during the course of this study, as noted below.

Figure 2: Traffic safety observations during study



Traffic police patrols appeared to be more static than mobile. A well planned and highly mobile deterrent-based enforcement focus is likely to be highly cost effective. The initial costs are lower than engineering treatments but need to be sustained each year to maintain improvements.



Significant infrastructure deficiencies were observed, such as this guardrail which has no cushioning treatment at the terminal. Safety retrofitting of existing infrastructure is likely to be highly cost effective. The initial costs are higher than mobile enforcement, but the benefits last longer.



Safe system management framework

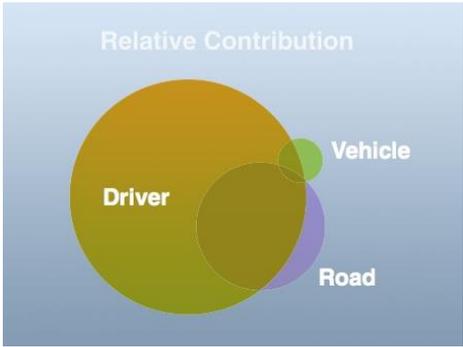
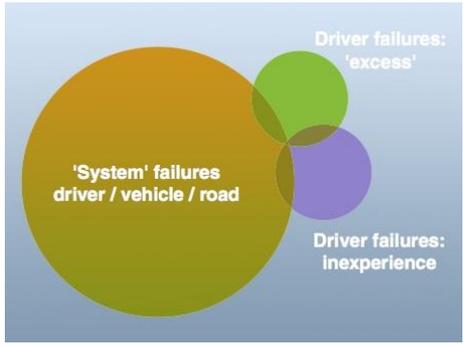
68. There have been many ways of analysing road safety historically. It was often stated by Ukrainian counterparts during the course of this study that human factors were the cause of the vast majority of road crashes in Ukraine. This is a very common statement in many countries around the world. However, research shows that very simple and human mistakes, inattention or common lapses of judgement are the cause of over half of all fatal crashes, and 90% of all non-fatal crashes.⁸ Deliberate and excessive behaviours are the cause of relatively very few serious road crashes, as summarised below.⁹ To avoid mistakes resulting in death or serious injury, the focus of analysis and action in best performing countries is now on system failures rather than behavior alone.

69. As it seeks to *protect* rather than *perfect* human use of the road transport system, the systems based approach is now recognised throughout the world as the basis upon which good road safety practice rests. It was introduced first in the best performing countries such as Sweden and the Netherlands and is also now being pursued widely in Europe, North America and Australasia.

⁸ L Wundersitz, M Baldock (2011), *The relative contribution of system failures and extreme behaviour in South Australian crashes* (CASR092), Centre for Automotive Safety Research, Adelaide.

⁹ R Kimber (2005). *Traffic and accidents: Are the risks too high?* Transport Research Foundation, London.

Figure 3: Conceptual shift from user blame to system failure

<p>Outmoded concept – user blame</p> <p>Classifying apparent crash cause into failures of the driver, road and vehicle leads to driver error being identified as the problem, present in 95%, and dominant in 2/3rds of crashes. This traditional analysis essentially placed dominant safety responsibility on the road user. It tended to result in the user being blamed for operational mistakes.</p>	
<p>Modern concept – system failure</p> <p>Classifying crashes into failures of the driver, road and vehicle system (“system” failures), leads to a small number of crashes identified as resulting from driver failures of excess or inexperience. This modern analysis places much more responsibility on those organisations which can impact on the safety of the system and supports the notion that operational mistakes by road users should not result in death or serious injury.</p>	

Source: R Kimber (2003) “Traffic and Accidents: Are the Risks too High?” Transport Research Foundation, London.

70. A summary of the principles applying to this “safe system” approach is found in Box 1. Ukraine already faces a significant challenge to substantially reduce road trauma, and the socio-economic losses that it brings. Applying this safe system approach, although challenging, has to be undertaken, and go well beyond the task of building societal and political support for improvement, and into much more complex issues regarding the management of different elements of the transport system.

71. Like many other countries looking to address their road trauma problem, Ukraine will need to address a legacy road transport system which can simply not deliver safe travel. Over time, a road safety management system is needed which focuses on the elimination of fatal and serious injury, much more like the expectation of safety in rail, maritime and aviation transport, and the continual strengthening of that system so that it is capable of ensuring safe travel.

72. WHO’s *World Report* noted that “a key factor in tackling the growing road traffic injury burden is the creation of institutional capacity across a range of interlinking sectors, backed by both strong political commitment and adequate and sustainable resources.” In response, the World Bank/GRSF published country guidelines in 2009 (updated in 2013) which codified a complete road safety management framework, and provided guidance to assist national, state, or local jurisdictions in implementing it.¹⁰

¹⁰ Bliss T, and Breen J (2009). *Implementing the Recommendations of The World Report on Road Traffic Injury Prevention: Country guidelines for the conduct of road safety management capacity reviews and the related specification of lead agency reforms, investment strategies and safety programs and projects*. Global Road Safety Facility, World Bank, Washington.

Box 1: Towards the elimination of fatalities and serious injuries – the safe system approach

The Organization for Economic Cooperation and Development and the International Transport Forum published a landmark report on the safe system approach in 2008. It was inspired by the reframing of road safety as a societal health issue in the best performing countries such as the Netherlands and Sweden, and prompted by ambitious road safety targets set in Europe and other high-income countries such as Australia and New Zealand.

The report documented what has become known internationally as the “Safe System” approach, now recognised throughout the world as the basis upon which good road safety practice rests recognised. The principles of this approach were described by *Towards Zero* in the following terms:

- addressing all elements of the road traffic system in an integrated way
- emphasising the reduction of death and long-term injury rather than the prevention of crashes which as the *World Report* highlighted is an unrealistic goal
- challenging the fatalistic view that road traffic injury is the price to be paid for achieving mobility and economic development by setting a societal goal with step-wise targets to eliminate road deaths and serious injuries in the long-term which can motivate and encourage all involved
- accentuating the shared and accountable safety responsibility of designers and users of the road network for achieving road safety results and promotes a shared vision amongst citizens, public, private and not for profit organizations regarding the ultimate safety ambition of eliminating fatal and serious injury
- aiming to develop a road transport system better able to accommodate human error, commonly achieved through better management of crash energy, so that no individual road user is exposed to crash forces likely to result in death or serious injury.
- using social and economic analyses to understand the scale of the trauma problem, and direct investment into those programs and locations where the greatest potential benefit to society exists
- demanding equity in addressing the safety needs of both motorized and non-motorized users, and aligns well with the goals of sustainable development and other societal objectives such as improved local air quality, greenhouse gas reduction, energy security, poverty reduction, social inclusiveness and occupational health and safety
- necessitating the strengthening of all elements of the road safety management system, especially institutional management functions, to achieve sustainable success.

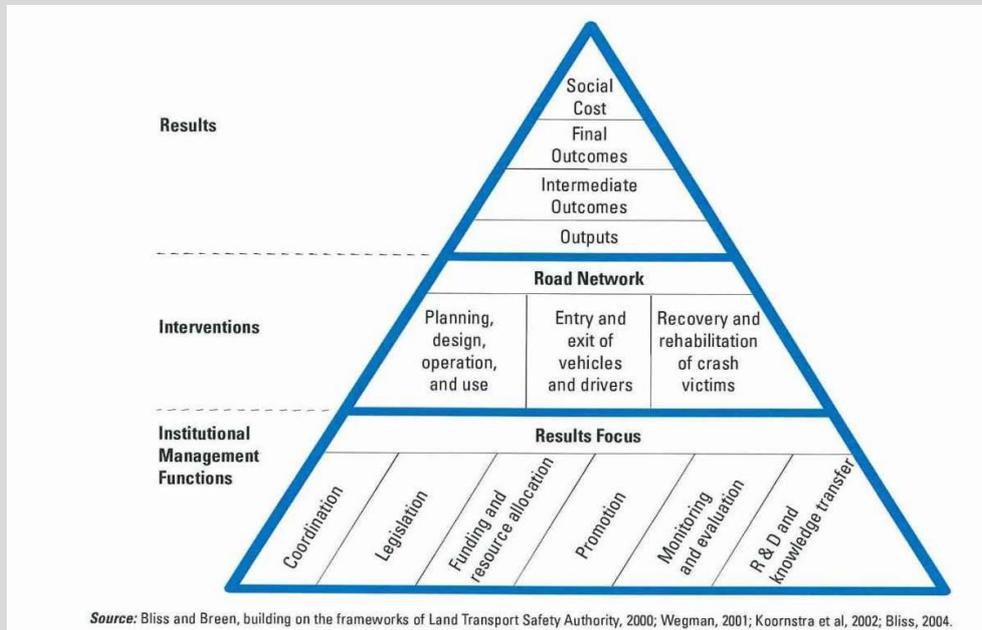
This approach should not be regarded as fixed – the ideas and practices will continue to evolve. But it stands in stark contrast to largely discredited approaches of the past which have presented road safety as a task of perfecting human behaviour or (contrary to demonstrated injury prevention evidence) relied on education and information campaigns to reduce road trauma.

A shift towards this safe system approach is strongly recommended for Ukraine.

Source: OECD/ITF (2008) “Towards Zero Ambitious Road Safety Targets and the Safe System Approach”, Paris.

Box 2: A management framework for a safe road transport system

The GRSF guidelines were developed from a practical, evidential and analytical base included a road safety management framework which addresses road safety as a production process with three interrelated elements: *institutional management functions* that produce *interventions* that in turn produce *results*.¹



A key feature of this framework is the specification of desired road safety results including not just final outcomes (such as fatalities and serious injuries), but also intermediate outcomes (such as traffic speed) which are tied to the delivery of outputs (such as tickets issued to speeding drivers) from evidence based interventions (such speed enforcement supported by targeted advertising).

Interventions are focussed on the road network because this is where crashes occur and injuries are suffered, where people travel, where vehicles are permitted to be used, and where emergency services must recover crash victims. Interventions related to the road network, to vehicles and drivers, and to crash victims can be designed to either set a higher quality of safety standards and rules, or achieve better compliance with those standards and rules.

Another key feature of the framework is the institutional management functions which drive more effective interventions and better results. When given full effect, these functions provide direction on how cost-effective interventions are identified, prioritised, scoped, funded, targeted and delivered. They also assist in building support for sustained road safety improvement and for building the human, financial and institutional capacity needed to sustain that support, and transform it into improved safety results within the community.

The framework has been used to support road safety strategy and development in a large number of middle income countries throughout the world as well as countries such as Serbia and Poland with similar institutional contexts as Ukraine. It provides an analytical platform from which stakeholders can consider the best steps forward for road safety in Ukraine, particularly at an institutional management level.

Source: Bliss and Breen (2009) “Implementing the Recommendations of the World Report”.

73. A summary of this road safety management framework is found in Box 2. It provides the analytical basis for this study, and emphasises the critical links between institutional management functions of key agencies, the interventions they deliver and the results which they achieve. This management framework has been successfully used in a wide range of middle income countries across the world, and in Europe, including Poland and a number of South Eastern European countries.

74. The framework is directly relevant to the road safety responsibilities of many different agencies in Ukraine, such as:

- i. The provision of a safe road traffic environment by Ukravtodor and by local road network operators, so that travel speeds match the quality of the infrastructure, and a wide variety of motorised and non-motorised users can safely travel along and across the road network
- ii. The effective regulation of motor vehicle drivers by the Ministry of Interior, so that all drivers are fully competent and licensed to drive and comply with key traffic law at all times
- iii. The effective regulation of motor vehicle safety by the Ministry of Infrastructure, particularly requirements for modern safety technology in any new or used vehicles that may enter the Ukrainian fleet, and safety requirements for commercial transport operators
- iv. The effective enforcement of traffic rules by Police, through the use of high profile deterrent based policing methods so that there is a high level of compliance with law applying to key issues such as speeding, drink driving and non-use of seatbelts
- v. The licensing support provided by the Ministry of Health, and the Ministry's critical role in managing trauma response systems to reduce the injury consequences of crashes when they do occur.

75. Many other significant roles are played by other organisations, particularly outside of government. Over time, as a road safety management system is developed within Ukraine, the goal is to build up the contribution of all actors to the safety of Ukrainians on the road.

Multilateral support for road safety in Ukraine

76. The road transport partnership between the World Bank and the Government of Ukraine consists of a succession of lending operations. The Road Safety Improvement Project (RSIP) was initiated in 2009 and closed in November 2014. This was followed by RSIP2, initiated in 2012. A new lending operation in the road sector is currently being discussed between the Bank and the Government of Ukraine. It is intended that the road safety focus will continue to develop and the Government of Ukraine, through the State Road Services of Ukraine (Ukravtodor) and the Ministry of Interior, requested World Bank support to undertake a review of road safety management capacity in Ukraine.

77. The project builds on increasing engagement on road safety with a variety of multilateral partners – the European Commission, The European Bank for Reconstruction and Development and the European Investment Bank. Activity has included a European Road Assessment Program (EuroRAP) analysis which was

undertaken in 2013,¹¹ the results of which are now being implemented in association with the World Bank.

Objective of this study

78. The primary objective of this report is to contribute to improved road safety institutional capacity by reviewing road safety management capacity in Ukraine, following the safe system approach, with recommendations on:

- i. road safety management capacity in Ukraine, including regulatory frameworks, institutional arrangements, and financial available funds for road safety
- ii. an institutional organization for road safety management and financial scope for operation based on international best practices
- iii. a national strategy for road safety
- iv. suggested projects, timeline and terms of reference for the rollout of a safe system road safety program consistent with scaling up Ukraine capacity to manage road safety.

79. The report first addresses the most pressing road safety management issue in Ukraine, the establishment of a lead agency, road safety management capacity issues, then the preparation of a multisectoral road safety strategy, and finishes by proposing a series of strategic road safety investment packages.

80. The focus is on initiating system focused solutions and demonstrating their effectiveness and sustainability in improving road safety in an integrated fashion. The report seeks to apply the lessons learned from past experiences in Ukraine and from good practice internationally. The project was funded by the Global Road Safety Facility (GRSF) which has led international development work in road safety management, including the framework applied during this study.

European support

81. The EU-Ukraine Association Agreement 2014, and the EU-Ukraine Association Agenda 2015 to prepare and facilitate implementation of the Agreement is also significant. The Agenda specifically references cooperation to update the national strategy and programme for improving road safety, and this report has been prepared to support and extend this partnership based approach to road safety in Ukraine.

82. In the context of this agreement, it is important to note, in addition to more generalised transport management support including the approximation of road transport standards according to EU acquis, the following road safety focused development projects being supported by European institutions:

- i. EU support of the Transport Corridor Europe-Caucasus-Asia (TRACECA) regional road safety initiative which has seen specific technical assistance in road safety, including the preparation by Ukrainian stakeholders of a short-term action plan and an analysis of data system requirements

¹¹ S Lawson (2013), Ukraine Safer Roads Investment Plan, EuroRAP.

- ii. EU support for a twinning project through the Ministry of Infrastructure to strengthen commercial road transport safety standards, and institutional capacity of the Ministry in road transport safety management
 - iii. EU support for a twinning project through the Ministry of Interior to strengthen road traffic enforcement planning in Ukraine
 - iv. European Investment Bank project to support the modernisation of safe road design construction and management standards and practices in Ukravtodor, including the introduction of road safety audits for infrastructure.
83. Each of these projects reinforce a systems approach and has a significant contribution to make. They address many of the concepts and proposals developed in some form through this report.

C A Lead Agency for Road Safety

85. The identification of a lead agency in government to guide the national road safety effort is the first recommendation of WHO's 2004 *World Report*. Many arms of government are needed to deliver essential road safety services – for example, a national highways agency, local roads agencies, motor vehicle and driver regulator, traffic police, and health authorities. A lead agency is required to orchestrate and align specific road safety interventions and management functions across all government agencies (and non-government actors) to support achievement of intermediate and final safety outcomes.

86. This requires the agency to regularly engage at a technical, management and leadership level with the key partner agencies, and with the government Minister(s) who hold political responsibility for road safety. Wider partnerships with business and civil society institutions are also needed to generate a broad societal response to the road safety problem. All successful agencies adopt an outwards-facing partnerships-focused approach.

