Final

Georgia's National Road Safety Strategy

2016

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1 Introduction

1.1. Brief overview

Road safety is a national priority. In 2008, when road deaths reached their highest level since the beginning of this decade, the government introduced a National Traffic Safety Strategy.[1] A National Road Safety Action Plan accompanying the Strategy was designed to cover the period between 2010 and 2013 and a range of planned intervention was carried out.[2] Since 2008, the trend in the number of deaths and deaths per 100,000 inhabitants and per 10,000 registered motor vehicles has been downward. [3]

Yet, the safety quality of daily road travel affects the lives of many Georgian citizens. Death and serious injury in road traffic crashes in Georgia has an unacceptably high cost in human and socio-economic terms. Each year, hundreds of people are killed on Georgian roads and thousands more are seriously injured. These collisions involve the most economically active citizens, many of whom are young people who bear the highest risk, as well as the most vulnerable road users – children, older people and non-motorised users. Road crashes often lead to life-long injuries, severe disruption in working life and high costs not only for victims and their families but for the wider community, employers and the health system.

Road users in Georgia face significantly higher risks of death and injury than in many other countries in the European and Central Asia region. Georgia has a road death rate (measured by the number of inhabitants) which is substantially higher than the best in Europe and more than double the average road death rate across all EU countries. The estimated socio-economic impact is large at around 1% of GDP. Continuing economic growth, assisted by the amelioration of the global financial crisis, will lead to more motor vehicle traffic producing increased exposure to the risk of death and serious injury.

However, decades of research and experience indicate that the problem of road death and serious injury is virtually preventable in the longer term.[4] [5] Death and serious injury are not an inevitable price to be paid for mobility. The adverse impact on road safety of rapid motorisation can be successfully managed through effective, results-focused and resourced road safety activity. This means that Georgia does not have to tread the costly path of other countries as they learned how to bring their highly challenging road safety outcomes under better control. Improving road safety is fundamental to improving public health; sustainable development; addressing the rights of the child to a safe environment; health and safety at work as well as tourism. The diversity of impacts of road traffic injury underlines the importance of exploring synergies with other societal goals and regional priorities e.g. with Georgia's draft Injury Prevention and Control National Strategy and Action Plan, 2014-2018[6], the TRACECA Regional Road Safety Strategy[7] and the developing national transport strategy.

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[1] Ministry of Economic Development of Georgia (2008) Georgian National Traffic Safety Strategy, Tbilisi.
[2] Ministry of Regional Development and Infrastructure of Georgia (2010) National Road Safety Action Plan, Tbilisi.
[3] Ministry of Internal Affairs (2015), Tbilisi.
[4] Eds. Peden M, Scurfield R, Sleet D, Mohan D, Hyder A, Jarawan E, Mathers C (2004). World Report on Road Traffic Injury Prevention, World Health Organisation and World Bank (Washington), Geneva.
[5] OECD (2008) Towards Zero: Achieving Ambitious Road Safety Targets through a Safe System Approach, Paris.
[6] Ministry of Health. Labour and Social Affairs (MoHLA),National Centre for Disease Control (2014), Injury Prevention and Control Action Plan 2014-2018, Tbilisi.
[7] Land Transport Safety and Security (undated), TRACECA, Regional Road Safety Action Plan, EU, Tbilisi.

1.2 Objectives

Building on previous work, this new Strategy sets out the key directions recommended by international organisations and global experts for successful and sustainable long-term road safety management in Georgia. While progress has been achieved against rising levels of registered motor vehicles, new steps are needed to allow Georgia to achieve substantially improved results and sustained success in its road safety activity.

In line with identified effective practice, Georgia's road safety activity into the future will be underpinned by the identification and measurement of the key road safety problems, a planned, systematic, results-focused response and long-term investment. Implementation of the Strategy will require effective and carefully orchestrated inputs of key governmental agencies, which acknowledge road safety as part of their core activity. Together with activity in the business sector and civil society, a new shared responsibility for road safety in Georgia is being forged.

Developed through capacity review and in consultation with the key governmental partners and road safety stakeholders, this Strategy sets a new long-term vision and goal for road safety in Georgia. In addition, an action plan will be developed in compliance with the objectives of the strategy.
As the main governmental agencies with key shared responsibilities for road safety and road traffic injury prevention, we present this Strategy to guide future road safety work in Georgia and to set out our shared responsibility for achieving better results, alongside our business sector and the community.