87. Whatever the organisational form in which they are established, the lead agency needs a clear political mandate to lead the government's road safety efforts across the various government agencies. This mandate does not exist in Ukraine. Within an ex-Soviet system of government where functions and powers are legally prescribed in significant detail, this lack of mandate for road safety creates a major barrier for reducing road trauma. It constrains not just the decisions made by Ministers but basic cooperation and information sharing between agencies.

88. This problem is recognised in Ukraine, but previous efforts to address the problem have failed. A Road Traffic Safety Coordination Council of Ministers was established in 2006, but it did not have any dedicated professional support and only met briefly. It does not exist in any form now. It is recommended that the Government of Ukraine establishes a formal legislative mandate for a lead agency to guide the national road safety effort, and that this is supported by the establishment of a fulltime work group of road safety professionals charged with giving effect to that mandate, and so becoming the core of the lead agency.

Functions of the lead agency

89. Draft law on road traffic and its safety (draft road safety law), was released in September 2015 and would, if implemented, go a long way towards addressing this fundamental road safety problem in Ukraine. The draft road safety law formalises the powers of the Cabinet of Ministers in relation to road safety, and of a National Highway Safety Bureau (NHSB). Under this legislation the NHSB would have the essential powers of a lead agency to develop and manage the implementation of national road safety programs, and coordinate the road safety activity of ministries and other central executive authorities, local governments, enterprises and civic organisations. The powers of and requirements for key entities within Ukraine to improve road safety is also specified.

90. It is important at this point to recognise that the draft road safety law is subject to ongoing discussion and debate. This study analyses the current draft law as presented, and seeks only to inform the consideration and judgement of all stakeholders who are responsible for road safety performance in Ukraine. The draft road safety law would be an important foundation for the establishment over time of a

comprehensive road safety legislative structure, which attracts broad support amongst all stakeholders and addresses key road safety management functions, mechanisms and interventions.

Box 3: The core functions of a lead agency

Good road safety governance practice suggests that the “functions” or “powers” or “competences” of the lead agency for road safety in Ukraine should be set in legislation. Based on the institutional management functions codified by the Global Road Safety Facility, a good practice set of core functions for a lead agency would be:

Results focus	<ul style="list-style-type: none"> • Develop, implement and continually improve a road safety management system including a road safety vision, road safety targets, and interventions and management processes to achieve road safety targets • Develop and oversee implementation of road safety strategies and plans to address key areas of road safety concern regarding the safety of roads, vehicles, users, and post-crash response
Coordination	<ul style="list-style-type: none"> • Establish and manage mechanisms between government agencies, and community, industry and business interests as required, to coordinate the planning, delivery and management of road safety activity
Legislation	<ul style="list-style-type: none"> • Review and advise on legislative and compliance mechanisms that have a significant impact on road safety, including planning design and use of road networks, regulation and compliance for motor vehicles motor vehicle drivers and commercial transport operators, and post crash recovery and treatment
Funding and resource allocation	<ul style="list-style-type: none"> • Develop and oversee implementation of multi-year and multi-agency road safety investment plans which support sustainable funding of road safety activity and the integration of safety within relevant government projects and programmes
Promotion	<ul style="list-style-type: none"> • Develop and implement programmes to promote effective road safety practices amongst government, community, industry and business interests, and to support specific road safety programmes
Monitoring and evaluation	<ul style="list-style-type: none"> • Develop and manage monitoring and evaluation mechanisms, including data management systems, that are necessary to report on and promote improvement in the delivery of road safety activity and programmes
Research and development, and knowledge transfer	<ul style="list-style-type: none"> • Develop and implement road safety research programmes that support monitoring and improvement of road safety activity, and knowledge transfer programmes which promote greater road safety management capacity amongst government, community, industry and business interests

91. The draft legislation which has been prepared is very detailed. In strict legislative terms this creates a risk of over prescribing requirements and not addressing essential matters of institutional responsibility. The draft legislation does appear to address the key management functions for the establishment of a lead agency for road safety. For example, the draft legislation includes the establishment of a Road Safety Fund which would comprise at least 10% of total road infrastructure expenditures by Government, and at least 20% of traffic fine revenue. It also includes requirements for the preparation of national road safety programs, and road safety programs for the various arms of Government, as well as funding, monitoring and evaluation activity. Significant responsibilities appear to be appropriately assigned to the NHSB.

92. A good practice set of legislated functions for a lead agency, based on the management functions codified by the GRSF, are provided in Box 3. It is recommended that the draft legislation is reviewed against these to ensure all essential responsibilities of the lead agency are addressed.

93. It is also recommended that the legislation clearly directs the agency to give priority to the promotion of safety – “safety” meaning the protection of Ukrainian road users from fatality or serious injury while using the road – over other road traffic management matters. This is because the draft road safety law refers in places to the responsibilities of the NHSB to “traffic and its safety”. At this point in Ukraine’s road safety development, an agency established for “traffic” can be expected to focus on the quickest possible movement of motor vehicles throughout the road network. This has been the dominant road transport philosophy across the world over the last century, and may entrench current poor safety performance, as high motor vehicle traffic speed is a key factor in the risk of a crash occurring and the severity of any resulting injuries. The critical importance of managing traffic speed is addressed further in Annex 1. By contrast, an agency which is established for “safety” can be expected to focus on changing the current road transport philosophy in Ukraine to a safe system approach and delivering sustainable improvements in safety performance.

Institutional base of the lead agency

94. Lead agencies can operate effectively within a variety of organizational forms – they can be established as a specific office under the head of state, or as a work group which is part of a ministry of transport, a state highways agency, or a motor vehicle regulator. Most lead agency functions in Europe are held within a transport ministry or a national roads authority, but there is no one answer to where a road safety lead agency is established within Government.

95. In Ukraine, the lead agency could be a stand alone office within the political office of the President or the Prime Minister. The key advantage of this is the very strong political signal that this would give to the need for a major new road safety effort. More than one stakeholder referred directly to the galvanising effect on road safety that was created when French President Jacques Chirac announced that road safety would be a priority of his second term. The key disadvantage of this is that political imperatives change, and this may risk road safety being regarded as a short term interest rather than a sustained public health reform agenda.

96. It is recommended that the lead agency function is urgently established within either the Ministry of Interior or Ministry of Infrastructure. Properly mandated, the lead agency would benefit at an early stage in its development from an established set

of planning, budgeting, delivery and accountability structures. The location of the lead agency inevitably affects how it undertakes its role, and the implications of establishing the lead agency in the Ministry of Interior or the Ministry of Infrastructure are discussed below. A key point for consideration is how effectively the lead agency may be able to lead a significant strategic shift towards a safe system approach to road safety.

97. The Ministry of Interior performs a number of the lead agency functions including coordination through the Road Safety Forum, preparation of legislation, monitoring and evaluation, but does not have an effective mandate to perform the role. It is responsible for traffic law enforcement, and has taken an active role in raising awareness about road safety management issues. The Ministry's traffic policing function is undergoing wide-reaching reform and will be delivered within a general duties structure. This is discussed further in Section D, but for now it needs simply to be noted that the results of this may in the short term hamper rather than enhance traffic policing. It may be important that it holds the lead agency function and is given a strong mandate to support current police reform – for example, preparing practical guides for improved traffic enforcement activity, or delivering marketing and communication activity to support improved traffic enforcement. But it may also be constrained in exercising informal authority as a result of its current position and role in road safety.

98. As of February 2015, the Ministry of Infrastructure has established within its structure the State Service of Ukraine for Transport Safety (Ukrtransbezbeka).¹² Ukrtransbezbeka regulates all aspects of commercial road, rail and maritime transport safety, and vehicle safety standards. Combined with Ukravtodor, the national highways agency, this Ministry of Infrastructure responsibility for two strategic delivery agencies would provide a strong basis for adding the road safety lead agency function and the tools to more efficiently manage road safety. But that function would clearly need to be managed in a way which is clearly driven by road safety objectives and did not inadvertently give the impression of treating road safety as an element of infrastructure development and used as justification for road investments. Indeed, in either Ministry, the lead agency function would clearly need to be managed in a way which reinforces a partnerships-based, multi-sectoral approach required to deliver sustained road safety improvements.

99. A decision on a sustainable base for the lead agency is required. In many successful countries, the lead agency is an independent institution reporting to the Head of State or established as a distinct Ministry, and this should be the goal for Ukraine. In the short term, a quick interim structure is needed to start the process of sustainable improvements. One way of determining which Ministry hosts the lead agency in the short term is to assess where the greatest political interest in the key agency functions lie – particularly given that while significant societal benefits are easily communicated, some important safety decisions may prove unpopular with some groups within Ukrainian society.

¹² Ukrtransbezbeka is a central executive authority instructed and coordinated by the Cabinet of Ministers of Ukraine through the Minister of Infrastructure. It has extensive powers relating to the safety of commercial road, rail and maritime transport operations, as well as powers relating to economic and environmental regulation of the surface transport sector. The Head of Ukrtransbezbeka is appointed and dismissed by the Cabinet of Ministers of Ukraine on the basis of a proposal by the Minister of Infrastructure. Two deputies are appointed on the same basis.

Establishment of the lead agency

100. There are several models through which the NHSB can be established. An entirely independent entity could be established, a board could be appointed by government, or a separate functional arm of government could be created. It may be difficult for a fully independent entity to be successful given the need for sustained and coordinated government action across many agencies. A small board could be appointed by the President or the Prime Minister, in which case the appointees need to be effective safety advocates and be supported by a professional secretariat. A separate functional arm could be established similar to Ukrtransbezbeka which has a professional head, supported by two deputies.

101. Whatever governance form the NHSB takes, a professional safety capacity is essential. This professional capacity is required to ensure that all options prepared for decision are based on sound road safety management principles and evidence. A professional safety capacity is also required to ensure that the various agencies and stakeholders have been effectively engaged on the decisions which are being put forward, and to provide the necessary follow up to ensure that decisions made by the NHSB/lead agency are implemented by the relevant government agencies.

102. It is recommended that the NHSB/lead agency has its own accountabilities through the responsible Minister to Parliament, a physical office, permanent staff who form a professional Secretariat, an ongoing revenue and expenditure budget, and equipment to perform the task.

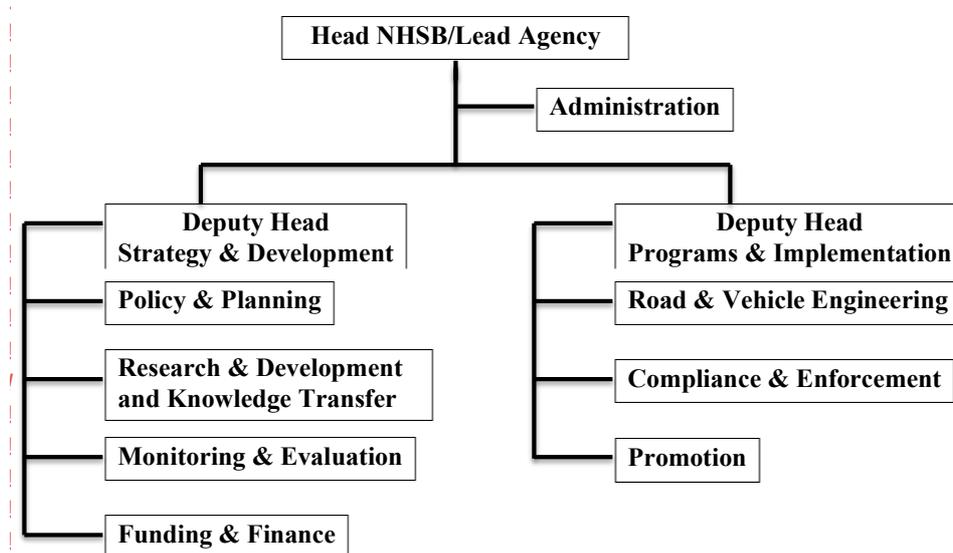
Operational structure

103. It is important to ensure the operational structure allows agency staff to:

- i. lead the analysis and provide program direction for critical road safety management functions, and road safety interventions
- ii. lead engagement with government agencies and other stakeholders towards achievement of the country's road safety goals.

104. A simple strategy-implementation structure is recommended for the potential NHBS Secretariat, as set out in Figure 5 below.

Figure 4: Possible structure for NHSB



105. A fulltime permanent Head of the NHSB is required who would have close working relationships with Ministers. The Head is responsible for leading the analytical and decision-making process necessary to provide the NHSB and the Cabinet of Ministers of Ukraine with options to effectively address key road safety issues in the country, and for representing and promoting road safety across all aspects of society.

106. It will be important that the executive Head of the NHSB is not only empowered and capable of delivering fully on the road safety purpose of the organisation, but is a strong leader of change in his or her own right. The Head must be capable of demonstrating effective collaboration across agency boundaries, and leading complex debates at the most senior administrative and political levels.

107. This simple operational structure for the lead agency is amenable to development and expansion over time as the lead agency is established. To start with, the structure should have at least one person responsible for each key function as described on the proposed organigramme.

108. It is proposed that ultimately the Head would be supported by two experienced Deputy Heads, capable of leading work programs that are dependent on the involvement and support of outside partners for success, and all other key activities. At the establishment stage one Deputy Head may be sufficient with some responsibility and staff subordinated directly to the Head.

109. The Head should preferably be selected competitively and it may be useful if for the establishment stage an experienced foreign specialist is considered to develop the institution. The appointment should be for at least three years to build accountability, attract serious professionals and avoid frequent changes of strategic direction.

110. All staff in such an organization must be capable of effectively leading work programs in their area of responsibility, and of working effectively through partnerships in order to achieve success. The agency would also need to be able to draw on sufficient funds to contract specialist or short-term contractors (for example, specialist research or statistical analyses) to meet program objectives. Annex 3 addresses in further detail the key roles played by all professional staff within the recommended structure, which could be established in the first instance with as few as six to ten professional staff.

Interim arrangements

111. Consideration is required to the interim funding and implementation of this structure over time, particularly given current budgetary constraints within Ukraine. Notwithstanding the need for the NHBS/Lead Agency establishment legislation to be passed, there is an urgent need to establish interim arrangements within the Government of Ukraine to guide the national road safety effort.

112. It is recommended that an interim National Road Safety Programme Group (NRSPG) is established to form the nucleus of the lead agency in advance of the NHSB/lead agency being established. The responsibility for establishing the NRSPG would lie with the Project Implementation Unit nominated by the Ministry of Infrastructure for the Road Sector Development Project currently being developed by the Government of Ukraine and the World Bank. This arrangement would allow for

essential lead agency functions to be performed in advance of the NHBS/lead agency being established, using the Project Implementation Unit structure.

113. The NRSPG would be mandated with:

- i. leading negotiation and coordinating implementation of the safety components of road transport investments negotiated with IFIs, and safety cooperation projects with the EU
- ii. supporting all aspects of the legal establishment of the NHBS/lead agency and, until establishment,
- iii. supporting a cross-agency leadership forum, the National Road Safety Programme Forum (NRSPF), to promote road safety improvement in Ukraine amongst key institutions, in line with the proposed functions of the lead agency.

114. Government accountability for the NRSPG would lie with the Minister of Infrastructure, who would consult with the Ministers of Interior and Health prior to taking any proposal to the Cabinet of Ministers of Ukraine. The NRSPF would be formed by the Chief Executives of the Ministries of Infrastructure, Interior, and Health, the Heads of Ukrtransbezbeka, Ukravtodor and the Chief of the new Patrol Police Department, and would make recommendations to the Minister of Infrastructure regarding the promotion of road safety in Ukraine.

115. It is recommended that the NRSPG is funded by the Government of Ukraine from a dedicated stable medium term source of funding with support from different IFIs, and comprise:

- i. four senior road safety personnel drawn on fulltime secondment from the key Government agencies (with funding allocated accordingly) for a period of up to 60 months
- ii. senior level road safety management consultants (along with ancillary support services) funded by IFIs, particularly if there are budget problems, appointed for a 24 month period funded (extendable to 60 months) through road transport investment projects.

116. This would require in the first instance a very modest reallocation of existing resources from across the Ministry of Interior, the Traffic Police, the Ministry of Infrastructure, Ukravtodor, and possibly the Ministry of Health. Such staff would be selected on the basis of their road safety expertise, and capacity to fulfil the functions within the structure proposed in Figure 5, and further outlined in Annex 2.

117. If agreed, this resourcing of the NRSPG could be supplemented by further short-term consultancy staff appointed to support delivery of road safety work programmes funded by international road safety partners including the World Bank, the European Investment Bank, and the European Union. Thus, a multidisciplinary road safety hub would be created to support road safety management and strategy activity on an interim basis until the establishment of the NHBS/lead agency. A proposed work program for the NRSPG is set out in Section F.

118. The application of investment funds recognises the critical role which the NATS and a professional fulltime Secretariat will have in improving road safety in Ukraine. That said, key goals for the NTSPG will not only be delivering on this work programme, but securing ongoing funding sources for the NHBS/lead agency once

established, and the transformation of the NTSPG into the professional fulltime Secretariat which is required to support the NHSB.

D Building Road Safety Management Capacity

119. The first and overriding management capacity issue in Ukraine is the absence of a lead agency. This section goes on to look more fully at the extent to which the performance of various management functions within Ukrainian institutions are capable of generating improved safety outcomes, and makes recommendations regarding the strengthening of these functions in Ukraine.

Results focus

120. In simple terms, over time, a road safety management system needs to be developed for Ukraine which ensures the road safety partner agencies:

- i. Understand the primary road safety issues in Ukraine
- ii. Understand the critical need to improve road safety in Ukraine
- iii. Use effective management systems that can respond to those issues
- iv. Deliver well designed interventions, and
- v. Achieve sustainable reductions in road trauma.

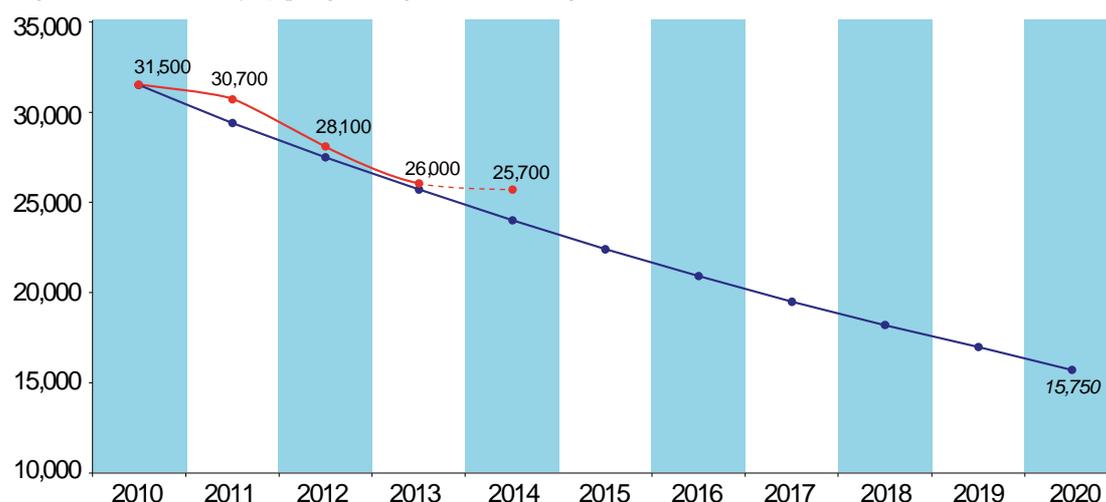
121. This results focused approach needs to encompass all aspects of a good practice road safety management system and drive all parties towards achievement of a single main objective. Good practice involves collaborative engagement between key road safety partner agencies in central government and external stakeholders (ideally including local government, non-government organisations, and the private sector) to develop a jurisdictional road safety strategy. The national strategy should preferably be adopted and/or signed off by the Head of State and responsible minister or the Parliament.

122. Road safety strategy setting in Ukraine is addressed further in Section E. At this point, in a discussion focussed on results, it is sufficient to note that an effective strategy is likely to be supported by two key elements:

- i. A results management framework which includes ambitious and achievable targets, as well as intermediate indicators and institutional outputs that will allow performance to be more precisely tracked and managed over time
- ii. A funded multi-agency action plan to implement the strategy, which is focused on the evidence based interventions necessary to positively impact on the intermediate outcomes being sought.

123. Setting ambitious, realistic and achievable road safety targets, based on an understanding of the interventions that will be required, has been an important element of progress in many of the best performing countries. The European Union has set a 50% fatality reduction target for this decade (2011-2020), and for the previous decade. Targets are most effective when they are an extension of a complete road safety results framework which addresses not only overall results in terms of final fatality and injury outcomes, but the critical intermediate outcomes which become the focus of the services delivered by institutions. At the most simple level, targets allow progress to be tracked and facilitate action being taken if the desired results are not being achieved, as illustrated by the EU report against road safety targets in Figure 3.

Figure 5: EU road safety progress against 2020 targets (Provisional 2014)



Source: European Commission (2015) *Road Safety in the European Union: Trends, statistics and main challenges March 2015*, Brussels.

124. Best practice road safety management incorporates a results framework with three distinct components – final safety outcomes (the results being sought), intermediate safety outcomes (the intermediate results to assess progress in key areas), and institutional outputs (the specific deliverables implemented to affect the intermediate results). Elements of a results framework for Ukraine to work towards are set out in Box 4. A results framework including current indicators could be populated now, and other indicators could be the initial focus of a research project including baseline data whenever available. Ideally, specific targets are set for each measure. The goal over time is for a complete set of data that can be reported, even if some indicators are only measured periodically, such as every three years.

125. It is recommended that a road safety results framework is developed on a collaborative basis across the key government agencies and become a focus of management and leadership attention to drive road safety improvement over the remainder of the decade. The framework which is developed should be aligned to the priorities set out in a road safety strategy document, but should not be constrained in the first instance by current data issues, such as the fatality recording system which does not meet the international standard of capturing all road crash deaths within 30 days of the crash. Where there are gaps in data, or quality issues in data, these should be highlighted, and given priority in future investments in research, monitoring and evaluation activity.

126. A results framework is recommended in the strategic investment packages outlined in Section F. Investment in developing a results framework for Ukraine, and the key data that is required, will allow for a stronger road safety management system to be built over time. As a first step, it is recommended that the Government of Ukraine set a fatality reduction target through to the end of the decade which is commensurate with the European target of a 50% reduction over the course of the decade – essentially improvement of five percentage points per annum. There was an average of 4935 fatalities recorded over the four years 2010-13. Assuming similar levels of performance in 2014 and 2015, a 25% reduction over the second half of the decade would see a target of no more than 3700 fatalities by 2020.

Box 4: A results framework for Ukraine to work towards

A results framework for Ukraine to work towards is set out below for consideration, adjustment or expansion as necessary, and approval by all road safety partner agencies. The data needs should then be considered for their ability to be collected and analysed, and their collection prioritised and funded. Work on this framework should start as soon as possible. The approved framework should be reviewed regularly (for example every three years) to reflect progress and emerging challenges.

Final Safety Outcomes

The following final safety outcomes are the highest level results being sought, and require good quality crash data:

- Reduced fatalities
- Reduced serious injuries
- Reduced social cost of road trauma.

This data should be able to be disaggregated by crash location, gender, age, user type, crash type, and road type. The number of fatalities per 100,000 people should be used to compare performance with other countries.

Intermediate Safety Outcomes

Intermediate safety outcomes are important to assess improvement in key indicators and typically require scientifically conducted observational surveys.

- Improved safety star rating of infrastructure (EuroRAP)
- Lower average traffic speed (rural & urban)
- Lower average age of vehicle fleet
- Higher vehicle compliance with testing standards
- Improved safety star rating of vehicles (EuroNCAP)
- Community attitudes to road safety
- Emergency medical services response times
- Less drivers exceeding the legal speed limit
- Less drivers exceeding the legal drink driving limit
- More use of seatbelts.

If these indicators improve, it can be said that the safety of the Ukrainian population has improved.

Institutional Outputs

Output or delivery data needs to be included to identify where effort is needed to address safety issues. Institutional output indicators should logically connect with intermediate safety outcome indicators, and the following are recommended for consideration:

- Kilometres of footpath and number of pedestrian crossing points constructed/upgraded
- Number of intersections and blackspots treated for safety improvements
- Number of licence sanctions restricting the legal opportunity for offenders to drive
- Number of vehicles inspected, and number of vehicle sanctions removing unsafe vehicles from the road network
- Number of commercial operator licences issued/renewed, number of operator sanctions restricting the legal opportunity for offenders to offer services
- Number of breath alcohol tests administered, and legal actions taken
- Number of speeding tickets issued
- Number of legal actions taken regarding unrestrained motor vehicle occupants.

A managed approach

It will take time to develop a full schedule of indicators which allow performance to be evaluated and changes made to achieve the best road safety results.

Coordination

127. Road safety requires a determinedly multi-sectoral approach, where partner agencies first come together to agree on strategy and then take responsibility for delivering their own outputs in concert with their partners. This approach requires institutional, legal and financial support, but also inevitably involves a degree of uncertainty. It requires individuals with highly professional capability and the political and/or legal mandate to act effectively across organisational boundaries. The most effective government agencies in road safety adopt an open approach with their partners, sharing data and information about safety performance and routinely discussing joint strategy and tactics with key partners to tackle the major road safety challenges which they collectively face.

128. In Sweden a central body, the Group for National Road Safety Cooperation (GNS), coordinates activity between the Swedish Transport Administration (which manages road safety operations under direction from the Ministry of Enterprise and Innovation) and the Swedish Transport Agency (which has regulatory responsibilities), local authorities, the occupational health and safety authority, and police. The National Society for Road Safety and other key partners from the traffic safety sector are additional members of this group.¹³

129. Some of the longest standing good practice coordination mechanisms within government are in Australia and New Zealand.¹⁴ In New Zealand, the National Road Safety Committee (established in 1992, and comprising the chief executives of transport, highways, police and insurance agencies) collectively sets road safety strategy, oversees implementation, and provides a single line of advice to Government. This highly structured approach to road safety coordination has evolved to such an extent in Victoria, Australia, that the primary investment in the safety of the road network comes from the State-owned injury insurer, not from the government accounts.

130. As well as the establishment of a fulltime professional work unit, a full coordination structure is required. This structure needs to link high-end political mandate and decision making through to the road safety agencies within the Government of Ukraine, through to the professional safety leaders within those agencies, and the range of business and civic organisations which involve themselves in the national road safety effort. The coordination structure would be the primary institutional mechanism through which the NHSB performs its lead agency functions.

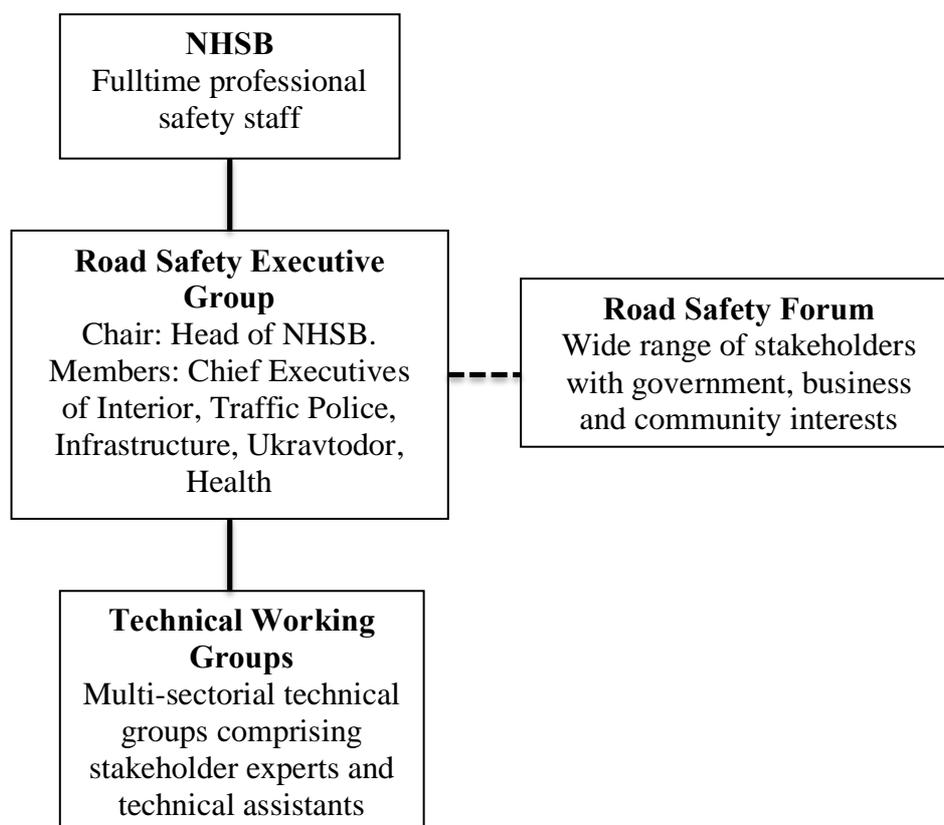
131. As the NHSB is established under law, it has been proposed that an interim step is taken through the establishment of a National Road Safety Programme Group as a shadow lead agency, and a National Road Safety Programme Forum through which the necessary coordination activity takes place. However, this should not be seen as a longer term substitute for a formal governance and coordination mechanism for road safety being established in Ukraine.

132. Ideally established in legislation, the recommended coordination structure is set out in Figure 6, which should be reflected in the legislation which establishes the NHSB.

¹³ A Lie, J Strandroth, C Tingvall (2015). *Government Status Report, Sweden*, Proceedings of Enhanced Safety of Vehicles Conference, Paper No.15-0466-G

¹⁴ A Bliss, J Breen (2009).

Figure 6: Recommended road safety coordination structure



133. The exact nature of this coordinating structure may need to be adjusted – for example, if the NHSB is established in a different manner than that which is proposed in draft legislation. For now, the following broad roles are proposed:

- i. NHSB Secretariat – a fulltime professional safety organisation which drives road safety analysis and management in Ukraine, advocating within Government and the community for significant improvements in road safety, and coordinating delivery across the various arms of Government
- ii. National Road Safety Executive Group – this body ideally comprises the heads of the Government agencies with principal accountability for road safety. It meets regularly, convened and chaired by the Head of the NHSB
- iii. Road Safety Forum – this body provides an essential conduit between the community and the Government institutions of Ukraine which are charged with protecting the safety of the community on the road. Ideally, it would meet two to three times a year, be supported by the NHSB Secretariat and comprise representatives of peak bodies for commercial freight and passenger operators, for private motorists and other road users, as well as civic and business entities
- iv. Technical Working Groups – these are established by the Executive Group for specific time-bound tasks as required to implement the national road safety strategy.

134. The focus of this study is on national road safety management systems and performance, and the findings and recommendations reflect this. It can nevertheless be expected that the capacity and performance of local government administrations will become increasingly important as national issues are addressed, and national road safety performance is improved. The role of local government should therefore be considered as this coordination structure is developed.

135. It is positive to note that the Road Safety Forum exists already, but its effectiveness is constrained by not being linked with any mandated agency responsibilities for road safety management within the Government of Ukraine. The importance of this forum cannot be underestimated, and its role needs to be formalised within a wider road safety coordination structure for Ukraine. The goal is not only to ensure good communication and links regarding Government road safety policy and investment. The goal is to build a climate of support for road safety within Government, Parliament, and the wider community to support future improvements, and encourage significant organisations outside of Government to increase their own investment in road safety.

136. The insurance sector is an example of a commercial sector which the lead agency needs to establish relationships with, as this may assist data verification and research using insurance data.

Legislation, Standards and Compliance Systems

137. Legislation is regarded here as the full array of instruments (Acts of Parliament, Regulations, Directives, and technical standards recommendations and guidelines, even of a voluntary or declaratory nature) which set standards applying to the safety of the road transport system. These standards address:

- i. Planning, design, construction and maintenance of the road network
- ii. Entry, maintenance and exit of motor vehicles to the national fleet, including registration and ownership of the vehicles
- iii. Licensing of drivers and commercial operators of those motor vehicles, and the application of traffic rules to motor vehicle drivers, commercial operators, and other road users
- iv. Systems for auditing, testing, and licensing the safety aspects of roads, vehicles, drivers and operators
- v. Social insurance arrangements to support recovery, treatment and rehabilitation of victims of road crashes, as well as compensation.