Approved by the following governmental agencies:

Ministry of Economy and Sustainable Development of Georgia

Ministry of Internal Affairs of Georgia

Ministry of Regional Development and Infrastructure of Georgia

Ministry of Labour, Health and Social Affairs of Georgia

Ministry of Education and Science of Georgia

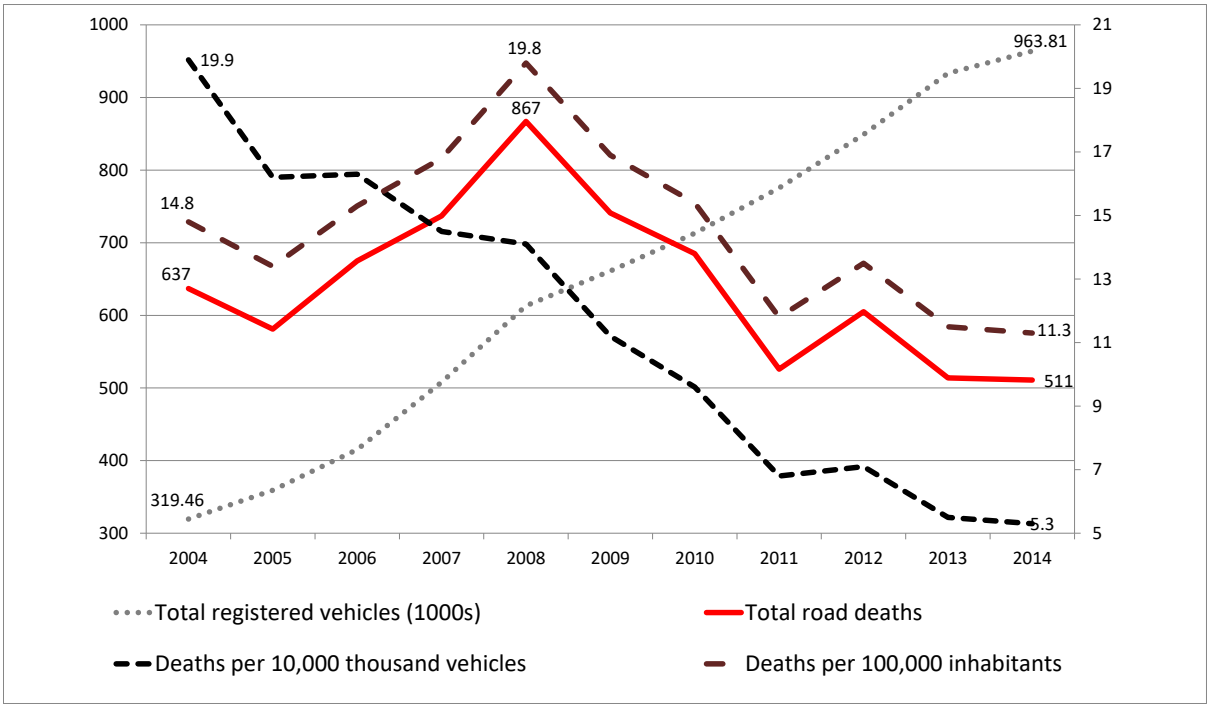
Tbilisi City Hall

2 The Current Situation

Data on serious and fatal injuries in road crashes used in this Strategy are the best available. Steps are being taken in the health, police and road sectors to improve the reliability and scope of current road crash injury data.

Reported road death rates in Georgia have reduced over the last decade by around 20% against a trebling of the number of registered motor vehicles over the same period.[8] It is not possible to indicate with any certainty what has been responsible for this development due to lack of monitoring and evaluation and in the reported limitations of current safety data quality. However, it is likely that key interventions such as the introduction of compulsory seat belt use in 2010, small-scale road safety engineering improvements, road improvements with grade separation to eliminate dangerous mixed road use, tiny decreases in the age of a very old national vehicle fleet and access to newer, safer, imported vehicles as well as annual improvements in emergency medical response will have played some part. External factors related to the global financial crisis may also have contributed in some way.[9]

Figure 1: Trends in road deaths, death rates and registered vehicles: Georgia 2004-2014



Source: Ministry of Internal Affairs 2015, GEOSTAT 2015

In 2013, Georgia's road death rate (11.5 deaths per 100,000 of population) was 4 times higher than that of the best global performer (2.8) and more than twice the average road death rate across all EU countries. In 2013, 514 people died on Georgia's roads (511 deaths under the data of 2014). Analysis of data for 2013 based on around 70% of reported road deaths indicates that around half of deaths occurred in built-up areas, mostly in Tbilisi, and half in the road network in non-built up areas. Of all road user deaths, 35% were pedestrians and the 62% were motor vehicle occupants. Around 48% of deaths were aged between 17 and 40. Males accounted for 76% of total road deaths.[10] Inequalities exist in the risk of death in road crashes by road user type, age and gender.

The Government agencies assess the current situation as serious and challenging. While progress is being made, Georgia cannot yet claim success in managing its road safety problem. Increasing traffic growth, at an average annual rate of around 8% since 2010

[8] Ministry of Internal Affairs (2015), Tbilisi.
[9] ITF/OECD (2015 in print). Road Safety and Economic Development, Paris.
[10] Ministry of Internal Affairs (2015), Tbilisi.

indicates that the scale of the existing road safety problem in Georgia may be exacerbated unless effective, sustainable action is taken.

3 National Capacity Building and Shared Responsibility for Road Safety

Road safety is a shared core responsibility for a wide range of agencies and stakeholders - between levels and across government agencies; between those with responsibilities for different parts of the road traffic system (roads, vehicles, enforcement, education emergency medical system agencies); for civil society and the business sector and all who use Georgia's roads.

3.1 The leadership role of government

Experience in many countries demonstrates that government leadership is essential to orchestrate the national effort and support the development of national road safety targets, strategy, programmes and projects. Political will is demonstrated by adoption of a long-term vision or goal, quantitative targets in projects and programmes.

3.2 Inter-agency coordination arrangements

The government will create a new interagency coordination mechanism – **Road Safety Inter-Agency Commission** that will consist of Chairmen/Deputy Chairmen of the main governmental agencies and/or Chairmen/Deputy Chairmen of the relevant line departments who have core responsibilities for road safety(Ministry of Economy and Sustainable Development of Georgia; Ministry of Internal Affairs; Ministry of Regional Development and Infrastructure of Georgia; Ministry of Labour, Health and Social Affairs of Georgia; Ministry of Education and Science of Georgia), also, representatives of the Tbilisi City Hall. An apparatus shall be established within the framework of this interagency commission – the **National Road Safety Working Group** comprising Heads and/or Deputy Heads of line Divisions/Units from relevant governmental agencies and/or experts. Representatives of other governmental agencies, non-governmental and international organisations and private sector can be invited to meetings of the Inter-Agency Commission or the Working Group when appropriate.

3.3 Current governmental agencies' core road safety responsibilities

The following governmental agencies have core responsibilities for road safety:

- **Ministry of Economy and Sustainable Development of Georgia**
  - ✓ Land transport safety strategy, policy, analysis;
  - ✓ Coordination of international /regional road safety agreements/ strategies;
  - ✓ vehicle safety policy, legislation and certification;
  - ✓ The safety of heavy goods vehicle and public transport operations.

- **Ministry of Internal Affairs of Georgia**
  - ✓ Road traffic and safety regulations and enforcement;
  - ✓ Penalty system aspects;
  - ✓ National crash reporting and database;
  - ✓ Driver and vehicle licensing and testing;
  - ✓ Vehicle and road inspection;
  - ✓ Road safety promotion campaigns to support enforcement.

- **Ministry of Regional Development and Infrastructure of Georgia**
  - ✓ Road infrastructure project management;
  - ✓ Road safety engineering policy;
  - ✓ Implementation of standards and instructions, safety audit, safety assessment and safety inspection;
  - ✓ Aspects of land (allocated for respective roads) use planning;
  - ✓ Data systems supporting road safety planning and engineering.

- **Ministry of Labour, Health and Social Affairs of Georgia**
  - ✓ Emergency medical assistance policy and operations;
  - ✓ Trauma care and rehabilitation;
  - ✓ Work–related road safety;
  - ✓ Public health and road injury prevention strategy and policy;
  - ✓ Road safety promotion;
  - ✓ Health sector road traffic injury data and trauma registries.

- **Ministry for Education and Science of Georgia**
  - ✓ Road safety education in schools;
  - ✓ School bus safety;
  - ✓ Safe school management systems;
  - ✓ Road safety promotion and community engagement

- **Tbilisi City Hall and other municipalities**
  - ✓ Land use/transportation planning;
  - ✓ Public transport licensing;
  - ✓ Road traffic management and safety engineering;
  - ✓ Emergency assistance (Tbilisi City Hall);
  - ✓ Road safety promotion.

3.4 Building capacity in engaged governmental agencies and sectors

Capacity also needs to be further developed in some of the governmental agencies. For example, a new Road Safety Division in the Roads Department of Georgia – a State agency under the Ministry of Regional Development and Infrastructure of Georgia focusing on road safety engineering is to be established; new human resource for road safety needs to be created particularly in the Ministry of Economy and Sustainable Development of Georgia and the Tbilisi City Hall. Governmental agencies will need to benefit from 'hands-on' international technical assistance to develop both good practice intervention capacity as well as supporting new institutional arrangements. In addition, Georgia needs to create a

cadre of national and local professionals who can contribute research-based approaches and knowledge to road safety policy, plans and public debate. Georgia's once strong road safety research capacity needs to be re-established in support of the long-term implementation of the Strategy.