138. While earlier discussion highlighted the importance of legislation to establish the NHTSB and provide it with the mandate to perform its lead agency function, the sheer breadth of legislation and standards poses a particular challenge for Ukraine. It may be useful to consider the establishment of an overarching road safety law, as a vehicle for managing change into the future.

139. Once the standards are set, compliance systems must be developed and deployed to ensure the standards are met. This requires:

- i. systems which make the key government agencies and the staff within those agencies accountable for taking action to prevent road trauma

- ii. an interlinking set of electronic registers and systems relating to motor vehicles, drivers and commercial operators which facilitate effective traffic law enforcement on the road by Police, and
- iii. strong audit and compliance activities which facilitate effective traffic law enforcement by the motor vehicle regulator.

140. Ideally these compliance systems are linked to crash databases, health databases, and infrastructure databases, so that policies and programs can be more effectively researched, implemented, monitored and evaluated.

141. What typically sets one country's systems apart from another are the safety standards which are applied to motor vehicles, drivers and commercial operators entering the regulatory system, the quality of the back-office systems to support these standards, and the behavioural expectations of the traffic rules and the rigor with which they are enforced. Both the standards that are set, and the compliance that is achieved with those standards, are critical. However, the quality and effectiveness of the compliance activity is heavily dependent in the first instance upon the level of safety standards that are set. Poor quality safety standards will necessarily reduce the effectiveness of compliance activity.

EU-Ukraine Association Agreement

142. The ratification by the Ukrainian Parliament and the consent by the European Parliament of the EU-Ukraine Association Agreement in September 2014 should be taken as a clear direction that technical standards and norms in relation to the safety of the road transport sector need to be fundamentally realigned to good European practice. Article 367 of the agreement states that the Parties shall "expand and strengthen their transport cooperation in order to contribute to the development of sustainable transport systems" and "promote efficient, safe and secure transport operations." Under Annex XXXII Ukraine undertakes to approximate its legislation to 12 pieces of EU road transport legislation. An extract of the text applying to road transport is attached in Annex 3, and lists each piece of legislation.

143. The safety value of this legislation which is referenced in the Association Agreement varies – from extremely high potential value relating to driver licences through to road tolling. For example, Ukraine has committed to implementation of the following:

- i. Directive 91/439/EEC on driving licences by September 2017
- ii. Directive 92/6/EEC on heavy vehicle speed limiters by September 2015 for all vehicles engaged in international goods transport, by September 2017 for all vehicles engaged in international passenger transport, and by September 2018 for all vehicles, first registered after 1 January 2008, engaged in national transport
- iii. Directive 2009/40/EC on roadworthiness tests for motor vehicles by September 2015 for all vehicles engaged in international goods transport, by September 2017 for all vehicles engaged in international passenger transport, and by September 2019 for all other vehicles
- iv. Regulation (EC) No 1071/2009 on road transport operator conditions by September 2017 for all transport undertakings engaged in international traffic, and by September 2021 for all other transport undertakings.

144. Together, this provides opportunity for Ukraine to fundamentally review: the conditions under which it will allow a person to drive a motor vehicle on the road; the safe maintenance of the vehicle fleet; the control of heavy vehicle and bus speed; and the conditions under which it will allow a company to offer passenger or freight transport services. This in itself represents significant safety opportunity for Ukraine.

145. The safety opportunity could have been greater with a strong road safety lead agency in place, putting forward and winning cases to cover essential safety elements of vehicle safety technology and infrastructure safety management. For example, one of the major safety related directives not included in the list of road transport regulations and directives included in the Association Agreement is Regulation (EC) 661/2009 on type-approval requirements for the general safety of motor vehicles. A number of safety critical technologies have been mandated through this Regulation, including: Electronic Stability Control systems on cars, vans, trucks and buses, Lane Departure Warning Systems and Advanced Emergency Braking Systems for trucks and buses, Driver seat-belt reminder on cars, ISOFIX child restraint anchorages on cars, and cab strength crash protection of vans and trucks.

146. Consideration could also have been given to how Directive 2008/96/EC of the European Parliament and of the Council of 19 November 2008 on road infrastructure safety management could have been given effect in Ukraine. This Directive relates to road safety impact assessments, road safety audits, the management of road network safety and safety inspections. It places requirements on the design construction and operation of roads which are part of the trans-European road network, and offers good practice guidance to other national road infrastructure constructed using Community funding in whole or in part.

147. It is important that the legislative approximation process facilitates significantly reduced road trauma in Ukraine by including safety critical policy components which goes beyond the minimum standards set out in the EU acquis. This may require reforms to be staged, so that interim legislative requirements are not inadvertently presented as providing sufficient safety protection for Ukrainian road users.

148. This principle is relevant for every aspect of the very significant task over the next decade of integrating European technical standards and norms for transport – ranging from roads, to vehicles, to users, to commercial operators, to trauma care. The technical standards and norms provide an important base structure, however they will not necessarily in themselves result in significant safety improvements.

149. It is recommended that a safety focussed plan is prepared for the integration of technical standards and norms in Ukraine, which goes beyond the commitments set out in the Association Agreement. In so doing, the plan should explicitly recognise the gap between current technical standards and norms in Ukraine and current technical standards and norms in the best performing EU countries, and set out a multi-year timetable by which time the gap will be closed.

Road network design and management standards

150. The transition from ex-Soviet technical standards and processes will be particularly important in the planning design, construction and management of the Ukrainian road network. This field of work has seen considerable change over the last two decades in high income countries, with a much stronger focus on facilitating the safest possible movement of people and goods, rather than the previous focus on

facilitating the fastest possible movement of motor vehicles. This change has required experimentation and risk-taking within road agencies, including deviation from fixed standards, which may be difficult to achieve within the current Ukrainian approach. While challenging, it is important that this modernisation task is promoted not just at the national level, but also at the local government level which is responsible for the bulk of the Ukrainian road network.

151. A major new project is being developed within the Ministry of Infrastructure (Ukravtodor) in association with the European Investment Bank to address these issues and provide better quality assurance of road safety in planning, design and operation of the main Ukrainian road network. Based on the progressive adoption of EU Directive 2008/96/EC on Road Infrastructure Safety Management, the project seeks to strengthen safety capacity and systems within Ukravtodor, enhance road safety in existing road design and approval processes, and develop proposals for updated design standards in line with international best practice and the *safe system approach*. The results can potentially be used as a basis for future, official Ukrainian road design standards and will contribute to safer design, which presently is a major challenge on IFI supported projects.

152. The EIB supported project also focuses on developing road safety audit capacity and processes within Ukravtodor. Road safety audit is a specific process for assessing the safety of a road length or site at design, construction, or post-construction stages, and is conducted by a team which is independent of the design and management activity. It is consistent with the approach embodied in the 2013 EuroRAP study discussed later in this section, and will be important for reinforcing processes which focus on safely protecting human use of the road network.

153. Finally, the project will support development work aligned to ISO 39001 Road Traffic Safety Management Systems to promote a safety management systems approach to the management of Ukraine's national road network. The preparation of ISO 39001 was a key work item in the Global Plan for the UN Decade of Action on Road Safety and was published in late 2012. ISO 39001 promotes the voluntary application of rigorous quality management and safe system principles within the very large range of organisations which influence the safety of road users. Austroads is close to finalising specific guidance (to promote voluntary adoption, not strict legislative requirements) for road agencies seeking to develop safety management systems which are aligned to this best practice road safety management tool.

154. Major opportunities appear to exist in better aligning speed limits with the function and use of the road network, particularly for environments where highways pass through villages. The EuroRAP study also highlights the high potential for cost effective treatments on major highways including the measures to significantly improve safety in relation to:

- i. Pedestrians (footpath provision, traffic calming, pedestrian fencing, upgrading of pedestrian facility, street lighting, refuge islands, signalised crossings)
- ii. Intersections (protected turns at unsignalised intersections and improvement to signing, delineation and lighting)
- iii. Overtaking (median barriers including 2+1 road configurations, lane widening, central hatching or wide centre lines)
- iv. Roadsides (roadside clearance, barriers, shoulder sealing and improved delineation)

- v. Villages (improved pedestrian facilities, parking improvements, traffic calming, and bicycle facilities).

155. Some examples of good infrastructure safety treatments for more widespread adoption in Ukraine are set out below.

Figure 7: Some good practice safety treatments for adoption



Motor vehicles, drivers and commercial operators

156. Major reforms are underway to strengthen legislation applying to the motor vehicle fleet, the drivers of that fleet, and the commercial operators providing freight and passenger services. These reforms appear to go beyond the minimum requirements set out in the EU-Ukraine Association Agreement, which is encouraging.

157. In 2000 Ukraine became a contracting party to the *1958 Agreement Concerning the Adoption of Uniform Technical Prescriptions for Wheeled Vehicles, Equipment and Parts which can be Fitted and/or be Used on Wheeled Vehicles and the Conditions for Reciprocal Recognition of Approvals Granted on the Basis of these Prescriptions*. Ukraine has also subsequently become a contracting party to the vast bulk of the UN regulations annexed to this agreement. It is understood that the actual implementation of these rules in Ukraine is scheduled for January 2016, and includes the priority safety rules identified by the Global New Car Assessment Program.¹⁵

¹⁵ See D Ward (2015) *Democratising Car Safety: Road Map for Safer Cars 2020* which identifies priority safety standards as being UN Regulations for Frontal Impact (no.94) , Side Impact (no.95) , Seat Belt & Seat Belt Anchorages (no.14 & 16),

158. The systematic introduction of safety technology through new light and heavy vehicles entering the Ukrainian fleet is a critical step forward for road safety, and will need to be supported by effective vehicle type approval systems. It will also need to be supported by controls on the importation of used vehicles entering the Ukrainian fleet which is understood to be not yet addressed, and roadworthiness controls on light vehicles which are a commitment under the EU-Ukraine Association Agreement but only for implementation in 2019.

159. Driver licensing reform is incorporated into the draft road safety law. This legislative reform goes further than the commitment under the Association Agreement which refers only to the 1991 EU Directive, and so also represents a step forward for road safety in Ukraine. This includes proposals to set the training and education standards for driving examiners, including minimum standards for their initial qualification as well as regular refresher courses, and to strengthen medical fitness to drive requirements.

160. However, there are significant gaps which will need to be addressed over time, in two key areas. The first is the minimum age of licensing for mopeds, for which the proposed minimum age is 14 years, and for motorcycles, for which there are three categories of licence (depending on the power to weight ratio of the motorcycle) with minimum ages stepped from 16 to 18 to 20. Good European practice (for example, the Netherlands) would add a further two years onto each of these minimum ages. The proposed minimum age of 18 for a passenger car licence is strongly endorsed. However this could be more directly tied to exposure controls through a tighter graduated licensing system¹⁶ for light passenger vehicles.

161. A good illustration of the need for considering essential road safety elements in any regulatory system designed to approximate EU legislation is in the area of commercial freight and passenger transport operators. While this is covered by Regulation (EC) No 1071/2009, which is a commitment under the Association Agreement, this regulation has inadequate safety requirements for commercial operators, focusing as it does on economic regulation, operators being of good repute, appropriate financial standing; and the requisite professional competence. It is understood that the lack of safety requirements in this Regulation is recognised by the Ministry of Infrastructure and steps are being taken to use ISO 39001 as a guide to promoting safety management systems within commercial transport operators.

Supporting legislative and compliance systems

162. There are positive standards setting developments in relation to roads, vehicles, drivers, and operators. Legislation needs to be supported by regulatory management and compliance systems. Implementing regulatory reform for the entry and exit to and from the road transport system by vehicles, drivers and transport operators requires action on a wide variety of fronts: specification of legal safety requirements; investment in capital and operating funds; and compliance systems. This is addressed further in Box 5 below.

Electronic Stability Control (no.13H or Global Technical Regulation 8) and Pedestrian Protection (no.127 or Global Technical Regulation 9).

¹⁶ Graduated licensing systems have substantially reduced road trauma in Europe, North America and Australasia by controlling the exposure to risk of young and novice drivers, gradually developing experience through additional safety controls such as lower alcohol/speed limits and constraints on night time driving and carrying passengers.

Box 5: Key elements of effective regulatory management for motor vehicles, motor vehicle drivers and commercial transport operators

An essential aspect of managing the safety of a road transport system is the effective regulation of motor vehicles, their drivers and related commercial operators. This requires highly automated systems which are managed to the highest ethical standards and capable of handling some of the highest volume electronic transactions in a country. They allow vehicles, drivers and transport operators to legally access the road transport system, and are effective in removing access to the system where prescribed safety standards are not met.

There are four key management elements to good practice regulatory management:

- i. *The specification of legal safety requirements* for vehicles, drivers and operators in terms of the safety standards which they must meet before accessing the road network, the safety standards they must adhere to while using the road network, and the actions which will be taken in regards to any breach of the requirements, including the thresholds at which their access will be suspended or withdrawn
- ii. *Capital investment into the development of fully electronic and linked registers* of vehicle ownership, driver licenses, and transport operators which allow verifiable certificates for accessing the road transport system to be issued to the right natural persons, and withdrawn for serious or repeated breaches of the conditions of issue
- iii. *Ongoing operating expenditure to maintain and operate these electronic registers* in client facing business processes which record all documents issued, suspended or withdrawn, any amendments to the records that have been supplied such as the address of the licence holder or the modification of a vehicle, and the application of administrative sanctions
- iv. *Regulatory audit and compliance systems* which specify the standards which the participants in the system must meet in order to deliver regulatory services, such as vehicle inspection, driver testing, or operator auditing, and removes any approved person or organisation from delivering those regulatory services if they are found to breach those specifications. On-road enforcement which provides for random checking of the validity of vehicles, drivers and operators' documentation.

Many regulatory management systems have evolved to include controls over environmental management, or incorporate revenue raising mechanisms, but their primary purpose is to promote safe travel.

163. While previous discussion has highlighted elements of the safety standards being addressed in Ukraine, and opportunity to strengthen these legal requirements, there appear to be fundamental difficulties with the electronic systems and registers needed to effectively regulate motor vehicle traffic. It is understood that:

- i. the register of driver licences is in paper form, except that an electronic system was introduced for any new licences issued from 2014
- ii. vehicle ownership practices in Ukraine include the transfer of permanent use rights for payment.

164. Either of these difficulties would fundamentally undermine the ability of authorities to enforce traffic law. For example, automated speed enforcement systems rely entirely on the ability to prosecute the owner of a vehicle remotely detected speeding by a roadside camera. To effectively enforce speed limits in this way, a modern electronic register is required, backed up with a statutory obligation of the vehicle owner to update records and clear owner liability rules. A modern penalty points system to deter unsafe driving practices also requires an electronic driver licence register.

165. The need for electronic registers has been highlighted by stakeholder agencies, and it is recommended that a significant reform program is initiated for regulatory management systems applying to motor vehicles, motor vehicle drivers and commercial transport operators. These should be linked to effective crash, health and road asset databases. The purpose of this reform would be to maximise the functional capacity of the electronic registers and compliance systems, and more particularly to support good practice safety controls related to the entry and exit of motor vehicles, motor vehicle drivers, and commercial transport operators to the road transport system. For example, direct roadside access to motor vehicle and driver registers are necessary for traffic police to verify the licensing and safety status of drivers and vehicles and if necessary to take immediate action to remove unsafe drivers or vehicles from the road.

166. Strengthening of these systems is addressed further in Section F, and can continue to be extended to support efficient administrative processes. Once a modern electronic environment is established, it can be used to manage technical vehicle inspections, certified driving instructors, or driving examinations, for example, and support ongoing research and evaluation activity.

167. Finally in relation to legislation, it is necessary to address speeding and drink driving.

Speeding controls

168. As for many countries around the world, the safety of Ukraine's road transport system is heavily dependent on how fast motor vehicle traffic is allowed to flow, and the quality of controls placed on motor vehicle drivers who exceed the permitted speed. This is addressed in more detail in Annex 1. The default urban speed limit of 60 km/h in Ukraine is well above good European practice,¹⁷ and consideration should be given to reducing it to 50 km/h. This is an area with considerable research evidence which suggests this simple change would reduce casualties on these roads by over 20%.¹⁸

169. A further issue arises in the law which prevents prosecution for speeding until the vehicle is detected travelling at 20 km/h over the speed limit. The research evidence is equally clear in this regard. In a 60 km/h speed zone, the risk of a casualty crash doubles with each 5 km/h increment above the speed limit. That is, at 65 km/h the risk of casualty crash doubles, and doubles again at 70 km/h. A driver

¹⁷ International Traffic Safety Data and Analysis Group (2015), Road Safety Annual Report 2015, International Transport Forum, Paris.

¹⁸ See for example, CN Kloeden, JE Woolley, AJ McLean (2004) Evaluation of the South Australian default 50 km/h speed limit, Centre for Automotive Safety Research Report Series CASR005, Adelaide.

speeding at 80 km/h is therefore sixteen times more likely to be involved in a casualty crash, than if driving at the speed limit in a 60 km/h zone.¹⁹

170. Effective speed management requires action on many different fronts. This includes alignment of the speed limit with the design, function and use of the road, good promotional campaigns to build and sustain support for speed control, and effective policing targeting low level speeding offenders. The 20 km/h speed enforcement tolerance law in Ukraine directly results in unnecessary deaths and serious injuries on Ukraine's roads. It has a very negative psychological effect as it is well known by drivers who consider the "real" speed limit is much higher than the "legal" speed limit. Therefore, the legal purpose of establishing a speed limit, which is to recognise that beyond a certain level motor vehicle speed creates an unacceptable safety risk, is completely undermined.

171. It is recommended that the 20 km/h speed enforcement tolerance law is repealed immediately, and its repeal is widely communicated to the community. Good road traffic enforcement practice is to leave the enforcement of traffic speed as an operational decision for the Chief of Police. There are two possible implementation paths. The Chief of Police could simply announce the change and ensure that it is backed up by Officers. Or a reduction in speed enforcement tolerance could be staged – for example, introducing first a 15 km/h, then a 10 km/h and then a 5 km/h tolerance over the course of a 12 month period. Each path needs to be supported by an excellent communication plan, and sustained rigorous enforcement.

172. Strong safety improvements have been associated with similar speed enforcement tolerance decisions made by Police in good practice countries. For example, the OECD reported on experience in the city of Melbourne when automated speed enforcement was toughened in 2002, including lower enforcement tolerances which had previously been set at 10 km/h above the speed limit. Levels of infringements doubled initially, but returned to earlier levels by the end of 2003, and there was a 43% reduction in fatalities in metropolitan Melbourne from 2001 to 2003.²⁰

Drink driving controls

173. Improved drink driving controls are likely to be very important in future improvement in road safety, given the high level of alcohol consumption per capita in Ukraine.²¹

174. In its *Global Status Report on Alcohol and Health 2014*, WHO estimates the impact of alcohol related harm, and specifically "alcohol-attributable fractions" based on quantifiable causal links with alcohol consumption. Figure 2 compares the estimated percentage of road traffic fatalities for men and women which are attributable to alcohol. Similarly with comparison data regarding road traffic fatality rates, WHO estimates indicate that Ukraine is somewhat better than Russia and Belarus but has a higher percentage of traffic fatalities attributable to alcohol than immediate neighbours to the West, and a much higher percentage compared to the Netherlands, Sweden and the United Kingdom, traditionally the best performing

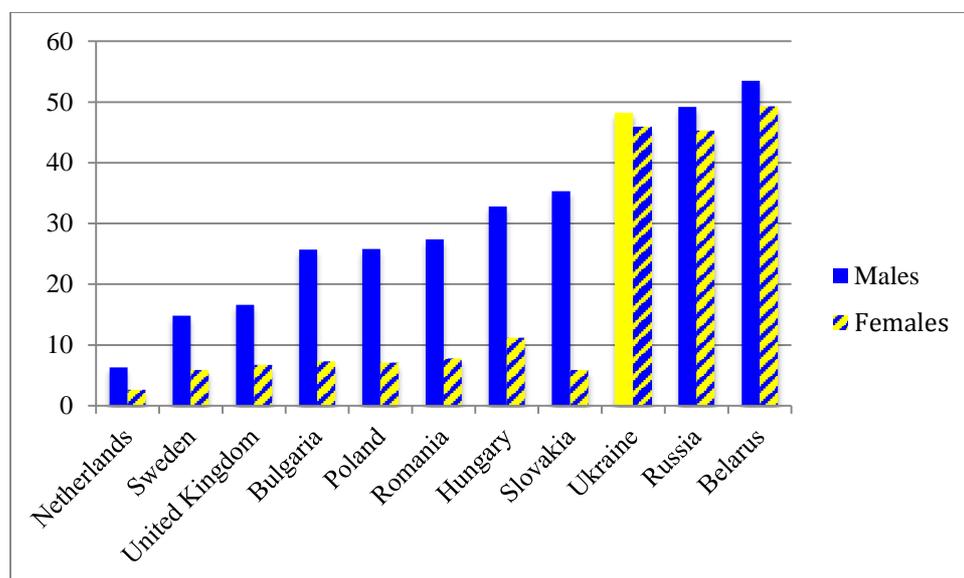
¹⁹Kloeden CN, McLean AJ, Moore VM, Ponte G (1997) Travelling speed and the risk of crash involvement. Volumes 1 and 2 (CR172), Federal Office of Road Safety, Transport and Communications, Canberra.

²⁰ Organisation for Economic Cooperation and Development (2006) *Speed Management*. Paris.

²¹ World Health Organisation (2014), *Global Status Report on Alcohol and Health 2014*, Geneva.

countries in Europe. Globally, 15% of road traffic injuries are estimated to be attributable to alcohol.

Figure 8: Percentage of traffic deaths attributable to alcohol



Source: WHO 2014

175. There is a clear disparity between this estimate by WHO and the reported data provided in Table 2 which recorded drink driving as a contributing factor in only 2% of fatalities. There could be a variety of reasons for this disparity in data. Perhaps, for example, it may be that the only drink driving fatalities which are recorded are those where the drink driver is still alive. The drinking culture in Ukraine has been described as “Nordic”, with alcohol “often drunk in binges, in which large quantities are consumed in a short space of time.”²² However, drinking behaviours are not likely to explain the difference, as Sweden has a much safer road transport system and a much lower percentage of fatalities attributable to alcohol.

176. Whatever the reason for the disparity, it appears that there is a major drink driving issue in Ukraine which is neither adequately recorded nor adequately addressed. It is likely that the very high level of fatalities attributable to alcohol is associated with the quantity and quality of enforcement activity on the road.

177. An essential legislative element of action against drink driving is the setting of an appropriate legal alcohol limit for driving. It is positive to note that this is in place in Ukraine and is set at a level for all drivers (0.2 g/l blood alcohol concentration) which compares well with good European practice. The complete suite of legislative measures to facilitate good anti drink driving enforcement can however be complex and need to be fitted within local legal contexts. Legislative issues that may impede effective control of alcohol may include for example the circumstances in which a screening test can administered, the procedures for taking and analysing an evidential sample of breath or blood, the certification and calibration of screening and evidential devices, and the procedures for prosecuting offending drivers.

²² Nataliia Levchuk (2009), *Alcohol and Mortality in Ukraine*, MPIDR Working Paper WP 2009-017, Rostock.

178. At the core of effective drink driving law is the principle of random breath testing – that is, the law should allow for any driver at any time to be tested using a certified device by a warranted Police officer. Enforcement operations then need to be of a sufficient quantity and quality to deter drink driving. Given the large estimated volume of alcohol related fatalities, a significant investment in drink driving enforcement is likely to provide good safety benefits. A survey of road traffic enforcement practices recently illustrated that of 17 EU member states where roadside alcohol testing information was available an average of 165 roadside alcohol tests were conducted by Police per 1000 population in 2010.²³

179. A substantial reduction in alcohol related fatalities is able to be achieved, as was the case in the Czech Republic where there was a 3.4% annual reduction in drink driving deaths between 2001 and 2010.²⁴ It is recommended that Ukraine invests in a drink driving enforcement programme which targets the sustained annual delivery over a three year period of at least 100 roadside alcohol tests per 1000 population. It is also recommended that a good practice review of drink driving enforcement practice is undertaken, including the effectiveness of the legal systems in supporting this activity, and effectively deterring drink driving.

180. Finally, there should be no tolerance for the consumption of alcohol by any commercial transport driver, and the best way of controlling for this is to fit alcohol interlock technology into commercial vehicles. This technology only allows the vehicle to be operated by a driver who can provide a breath sample which is free of alcohol. Ukraine could, for example, introduce steps to promote the installation of this technology by companies wishing to deliver public bus services, as has been recently introduced in Estonia.²⁵

Road traffic policing

181. Major structural change is underway in road traffic policing, with an entirely new general duties force being recruited to replace the former traffic police force. This is intended to initiate a major cultural change across the Ukrainian police force, which is understood to specifically address corruption and improve the reputation of Police. But the change may also have a significant negative (though hopefully only temporary) effect on the enforcement of road traffic law in Ukraine.

182. All police forces are trained in enforcing traffic law, but successful enforcement of traffic law essentially requires a population wide public health approach which seeks to deter the whole driving population from unsafe behaviours. For example, the greatest trauma reduction effect from speed enforcement is available by deterring drivers from speeding within 5-10 km/h over the speed limit, which inevitably results in prosecuting offenders who are otherwise regarded as “law abiding”. This is a quite different approach from many other areas of policing which focuses on catching “criminals”, and likely to be very different from the basic enforcement training and development for a general duties police force.

183. An EU supported project is currently underway to support traffic enforcement planning, which has the potential to address issues such as a heavy reliance on static enforcement operations at checkpoints rather than by general mobile police patrols. It will be important to use the results and recommendations of this work to implement a

²³ European Transport Safety Council (2015), *Enforcement in the EU – Vision 2020*, Brussels.

²⁴ European Transport Safety Council (2012), *Drink Driving: Towards Zero Tolerance*, Brussels.

²⁵ See article 1 November 2014, <http://etsc.eu/estonia-promotes-alcohol-interlocks-in-public-tenders/>, downloaded August 2015.

stronger general deterrence based road traffic policing approach, and to ensure that there is a strong professional capability within the new general duties force to deliver high quality traffic policing operations.

184. It is understood that there will be a single national command structure established, that recruitment and subsequent general training of officers is well advanced, and that a fleet of new vehicles is coming on stream. Given this, it is likely that significant additional investment will be required in three key areas:

- i. Specific, general deterrent focused, road traffic policing training which covers every level of the new force from the national commander and the most senior support command, through to officers in hourly contact with offending motorists
- ii. High quality road safety intelligence and analytical capability (including access to crash and other databases) which provides commanders with the information necessary to provide daily tasking to officers, so that credible and sustained drink driving, speeding and restraint campaigns can be delivered to protect the safety of Ukrainian road users
- iii. Specialised traffic equipment, and training in such equipment, in order to detect and manage prosecutions of drink drivers and speeding drivers, and also to support other core road traffic policing functions such as crash data recording.

Funding and Resource Allocation

185. Significant additional investment into safety focused management systems and interventions is an essential requirement for a successful effort to reduce road trauma in Ukraine. Institutional capacity to establish the scope of the road trauma problem and develop business cases to cost-effectively reduce road trauma is essential, and sustainable funding resources are required to ensure that the investment can be applied over several multi-year cycles. The capacity to allocate safety resources to projects and programs which are likely to produce the best return on public resources is also essential.

186. Often in the past road safety investment in low and middle income countries has been too small or too dispersed to be effective. Good practice road safety investment and allocation procedures focus on treating specific lengths of the road network and applying a smaller range of the most effective engineering and enforcement treatments, supported by any necessary promotion/education and project management activity.

187. There are obvious and major constraints on road safety funding from the Government of Ukraine. A number of significant activities have been scaled back, and the potential for increased funding in the short term may be limited. There are a number of sources of potential funds within Ukraine which are directly associated with the safety of the road transport system. These need to be explored and tested for their ability to be put in place.

188. One of these is through levies on regulatory service fees – for example, fees to gain or renew a driver's licence, to register a motor vehicle, or to gain a licence to operate a commercial transport service. Some of these fees may need to be allocated to the specific regulatory activity, such as paying for stronger audit and compliance systems within the road transport industry. Others can be allocated on a more

generalised basis for safety, such as improvements in road safety management and systems through driver licensing or motor vehicle registration – the principle being that every driver or motor vehicle owner benefits from improved safety. A national injury insurance scheme would also be a means of not only meeting the cost of injury treatment and rehabilitation, but also investment in injury prevention.

189. Another means of raising revenue for increased safety expenditure is the allocation of traffic fines revenue to safety expenditure budgets. Should a more intense safety focused speed enforcement program be established, for example, it is strongly recommended that any additional fine revenue is hypothecated to safety expenditure budgets. This becomes an important public means of demonstrating the safety purpose of the enforcement activity.

190. The draft road safety law identifies the need for a Road Safety Fund, and it is strongly recommended that this is established and formalised within the Government's accounting systems. The draft legislation does not restrict the revenue which can flow into the fund, but specifies the inclusion of at least 20% of traffic fine revenue, and at least 10% of road infrastructure investment. The draft legislation foresees oversight of the Road Safety Fund by the NHSB/lead agency, which is also strongly recommended. The agency which is responsible for leading the road safety effort should have the formal decision making role for the allocation of safety funds beyond the baseline expenditures of the various arms of Government which are responsible for road safety. This would allow the NHSB/lead agency to allocate safety funding according to an agreed safety investment strategy. It would also involve the NHSB/lead agency into the decision making process for major road transport investments as they are negotiated.

191. Road transport loans from IFIs (World Bank, European Investment Bank, European Bank for Reconstruction and Development) typically focus on the provision of capital funds for a limited term such as five years. The long term value of the loan is assessed in part by the economic return to the country on the investment. Safety funding needs to be assessed in the same way – as an economic investment in the country. Ideally, safety funding must be genuinely sustainable over the medium to long term, but short term funding may be essential in order to create the mechanisms allowed for sustainable funding to be sourced.

192. In the current circumstance for road safety in Ukraine, the use of road transport loan facilities is likely to be essential in order to generate more sustainable funding for the future – that is, capital funds are likely to be required to fund activity which would typically be supported by operational funds. But even then some internal funding will be required for implementing such loans, advance other road safety improvements, develop capacity, collaborate with international partners, and undertake research.

193. Road transport investment facilities are likely to continue to be focused on major new road construction. However, given the long term safety retrofit requirements of the Ukrainian road transport infrastructure, it is likely that the application of a 10% safety rule for these investment proposals will result in highly cost effective proposals. Cost effectiveness of safety investments would be strengthened if the resource allocation system takes direct account of iRAP or similar safety focused methodologies. As a matter of principle, funding should be available for safety investment across the spectrum of needs including road improvement and enforcement.

194. The scale of safety issues highlights the need for a full safety funding and investment program to guide decision making on road transport investment in Ukraine. The best survey information which is currently available is from the iRAP study of the M12. This estimated that safety focused treatment of 475 km from Ternopil to Uman would save 0.6 deaths and serious injuries per km per year over a 20 year period, with a Present Value of approximately UAH 1500m, at an order of magnitude cost of UAH 300m (USD 35m) and a benefit cost ratio of around 5:1. As noted previously, the EuroRAP needs to be undertaken for at least the remainder of the roads of national importance (approximately 8300 km of international roads, 4800 km of national roads and 8000 km of regional roads). If this generated similar results as the analysis of the M12 section, the cost of a nationwide Ukrainian Safer Roads Investment Plan would be in the order of USD 1.4 billion. The savings in economic costs arising from road trauma would be immense.

195. Safety funding and resource allocation should be an early and significant priority for the NHSB/lead agency. It is recommended that a five year safety funding and investment program, covering all safety aspects of the road network, the vehicle fleet and road user behaviour, is developed. This should include the specification of funding sources determined by the Government of Ukraine, and the development of a specific schedule of infrastructure safety retrofit programs with Ukravtodor. It is recommended that the Road Safety Fund identified in draft legislation is established, that it comprises at least 50% of all additional road traffic enforcement fines (using 2015 as a baseline), and 10% of all road infrastructure investment funds, and that the formal decision making role for allocation of the Fund is held by the lead agency for road safety. It is recommended that engagement and final decision making with international finance institutions regarding investment in road transport infrastructure should include a formal decision making role for the NHSB/lead agency regarding priority safety investments.

Promotion

196. Professional and well targeted communication and promotion is an essential management function because it helps build constituencies for change. It is also however very easy to consume significant resources to little or no effect through poorly conceived promotional activity. Promotional activity should be carefully targeted at first to decision makers, partner organizations (those in a position themselves to take significant road safety action) and key influencers. This activity should promote consistent road safety messages which are well aligned to key road safety strategies. The goal in this first phase should rather be to inform and influence key decision makers involved in significant safety decisions to increase investment in road safety, improve the safety of the infrastructure, improve the quality of the vehicle fleet, enforce better road user behavior, or provide better post-crash response.

197. Over time, road safety communication and promotional activity can be extended to wider target audiences, particularly in association with specific initiatives, projects or programs, since most require at least understanding and preferably some support from the community. This could include for example legislative initiatives (informing the community of changes in law which must be complied with), or enforcement campaigns (informing the community of specific campaigns targeting specific behaviors). All activity should be subject to evaluation and review, and adjusted as necessary to make best use of resources.

198. There is professional recognition of the need to increase understanding amongst decision makers and influencers, but promotional activity for road safety appears to be at a low ebb in Ukraine. Without first strengthening road traffic enforcement activity, communications to users is highly unlikely to be effective in achieving key behaviour changes in the driving population. Non-government organisations such as the Road Safety Association and the Road Safety Support Foundation seek to increase the profile and engage with key stakeholders through seminars and workshops. A major promotional campaign “Safe Villages” was delivered on the M03 corridor between Kyiv and Lviv, and this may prove useful for further corridor based safety projects, but it is not known what the lasting effects of this project has been.

199. It is recommended that a road safety promotional plan is developed in collaboration with a wide range of government and non-government stakeholders, led by the NHTSB/lead agency. It is envisaged that the plan would set out deliberate steps to:

- i. raise the profile of road safety in Ukraine and create a climate for change amongst national or local decision makers and influential people within the community and media
- ii. direct promotional investment into major evidence-based national initiatives to enhance the effect of major changes in road traffic enforcement or the road safety environment
- iii. provide a mechanism for local communities or communities of interest to advocate for local government decisions to improve safety on city or village streets.

Monitoring & Evaluation

200. Good results focused monitoring and evaluation systems start with good crash fatality and injury data. The significant disparities outlined earlier between Police reported fatality data and the global estimates developed by WHO suggest a significant review and subsequent investment into crash data is a high priority for Ukraine.

201. This is not to suggest that one source is correct and the other is not. There are multiple sources of data, including the Ministry of Interior, the Ministry of Infrastructure, the Ministry of Health, and private organisations such as insurance corporations. Rather, the priority reflects some inherent difficulty in understanding what each of these data sources mean for road safety. For example, crash databases which receive inputs from Police or are managed by road agencies typically reflect significant underreporting when compared with health databases. Police databases may also reflect a prosecutorial rather than a safety approach, which given the challenging transition towards a safe system approach in Ukraine could present significant hurdles.

202. An important element of the TRACECA project is an assessment of crash data systems and, notwithstanding any current problems, the Ukrainian crash data system is considered to be in a development phase. It is established on a modern web oriented application, and with a database management system which is considered to be a good basis for upgrading in accordance with the recommended EU data structure

– specifically, the CADaS (Common Accident Data Set) structure. It will need further implementation support.

203. WHO has provided a very strong template for a review of road crash data systems in several respects. It encourages significant stakeholder input into what information is collected and in what form it can be retrieved. It also emphasises the need to address significant practical issues such as ensuring that adequately trained personnel, both at the roadside and back-office, have the necessary equipment to support the system, and make de-personalised data widely available. It is recommended that the results of the TRACECA data project are taken and packaged into an investment project which will considerably strengthen the collection, collation, analysis, reporting and use for subsequent improvement programmes of road crash fatality and injury data in Ukraine.

204. There are many aspects of road crashes, fatalities, injuries, vehicles, roads, behaviors and related systems. Over time, comprehensive monitoring and evaluation systems can be developed across all these aspects, but the most important aspects are those which are aligned with the overall results that are the subject of management attention and agency delivery. As activities in each key area, such as speed enforcement or corridor improvement for example, are scoped and planned, evaluation components need to be incorporated to build up a structure of intermediate outcome and delivery results over time. This is further addressed in Section F.

205. Data should be collated from amongst key road safety partners by the lead agency and formally documented and publicly released regularly by the lead agency – preferably four times a year to promote constant and active review of road safety performance. Regular publication and dissemination of results allows the partners to assess operational and outcome progress and determine whether adjustments are needed.

206. Monitoring and evaluation activity is important for the good governance of road safety within the jurisdiction and the transparency between partners and within the wider community about road safety progress. It is important that the NHTSB in Ukraine should have a formal authority to compile safety data and develop a reporting system which provides stakeholders with information about activities and results. Initial reports may need to be adjusted until a consistent format and data set is settled which provides meaningful road safety information.

207. The collection of baseline data ahead of major interventions, and continued monitoring of performance, allows a stronger understanding of safety issues to be developed over time, and also provides key stakeholders with tangible results which they can use to promote further investment in road safety. As noted previously, it is important that key databases are developed so that information about motor vehicles, drivers, transport operators, road assets, crashes, and health can be subject to independent research. Appropriate privacy controls regarding the release of de-identified data should also of course be in place.

Research & Development and Knowledge Transfer

208. Given the multi-disciplinary nature of the road safety task, there are many different research questions and development projects that can be initiated, ranging from sophisticated evaluations of major road safety projects through to the development of driverless cars. While many essential research findings in road safety are fully transferrable across low, middle and high income countries, the development

of a local road safety research capacity is important in order to encourage deeper investigation of local issues and interventions. The focus of the research and development function should be on developing and implementing periodic survey instruments which will inform government agencies' focus on results. Over time it may expand into initiating and funding specific research for learning from successes and failures, and contributing to the development of a safe road transport system in Ukraine.

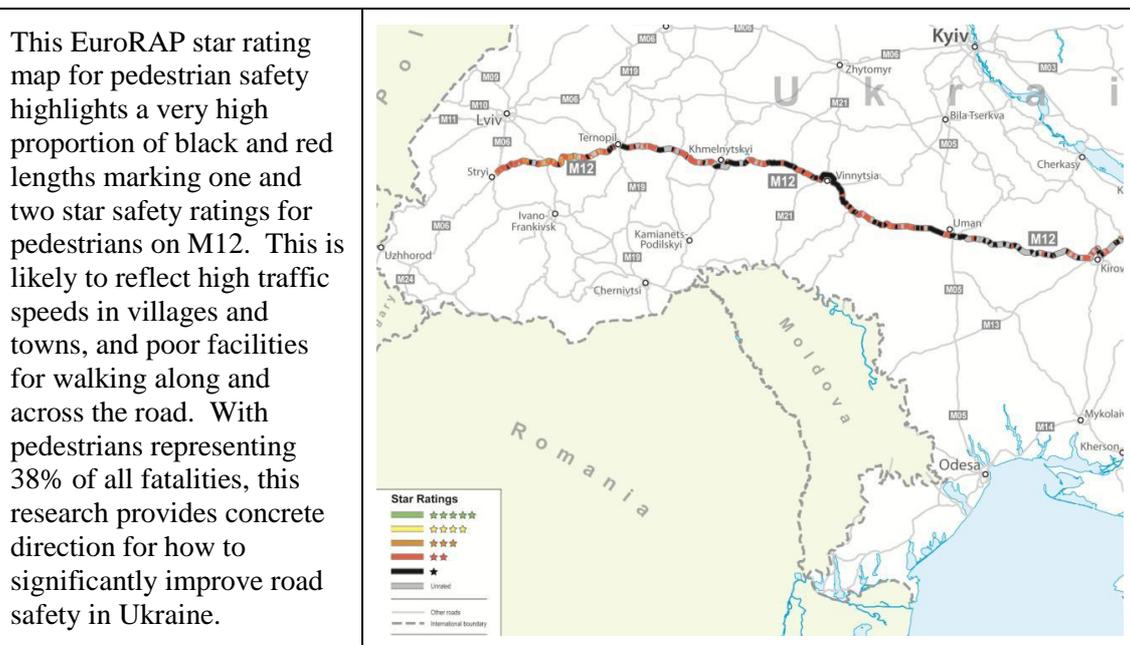
EuroRAP

209. One of the most significant research and development projects in Ukraine over recent years has been the completion of a European Road Assessment Programme (EuroRAP) study. EuroRAP is part of a global best practice program which combines video analysis with available crash and traffic data to provide an objective assessment of the inherent safety quality of the infrastructure. Key features of such studies are a one to five safety star rating of the road environment which is surveyed, and a Safer Roads Investment Plan which identifies the key treatments (and locations) which need to be applied in order to achieve what is regarded as good practice – a minimum three star safety rating for motor vehicle occupants, pedestrians, cyclists and motorcyclists.

210. The Ukraine study over 2012/13 surveyed 1666 kms along the M12, M17 and M18 – roads of national and international importance in need of upgrading and rehabilitation. The resulting Star Rating map showed that a third of the roads rated less than 3-star for car occupants and only about one in eight sections where pedestrians could expect to be present achieved a 3-star rating. These results were then compared with the potential for fatal and serious casualty reduction which can be predicted based on real world evidence calibrated over a large number of road networks in high, middle and low income countries.

211. The map below highlights the scale of the safety problem for pedestrians.

Figure 9: Pedestrian safety ratings on M12



This EuroRAP star rating map for pedestrian safety highlights a very high proportion of black and red lengths marking one and two star safety ratings for pedestrians on M12. This is likely to reflect high traffic speeds in villages and towns, and poor facilities for walking along and across the road. With pedestrians representing 38% of all fatalities, this research provides concrete direction for how to significantly improve road safety in Ukraine.

Source: Lawson (2013), "Ukraine Safer Roads Investment Plan", EuroRAP

212. EuroRAP studies do not provide a schedule of infrastructure works. They provide concrete direction on what parts of a road network should be prioritized for safety treatment, the mix of safety treatment types which will be required, and a high level analysis of investment required and expected trauma reductions. They can also provide important information to support targeting of road traffic policing and speed limit reductions until infrastructure upgrades are available.

213. The EuroRAP study is being used as input to a major road upgrade project for a 40 km section of the M12. This will support a more safety focused approach to infrastructure investment. It is recommended that the EuroRAP results are used to shape a safe system demonstration project on the remainder of the M12 corridor from Ternopil to Uman, highlighting the strong safety benefits from smaller scale safety focused treatments combined with more intensive enforcement and promotion operations.

214. It is also recommended that a EuroRAP study is undertaken for the whole 21,000 km Ukrainian network of international, national and regional roads of significance. This will provide essential information for any additional road transport investment projects in Ukraine over the next five to ten years. While many of these projects will involve major reconstruction projects for reasons other than safety, it is important that the opportunities are taken to promote safety focused improvements on a corridor basis. EuroRAP provides a proven methodology for prioritizing and selecting projects for infrastructure treatment, and as the methodology extends to cover not just the national road network, but also significant local networks, it will be easier to compare infrastructure safety performance between Ukraine and Europe.

Knowledge Transfer

215. Sustained knowledge transfer relating to good road safety management practices in Europe and the application of safe system principles is an important priority across the road safety partner agencies, and into wider political, professional and institutional settings within Ukraine. It is understood that a specific road safety capacity building component is earmarked for Ukravtodor through the EIB project, and investment is also proposed into training for specific road traffic policing activity.

216. Aside from knowledge transfer activity within individual agencies, it is important that knowledge transfer investments are made in critical cross-agency contexts. This is important to ensure for example that leaders develop and model a common professional understanding of road safety issues in Ukraine, and can engage with their road safety leadership counterparts in Europe. Twinning arrangements are likely to continue to be important in this, and important supplements to the larger scale safety investments which are required and addressed in Section F.

217. It is recommended that a specific road safety management knowledge transfer project is developed which focuses on the professional development in road safety of key agency and professional leaders. This would include peer to peer exchange with European neighbours, and access to international expertise and training for specific professional disciplines, but also on a partnership basis as a whole. That is, investment is made into a cross-agency training and development program which actively promotes learning across disciplines and across organisational boundaries.

218. Consideration should be given to whether twinning arrangements can be enhanced with the best performing EU member states by covering all the key government agencies – road agency, motor vehicle regulator, road traffic police and

emergency trauma response. This would reinforce the development of an approach which emphasises the mutual dependency of each of the Ukrainian institutions as they focus on their road safety responsibilities.

E Developing a Multisectoral Strategy for Road Safety

219. Developing a multisectoral strategy for road safety is a significant task. It needs to be undertaken through a collaborative process which builds understanding of and commitment to addressing critical road safety issues at both a political and professional level, and ideally within key institutions within the community. It will be particularly challenging when there is a major shift in safety philosophy to the safe system approach which is required for Ukraine. The notion that the road transport system should be safe (that is, free of death or serious injury) is at once a simple notion. However, it also directly challenges decades of professional training and practice in transport systems throughout the world which has accepted fatality and serious injury as an unwanted but necessary price of progress in societal mobility.

220. This section therefore focuses on and makes some recommendations regarding key elements of a strategic framework for road safety in Ukraine. It begins by addressing the current strategy.

Current Strategy

221. In May 2011, the Cabinet of Ministers of Ukraine (by Administrative Order dated 25 May 2011 No. 480-r) approved the *Strategy for Improving the Road Traffic Safety Rate in Ukraine up to 2015*. The Ministry of Interior together with other central executive bodies concerned were required, to develop an action plan for implementing the strategy. An Action Plan was approved by the Cabinet of Ministers in 2012, with over 77 separate actions.

222. The strategy noted that, through a number of recorded orders and resolutions, the number of road traffic accidents had been reduced, but almost 35,000 persons had been recorded as killed in Ukraine for the previous five years and over 286,000 persons injured. Drivers were identified as the cause of 77% of all road traffic accidents, and the fatality rate was recognised as considerably exceeding countries in Western Europe.

223. Ten problem root causes were identified in the strategy. These are set out in the left hand column of the table below. The right hand column provides an assessment of the strategic analysis.

Problem Root Causes	Assessment
i. Insufficient level of road traffic safety measures	This is self evident, and indicative of a lack of an overall road safety management capacity to set performance targets, perform the necessary institutional management functions, and implement evidence based interventions to deliver safer roads, vehicles and users.
ii. Inadequate funding of road traffic safety actions	This is also self evident, and indicative of a lack of a sustainable safety funding system which ensures that the government's lead agency for road safety manages a secure Road Safety Fund, and has decision rights over the allocation of that fund.

iii. Overlapping of central executive bodies' powers in the road traffic safety enforcement	Overlapping enforcement powers will create inefficiencies, but the focus of road traffic safety enforcement needs to be on developing a highly mobile deterrent based approach which focuses on key behavioural issues such as speeding, drink driving and non-seatbelt use.
iv. Imperfect legal regulation for preventing road traffic rule infractions	There is a significant reform opportunity associated with approximating the EU acquis, but the focus of road traffic regulation needs to be on developing a highly mobile deterrent based approach which focuses on key behavioural issues such as speeding, drink driving and non-seatbelt use.
v. Inefficient monitoring of traffic rule observance by the road users	Again, the focus of road traffic rule observance needs to be on developing a highly mobile deterrent based approach which focuses on key behavioural issues such as speeding, drink driving and non-seatbelt use. The introduction of fully automated speed enforcement is required.
vi. Low level of road users' discipline	The victims of road traffic injury should not be blamed for the pain and suffering they endure. Road users should be disciplined in their actions, but primary safety responsibilities lie with the road agency, the motor vehicle regulator, the traffic police, and a wide range of actors outside government who can deliver a safer road transport system.
vii. Insufficient level of vehicle drivers' training	The level of driver training is highly unlikely to be a strategic issue, because physical control of a vehicle is a low level skill. Effective driver licensing systems, clear direction about critical safety behaviours, and ongoing compliance mechanisms are likely to be far more important.
viii. Inadequacy of street-road network condition and traffic density rate	The road network has not been designed and is not being managed to allow safe use. The primary safety issues are the speed which motor vehicles are allowed to travel on the network, and the low level of protection the network provides both motorised and non-motorised users. The surface quality of the network is not a major safety issue.
ix. Improper technical maintenance of vehicles	The technical maintenance of vehicles is much less important than the safety technology within the vehicle at the time it enters the Ukrainian fleet, which needs to be the focus of vehicle safety reform.
x. Insufficient implementation of advanced technologies and technical means for traffic road management	The greatest benefits from technology are likely to come from 1) infrastructure safety retrofitting of the core road network, 2) stronger safety technology controls on imported vehicles, 3) introduction of fully electronic motor vehicle and driver regulatory systems, and 4) fully automated speed enforcement systems.

224. Implementation of the strategy was focused on:

- i. State regulation of road traffic safety sector
- ii. Observance of road traffic rules by road users

- iii. Adequacy of street-road network and its condition to the road traffic density
- iv. Proper level of vehicle driver training
- v. Safety of vehicles
- vi. Delivery of medical care to the injured
- vii. Increase the scope of communication and education actions

225. The list of ten problem root causes and the subsequent content of the Strategy reflect some core road safety management issues in Ukraine. Overall, there is no safe system thinking evident in the diagnosis. It is very heavily focused on the road user and assumes that driver training will be effective. The research evidence does not support driver training as a cost effective safety measure, and instead supports a series of testing and monitoring procedures as the driver enters the driver licensing system. As well, the section on roads contains an inappropriate emphasis on road users' behaviour. Solutions such as informing the driver of blackspots suggests the onus is on the road user to behave perfectly, rather than the focus being on the road provider to provide safety protection for road users in the event they make a mistake. Finally, it is notable that speed management is not directly addressed at all in the strategic diagnosis. As noted previously speed management is critical, because the impact speed has a direct bearing on the injury outcomes in any crash whether the crash is speed related or not.

226. It should be noted that a number of the priorities identified in the strategy remain relevant, but it is clear that implementation of the strategy has proven difficult. This is not unusual because there is a strong temptation at a national level to identify a very large number of things to do, rather than focus on a smaller number of genuinely strategic actions. This difficulty would have been exacerbated by the lack of a lead agency for road safety. One strategic priority was to enhance the activities of the Road Traffic Safety Coordination Council, but this Ministerial Council was established in 2006 without any professional support and only met briefly. It does not exist in any form now.

227. The strategy anticipated that it would be funded out of State and local government budgets, as well as international technical assistance, bank loans, investment funds, and other sources. However, reference to funding appears to have been aspirational and there was no specification of the funds required. Similarly, the expected results of the strategy were very general goal statements such as improving traffic safety, improving the condition of the road network, and increasing compliance with traffic rules. Both the results that are being sought and the funding systems required to deliver those results need to be much more strongly specified in any road safety strategy document.

Elements of a future strategy

228. Typically, the best performing countries set road safety strategies over a ten year period, and develop a series of funded action plans that lead them towards realising the goals of the strategy.²⁶ The strategies include targets for reductions in fatalities and serious injuries, and focus attention on the key interventions which will

²⁶ International Transport Federation, *Road Safety Annual Report Summary 2015*

achieve those targets. Management systems are put in place to drive the implementation of the interventions and the achievement of the targets.

229. Given the extraordinary pressures which Ukraine faces, yet the substantial and persistent losses on the road, it is recommended that the focus be on preparing a short document (to supplement a new strategic programme) which is aligned to safe system principles. The strategy document would:

- i. Include a clear political mandate for road safety from the President and/or the Prime Minister
- ii. Describe how road safety will be managed and led within the Government of Ukraine
- iii. Set medium term targets out to 2020 and identify critical intermediate outcome and delivery measures to achieve that target
- iv. Link to a new strategic work programme which details the critical areas of activity over the next five years, and the major investments and decisions that will be pursued.

230. For the strategy to be effective, it is recommended that it is prepared on a collaborative basis, involving each of the major government agencies, and in consultation with the private sector and non-government organisations.

Strategic themes

231. It is recommended that the strategy is developed along the following five key themes.

Safety leadership

232. The nature of government administration in Ukraine with highly prescriptive functions relating to the powers or competence of an agency affects the ability of the Government of Ukraine as a whole to deliver substantial improvements in road safety. This needs to be addressed through the establishment in legislation of a National Agency for Traffic Safety, with a clear political mandate to guide the national road safety effort, and supported by a professional Secretariat. Specifically, it is recommended that the Government of Ukraine:

- i. nominate the Cabinet Minister who will be responsible for overseeing the establishment of the NHSB
- ii. specify a vision for road safety which relates to the ultimate safe system goal of eliminating fatalities and serious injuries
- iii. set interim 2020 targets towards that goal, including final outcome targets, and delivery targets which are linked to Chief Executive performance
- iv. schedule a review of strategy implementation by the Cabinet of Ministers in 2018
- v. seek specific cross-party endorsement of the road safety strategy document from Parliament.

233. These actions need to be backed up by a lead agency for road safety with professional safety management systems which are focused on improved results, and sufficiently resourced to deliver results.

Safety principles

234. Ukraine needs to close the gap between its current road safety performance and the performance of its European neighbours, and the safest countries in the EU. A fundamental shift in safety philosophy will be needed to achieve this, leading to safe system principles being articulated and applied to decision making processes within government, and the wider community. Specifically, it is recommended that the following principles provide the basis for road safety decision making and investment in Ukraine:

- i. The ultimate road safety goal is the elimination of fatalities and serious injuries from everyday use of the road network
- ii. Road users make mistakes in their use of the road network, and should not suffer death or serious injury as a result of those mistakes
- iii. Whether or not it is implicated in a crash occurring, motor vehicle speed determines the injury outcomes of a crash and needs to be effectively controlled
- iv. Road improvement projects and vehicle import controls need to focus on the protection of users from harm through improved technology and design
- v. Road users must comply with key traffic rules, and it is the responsibility of government agencies, the private sector and non-government organisations to assist them to use the road free from harm

Safety investment

235. Rather than identifying a long list of activities, road safety strategies tend to be more effective when they identify a small number of significant strategy projects which will become a focus of large scale investment. There are many different needs at this point in Ukraine's road safety development. By identifying significant safety projects, stronger investment cases can be put to the Government of Ukraine as well as to international finance institutions which are investing in road transport. Specifically, it is recommended that the strategy document commit to:

- i. the preparation of a five year safety funding and investment program, covering all aspects of the road network, the vehicle fleet, and road traffic enforcement
- ii. the establishment within the lead agency of a Road Safety Fund, comprising at least 50% of all additional road traffic enforcement fines (using 2015 as a baseline) and, as proposed in draft legislation, at least 10% of all road infrastructure investment funds.

Safety standards

236. The path towards fully integrating technical standards and norms applying to road safety with those in Europe, and implemented in a manner which will lead to adoption of the best performing safety systems in Europe is critical. An important step has been taken with the EU-Ukraine Association Agreement, but this is the first step of a significant modernisation journey, and there needs to be a strong safety focus as every step is scoped, planned and implemented. Specifically, it is recommended that:

- i. a safety focussed plan is prepared for the integration of technical standards and norms in Ukraine, which goes beyond the commitments set out in the Association Agreement
- ii. the plan explicitly recognise the gap between current technical standards and norms in Ukraine and current technical standards and norms in the best performing EU countries, and set out a multi-year timetable by which time the gap will be closed.

Safety systems

237. It is recommended that a focus is placed on developing and strengthening road safety management systems, at both a national and sub-national level, and is augmented at an agency or enterprise level. That is, a more systematic approach is taken to identification of key safety performance factors, specification and funding of plans to address those factors, effective implementation of the plans, and monitoring and evaluation activity to translate lessons learned into the next continuous improvement phase. This will be important for the road safety lead agency, but also for other Government agencies. It will assist the private sector to better control their work related road risks, and those companies which have some established management systems in place can be encouraged to voluntarily use ISO 39001 Road Traffic Safety Management Systems to strengthen in this area.

Implementation

238. It is considerably more difficult to implement than to develop strategy. The lead agency will be critical in this role and will need to find ways of working cooperatively with major stakeholders to get around to barriers to implementation as they arise. Government agencies need to be held accountability for delivery of actions in the strategy.

239. The next section recommends specific elements of a work program to help focus this effort.

F Strategic Investment Packages

240. Implementation of large scale safety focussed investments will be needed in Ukraine for the foreseeable future in order to close the gap in safety performance with European neighbours. It is recognised that as part of the TRACECA regional road safety project, a short term action plan was developed amongst stakeholders and this has been taken into consideration. Amongst the variety of initiatives that are proposed or underway a small number of high value strategic investment packages have been identified and are recommended here as meriting particular attention by the road safety agencies of the Government of Ukraine, and support from international donor partners in road safety. The recommended packages are put forward for discussion and fine-tuning as needed depending on the funding available.

241. The investment packages have been described in broad terms and focus on deliverables over a 24-36 month period. They should be considered in terms of their potential for a learning by doing approach, so that where external consultancies are engaged key elements of terms of reference include working collaboratively alongside Government personnel in a manner which promotes road safety knowledge transfer and leaves systems and processes in place which can be used for subsequent improvement projects. A number of the investment packages lead directly to further work and safety investment projects.

242. The intention is that these investment packages form the basis for a safety investment plan for Ukraine, for which there is significant need. It is therefore recommended that, once the overall form and shape of these packages is agreed, the Government of Ukraine and its international partners look first to this schedule, and engage with the NRSPG and the subsequent NHSB/lead agency regarding the best safety components to build into their road transport investment projects or other support activity. The packages may need to be adapted to specific sources of funds available and developments in Ukraine.

243. It is envisaged that the first priority is the letting of a road safety management consultancy, which will provide the necessary external support to the NRSPG on critical and urgent road safety issues, and lay the basis for a sustained safety management programme.

Developing Road Safety Management Systems	
Objective	Prepare and support initial implementation of a multi year work program through to 2020 to systematically lift national road safety management capacity and performance in Ukraine
Accountability	(National Agency of Traffic Safety) (Ministry of the Interior) (Ministry of Infrastructure) (Ministry of Health) Delivery under a substantial road safety management consultancy contract, which is sourced from a mix of Ukrainian nationals and internationally recognised road safety management consultants
Deliverables	<ul style="list-style-type: none"> Support prompt passage of draft legislation to among other things establish the NHSB/lead agency, provide the necessary establishment tasks for the NHSB/lead agency and the professional fulltime Secretariat,

	<p>and support future development of a comprehensive road safety law to improve the integration of management systems and interventions over time</p> <ul style="list-style-type: none"> • Support regular meetings of NHSB/lead agency, once established, and the National Road Safety Programme Forum, through preparation of strategic establishment and safety management advice • Develop a multi year national programme for road safety through to the end of 2020, incorporating a new strategic direction, a target to achieve at least a 25% reduction in reported fatalities, actions heavily prioritised to achieve this target, and accountabilities for delivery amongst various stakeholders • Prepare a road safety promotion plan and related investment strategy to support the introduction of new compliance/enforcement/corridor projects • Develop and implement a major road safety knowledge transfer project for senior leadership and professional staff across the Ministries of Interior, Infrastructure, Health and associated agencies • Develop and implement a project aimed at supporting the development of road traffic safety management systems and possible voluntary certification to ISO 39001 for a variety of small medium and large carriers of passengers and freight, as well as other companies outside the transport industry which have a significant exposure to road trauma (eg, sales operations) or significant safety responsibilities (eg consignors of goods) • Development and coordination of safety components in road transport investment projects negotiated through the Ministry of Infrastructure and Ministry of the Interior • Prepare and gain approval for a five year safety funding and investment program, including the source and scale of funding for the NHSB from relevant regulated service fees or traffic fines • Develop a ten year safety legislation reform plan to achieve parity with current best practice legislative standards in European countries which have the safest road transport systems, and to maximise compliance with those standards • Commission a EuroRAP study to complete the highway safety analysis begun in 2012/13 by covering the remainder of the 21,000 km of regional, national and international roads of significance • Use current TRACECA study on data analysis to develop an investment proposal for Ukraine's fatal and injury crash data system as it applies to the collection, collation, analysis, reporting and use of data • Invest in improved and modernised crash data system, related training and capacity building • Begin development of a comprehensive data system for monitoring road safety and implementation of the program.
Subsequent activity	<ul style="list-style-type: none"> • Continued support for road safety management, and implementation of the national programme • Specific promotional investments to support major new initiatives as they are implemented • Ongoing professional development projects across key stakeholder agencies • Implementation of safety funding and investment program, and safety legislation reform plan.

Improving Road Traffic Enforcement	
Description	A major road safety capability project which is based on providing leadership, analytical and practical support for the new road traffic policing force to significantly reduce road trauma
Accountability	Ministry of the Interior
Deliverables	<ul style="list-style-type: none"> • Develop in consultation with the highest levels of command within the new road traffic policing force, a road safety training, intelligence and equipment capability needs assessment, based upon the results of the current EU supported road traffic enforcement planning project • Develop and test road safety training and develop programmes suitable for each professional level from the national command through to on-road patrols • Prepare a schedule of investments into back-office analytical tools which can be used by commanders to implement improved road traffic enforcement planning, and in-vehicle specialist traffic policing equipment to support targeting of drink driving, speeding, and collection of road crash data • Prepare an investment and implementation plan to significantly strengthen drink driving enforcement in order to deliver at least 100 random roadside breath tests per annum, including a review of the legal instruments required to effectively deter drink driving.
Subsequent activity	<ul style="list-style-type: none"> • Implement sustained road traffic enforcement training programme • Investment into analytical tools and in-vehicle specialist equipment to support implementation of road traffic policing planning • Implement drink driving enforcement plan.

Introducing Automated Speed Enforcement	
Description	A major feasibility study to identify and develop specific investment proposals for the introduction of automated speed enforcement systems in Ukraine.
Accountability	Ministry of the Interior
Deliverables	<ul style="list-style-type: none"> • Review of the legislative settings associated with automated speed enforcement including but not limited to site selection, electronic detection-evidence-adjudication, and penalties (including owner liability and driver licence loss), and make specific recommendations on any changes to legislation required to deter speeding motorists • Review of the current compliance and enforcement systems in place to detect and prosecute speeding drivers and analyse this against good practice systems in Europe, focusing specifically on deterring motorists from speeding • A scheduled rollout for introduction of automated speed enforcement systems, beginning with mobile speed camera systems, but also

	<p>including a mix of fixed speed cameras, and average (point to point) speed enforcement systems.</p> <ul style="list-style-type: none"> • Specification of good practice site selection criteria, and the use of this criteria to identify at least 10 average speed enforcement sites, 100 fixed camera enforcement sites, and 5000 mobile speed camera enforcement sites • Schedule of investments in cameras, and the supporting operational systems including information technology systems to manage high volume, general deterrent focused automated speed enforcement • Fully developed documentation to support contracts to be let for all elements of the supply, installation and operation of automated speed enforcement systems, and for the necessary training of relevant personnel
Subsequent activity	<ul style="list-style-type: none"> • Early implementation of mobile camera operations with supporting promotional activity • Sustained programme of investments into fixed camera and average speed camera systems including supporting enforcement systems, and further mobile camera operations

Developing Regulatory Compliance Systems	
Description	A major study to assess legislative, information technology and operational systems to support motor vehicle, driver and operator compliance systems that will facilitate more effective enforcement
Accountability	Ministry of the Interior
Deliverables	<ul style="list-style-type: none"> • A comprehensive review of legislative, technology and client systems and practices regarding the registration of motor vehicles, and the licensing of motor vehicle drivers and of commercial transport operators, against good European practices • The preparation of a comprehensive reform program to modernise the management of regulatory systems including: <ul style="list-style-type: none"> • The legislative framework to support good practice • The staged investment in information technology systems which will be necessary to manage vehicle/driver/operator regulation and all regulatory transactions • Fees and charges to meet the full costs of managing an effective road transport regulatory system on a sustainable basis and supporting road safety management and leadership responsibilities of the NHTSA/lead agency • Audit and compliance systems to ensure all regulatory documentation is issued according to specified standards, including standards for delivering regulatory services such as vehicle inspections or licensing tests • Enforcement systems to ensure that serious or repeated breaches of regulation result in the removal of vehicle/driver/operator authorisations • The preparation of advice to Government on the staging and financing of the reform programme

	<ul style="list-style-type: none"> • The preparation of documentation to support contracts to be let in accordance with Government decisions
Subsequent activity	Implementation of investment decisions regarding the modernisation of road transport regulatory systems, including supporting fees, audit and compliance, and enforcement systems

Implementing Safe Systems Corridor Demonstration Projects	
Description	A major safety improvement project on the M12 using 2013 EuroRAP study as the basis for developing a specified set of works.
Accountability	Ministry of Infrastructure
Deliverables	<ul style="list-style-type: none"> • Establish multi-stakeholder corridor safety group to lead the preparation of an integrated project plan to be implemented over a 24 month period, including strong representation from local government, community leaders, and local arms of national agencies • Define the scope and expected performance of the corridor project, covering at least 100 kms of the M12 from Ternopil to Uman excluding the length immediately east of Ternopil, the tasks and capabilities required to achieve the agreed safety performance along the project corridor, and the processes which may need to be established to deliver the project • Deliver agreed project, including implementation of works developed out of the Safer Roads Investment Plan, commitment from the new traffic policing force to strictly enforce drink driving, speeding and other key safety laws, agreement with local government to implement pedestrian safety measures in the road environment, and engagement of community based promotional campaign to build understanding of project and commitment to safety measures • Undertake process evaluation within six months and then again within 12 months of the project being agreed, with recommendations on the establishment of similar corridor safety projects.
Subsequent activity	Use EuroRAP results across the remainder of the regional, national and international roads of significance, and process lessons learned from the establishment of this project in Ukraine to invest in two similar and highly visible projects much closer to Kyiv and one other major population area.

ANNEX 1: The importance of controlling traffic speed to road safety

Controlling traffic speed is critically important to achieving sustainable, cost effective improvements in road safety.

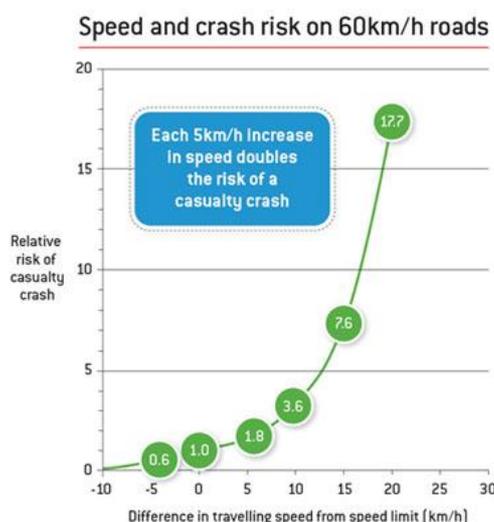
Early Swedish research on real world changes in traffic speed and crashes revealed that relatively minor adjustments in policy and operational settings can result in major safety improvements, particularly in fatality reduction.²⁷ A large body of research has subsequently backed this up.²⁸ The potential effects of even a 1 km/h change in motor vehicle traffic speed is set out in the table below.²⁹

Percentage change in crashes for 1 km/h change in average speeds						
Crash severity	Reference speed (km/h)					
	50	70	80	90	100	120
Injury crashes (%)	4.0	2.9	2.5	2.2	2.0	1.7
Injury and fatal crashes (%)	6.1	4.3	3.8	3.4	3.0	2.5
Fatal crashes (%)	8.2	5.9	5.1	4.5	4.1	3.3

Determining a safe travelling speed for any road environment depends on the function, design and use of the road. The table below documented by SWOV, a noted road safety research institute in the Netherlands, shows the safe speeds for a number of road types and potential conflicts – “safe” is defined here as meaning a speed at which 90% of the crashes that take place will cause no serious injuries.³⁰

Road Type and Potential Conflict	Safe Speed
Roads with possible conflicts between cars and unprotected road users	30 km/h
Intersections with possible lateral conflicts between cars	50 km/h
Roads with possible frontal conflicts between cars	70 km/h
Roads on which frontal and flank conflicts with other road users are impossible	100+ km/h

The speed being travelled by a motor vehicle in different road environments has a direct bearing on the risk of a crash occurring. The first rigorously controlled scientific study to demonstrate this crash risk relationship was conducted by CASR at the University of Adelaide, and found that each 5 km/h increase in speed over the speed limit in a 60 km/h zone doubles the risk of a casualty crash.³¹ This is similar to the risk of a casualty crash for a driver at the legal drink driving limit



²⁷ G Nilsson (2004). *Traffic safety dimensions and the Power Model to describe the effect of speed on safety*, Bulletin 221, Lund Institute of Technology, Department of Technology and Society, Traffic Engineering, Lund, Sweden

²⁸ OECD (2006). *Speed Management*, Paris, France.

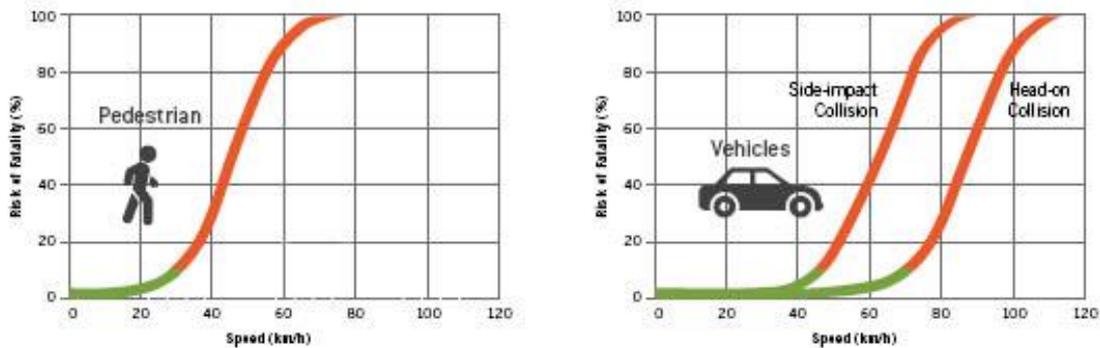
²⁹ L Aarts and I Van Schagen (2006). “Driving speed and the risk of road accidents: A review of recent studies” in *Accident Analysis and Prevention*, 38.

³⁰ Wegman, F.C.M. & Aarts, L.T. (2006). *Advancing Sustainable Safety; National Road Safety Outlook for 2005-2020*. SWOV Institute for Road Safety Research, Leidschendam.

³¹ Kloeden CN, McLean AJ, Moore VM, Ponte G (1997) *Travelling speed and the risk of crash involvement*. Volumes 1 and 2 (CR172), Federal Office of Road Safety, Transport and Communications, Canberra.

throughout Europe and highlights the safety impact of exceeding the speed limit by only a small amount.

The speed being travelled by a motor vehicle has a direct bearing on the risk of a fatality or serious injury occurring, whether the crash was caused by speeding or not. While different analyses will generate different risk curves, it is widely understood that the risk of a fatality for a pedestrian involved in a motor vehicle crash, for example, sharply escalates beyond an impact speed of approximately 30 km/h.



Successful speed enforcement requires strategies which maximise a driver's perceived risk of detection, through:

- High levels of perceived enforcement activity
- Mix of stationary camera enforcement (in fixed locations and seen by more people) and moving enforcement (less predictable and affecting a larger area)
- Mix of overt enforcement (visible to more people) and covert enforcement (not visible, less predictable and affecting a larger area)
- Targeting enforcement activity to when and where the target behaviours are most likely to occur or the overall safety risk is highest, and
- Use of road safety communications and advertising based on the perceived enforcement activity.

While the view is often expressed that higher traffic speeds are positive for the economy and lower traffic speeds are negative for the economy, the benefits of higher speeds are often exaggerated and the costs are often underappreciated – certainly outside of heavily congested situations. This was illustrated by one study which modelled an increase in travel time on an undivided rural road if the speed limit was reduced from 110 km/h to 100 km/h, including factors such as vehicle speed distributions, vehicles travelling in the opposite direction and the ability for vehicles to perform overtaking manoeuvres.³² Real data on rural roads illustrated that the increase in travel time is less than is first predicted by considering only the allowed speed limit – that is, there is not a decrease in traffic speeds of 10 km/h. Yet a reduction in casualty crashes of at least 20% is still likely to occur. The dramatic effect on casualty crashes associated with speeding creates significant socio-economic losses, and these usually overwhelm any benefits associated with reduced travel time.

³² JK Dutschke, JE Woolley (2010) 'Simulation of rural travel times to quantify the impact of lower speed limits', *Journal of the Australasian College of Road Safety*, 21(1).

ANNEX 2: Creating an effective lead agency structure

Various organisational forms can be deployed for a road safety lead agency, but it is important to align the structure and functions within the agency to:

- lead engagement with government administrations and other partners involved in road safety towards achievement of the country's road safety goals
- lead the analysis and provide program direction for critical road safety management functions, and road safety interventions.

The lead agency, whether an autonomous agency or a major function within an established agency, needs a fulltime permanent executive Head who would report to the non-executive Chairman of the National Agency for Traffic Safety and have close working relationships with responsible ministers. The Head of the NHTSB/lead agency Secretariat is responsible for leading the analytical and decision-making process necessary to provide the minister and/or other decision-makers with options to effectively address key road safety issues in the country, and for representing and promoting road safety across all aspects of society.

The simple functional structure for the NHTSB Secretariat is amenable to development and expansion over time as the lead agency evolves and could work as a separate work group within an established Ministry or as an autonomous office within the Presidency or Prime Ministership. The Head of the NHTSB Secretariat would be supported by two experienced Deputy Heads, capable of leading work programs that are dependent on the involvement and support of outside partners for success.

The functions that need to be aligned with positions would be:

- Deputy Head, Strategy and Development – develops and leads road safety strategy and development activity, with a particular focus on institutional management functions, and promoting effective action to achieve the country's road safety goals:
 - Policy & Planning – analysis, advice, planning and oversight of national strategic plan, road safety policy, and annual road safety action plans
 - Research & Development – initiating and managing research and development projects, reviewing and disseminating relevant research findings through road safety partners, promoting professional development in road safety across all key government and non-government partners in a position to take action
 - Monitoring & Evaluation – collating and analyzing relevant data from government agencies, preparing and publishing regular progress reports, initiating and leading projects to improve data quality
 - Funding & Finance – liaising with partners and donors to increase investment in road safety, and managing processes to allocate and account for effective use of funds deployed
- Deputy Head, Programs & Implementation – facilitates the development and implementation of high impact, targeted, and cost effective interventions to achieve the road safety goals:
 - Road & Vehicle Engineering – works with national, regional and municipal road and transport authorities to shape and facilitate the implementation of high impact safety engineering interventions

- Compliance & Enforcement – works with national, regional and municipal police and transport authorities to shape and facilitate the implementation of high impact legislative, compliance and enforcement interventions
- Promotion – develops and manages implementation of road safety promotion activity to increase awareness of key road safety issues and promote understanding of interventions to address these issues

All staff in such an organization must be capable of effectively leading work programs in their area of responsibility, and of working effectively through partnerships in order to achieve success. The agency would also need to be able to draw on sufficient funds to contract specialist or short-term contractors (for example, specialist research or statistical analyses) to meet program objectives.

ANNEX 3: EU-Ukraine Association Agreement: Road transport text extract

ANNEX XXXII TO CHAPTER 7

TRANSPORT

Ukraine undertakes to gradually approximate its legislation to the following EU legislation within the stipulated time-frames:

(1) Road transport

Technical conditions

Council Directive 92/6/EEC of 10 February 1992 on the installation and use of speed limitation devices for certain categories of motor vehicles in the Community

Timetable: the Directive's provisions shall be implemented for all vehicles engaged in international goods transport within 1 year and for all vehicles engaged in international passenger transport within 3 years of the entry into force of this Agreement, and for all vehicles, first registered after 1 January 2008, engaged in national transport within 4 years of the entry into force of this Agreement.

Council Directive 96/53/EC of 25 July 1996 laying down for certain road vehicles circulating within the Community the maximum authorized dimensions in national and international traffic and the maximum authorized weights in international traffic

Timetable: the Directive's provisions shall be implemented within 3 years of the entry into force for vehicles registered in the EU during their movement only in international network roads "E" according to Annex 1 of the European Agreement on Main International Traffic Arteries (AGR), of 15 November 1975, of this Agreement. The Association Council will take a decision on the extension of the application of the Directive's provisions to the whole network and all vehicles within 3 years of the entry into force of this Agreement.

Directive 2009/40/EC of the European Parliament and of the Council of 6 May 2009 on roadworthiness tests for motor vehicles and their trailers

Timetable: the Directive's provisions shall be implemented for all vehicles engaged in international goods transport within 1 year and for all vehicles engaged in international passenger transport within 3 years of the entry into force of this Agreement and all other vehicles within 5 years of the entry into force of this Agreement.

Safety conditions

Council Directive 91/439/EEC of 29 July 1991 on driving licences

— Introduction of the driving licence categories (art. 3)

Timetable: these provisions of the Directive shall be implemented within 3 years of the entry into force of this Agreement.

— Conditions for issuing the driving licence (art. 4, 5, 6 and 7)

Timetable: these provisions of the Directive shall be implemented within 3 years of the entry into force of this Agreement.

— Requirements for driving tests (Annexes II and III)

Timetable: these provisions of the Directive shall be implemented within 3 years of the entry into force of this Agreement.

Directive 2008/68/EC of the European Parliament and of the Council of 24 September 2008 on the inland transport of dangerous goods

Timetable: the Directive's provisions shall be implemented for all transport of dangerous goods in international road traffic within 1 year of the entry into force of this Agreement, in national road traffic within 3 years of the entry into force of this Agreement.

Social conditions

Regulation (EC) No 561/2006 of the European Parliament and of the Council of 15 March 2006 on the harmonisation of certain social legislation relating to road transport and amending Council Regulations (EEC) No 3821/85 and (EC) No 2135/98 and repealing Council Regulation (EEC) No 3820/85

Timetable: the Regulation's provisions shall be implemented in national transport within 5 years of the entry into force of this Agreement.

Council Regulation (EEC) 3821/85 of 20 December 1985 on recording equipment in road transport

Timetable: the Regulation's provisions shall be implemented in national transport within 5 years of the entry into force of this Agreement.

Directive 2006/22/EC of the European Parliament and of the Council of 15 March 2006 on minimum conditions for the implementation of Council Regulations (EEC) No 3820/85 and (EEC) No 3821/85 concerning social legislation relating to road transport activities and repealing Council Directive 88/599/EEC

Timetable: the Directive's provisions shall be implemented in national transport within 5 years of the entry into force of this Agreement.

Regulation (EC) No 1071/2009 of the European Parliament and of the Council of 21 October 2009 establishing common rules concerning the conditions to be complied with to pursue the occupation of road transport operator and repealing Council Directive 96/26/EC

— Articles 3, 4, 5, 6, 7 (without monetary value of the financial standing), 8, 10, 11, 12, 13, 14, 15 and Annex I

Timetable: these provisions of the Regulation shall be implemented for all transport undertakings engaged in international traffic within 3 years, all other within 7 years of the entry into force of this Agreement.

Directive 2002/15/EC of the European Parliament and of the Council of 11 March 2002 on the organisation of the working time of persons performing mobile road transport activities

Timetable: the Directive's provisions shall be implemented within 3 years of the entry into force of this Agreement in international transport and 5 years of the entry into force of this Agreement in national transport.

Directive 2003/59/EC of the European Parliament and of the Council of 15 July 2003 on the initial qualification and periodic training of drivers of certain road vehicles for the carriage of goods or passengers, amending Council Regulation (EEC) 3820/85 and Council Directive 91/439/EEC and repealing Council Directive 76/914/EEC

Timetable: the Directive's provisions shall be implemented for drivers engaged in international transport operations within 3 years of the entry into force of this Agreement, for drivers engaged in national transport operations within 5 years of the entry into force of this Agreement.

Fiscal conditions

Directive 99/62/EC on the charging of heavy goods vehicles for the use of certain infrastructures

Timetable: the Directive's provisions shall be implemented once Ukraine decides to introduce tolls or charges for the use of its infrastructure.