3.5 Engaging the business sector in work-related road safety

Work-related motor vehicle crashes are a leading cause of death and long-term injury in the work place and in driving associated with work. For example, in several EU countries, between 40-60% of all work accidents resulting in death are road crashes. The costs of work-related crashes are high both for society and employers and can also adversely affect efforts to demonstrate corporate social responsibility.[11]

New tools are available to assist employers in supporting national road safety work. For example, a new international standard ISO 39001 has been designed to assist employers of organisations of all types and sizes in establishing and implementing a road safety management system.[12] This will assist organisations in integrating road safety as a core objective into their general management system as well as aligning with national road safety goals and strategies. Promotion of the Global New Car Assessment Programme's Safe Fleet Policy[13] by governmental agencies and non-governmental organisations will also assist in fast-tracking the safety quality of the vehicle fleet.

Georgian public and private sectors will work to explore opportunities to promote work-related road safety as part of the shared responsibility for road safety in Action Plans and funded projects.

3.6 Engaging civil society

Major and professional social marketing effort is required to draw attention to the tragic consequences of road crashes, the importance of safe behaviours and to create increasing public acceptance of the measures needed to save lives and prevent serious injuries. High level championing is required by leaders of several Government agencies to demonstrate whole-Government commitment and accountability and to promote the shared responsibility for action.

The non-governmental sector in Georgia is active and deserves encouragement and support in its awareness-raising efforts of the consequences of road crashes, creating a demand for safety and safety equipment and in the engagement of the community in road safety initiatives.

Georgia will embark upon continuous national social road safety marketing and in high-level promotion of the shared responsibility for preventing the tragic waste of avoidable death and serious injury on Georgia's roads. It will encourage community initiatives in support of the Strategy.

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[11] DaCoTA (2012). Work-related road safety, Deliverable 4.8v of the EC FP7 project DaCoTA, Brussels.
[12] ISO (2012) ISO 39001: Road Traffic Safety (RTS) Management Systems Standard, Requirements with Guidance for Use, International Standards Organisation, Geneva.
[13] Global New Car Assessment Programme (Global NCAP) (2014). Safe Fleet Policy, London.

4 Georgia's Long-term Road Safety Goal

Against this background and in line with internationally recommended practice, a new long-term road safety goal for Georgia is set out in its vision for safe mobility and a *Safe System*. This aims to work systematically, affordably, acceptably and for however long it takes on a path towards roads and traffic which are eventually free from death and serious injury.

"Towards roads and traffic which are eventually free from death and serious injury"

While international organisations state that trying to prevent the occurrence of all road crashes is unrealistic, focusing on and working towards the virtual elimination of death and serious injury is recommended to all countries as a long-term aspiration.[14] A goal to achieve this by 2050 has been adopted by the EU.[15] Many low, middle and high-income countries and cities are implementing this *Safe System* goal, measurable, quantitative targets and system-wide strategies in projects and plans. The long-term vision aligns well with many other societal goals and provides cohesion, assisted by time-limited targets and objectives, for the efforts of a wide variety of sectors.

5 Adopting a Planned, Systematic, Results-focused Approach

Georgia is making progress in road safety but current efforts are insufficient to achieve the progress that all agencies desire. The road safety performance of countries which have long been active in road safety will not be achieved overnight. A long-term, planned response and investment is required to achieve sustainable improvements in road safety results. Capacity in Georgia for good practice safety management needs to be built over time but can benefit from the substantial body of international knowledge and new tools.

Key road safety problems need to be measured, reported transparently, the level of improvement targeted and progress monitored. Addressing these will involve improving all components of the road traffic system (planning, design, construction and use of roads, mandatory periodic roadworthiness tests for motor vehicles, vehicle safety standards and compliance, driver and rider licensing standards and user compliance with key road safety rules and the emergency medical system and trauma care). The key intervention strategies are set out below.

5.1 Key intervention strategies

Effective *Safe System* intervention strategies to prevent death and serious injury comprise:

- Separation of or safe integration of dangerous mixed road use.
- Managing vehicle speeds to align with crash protection levels in roads and vehicles.
- Providing crash protective roadsides and vehicles.

[14] OECD (2008) Towards Zero: Achieving Ambitious Road Safety Targets through a Safe System Approach, Paris.

[15] European Commission (2011). White Paper: Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system COM(2011) 144 final, Brussels, 28.3.2011.

- Deterring dangerous road user behaviour (e.g. through combined police enforcement and publicity and also through in-vehicle driver assistance systems).
- Managing risk through safety-related motor vehicle driver/rider licensing and testing.
- Managing risk through motor vehicle safety standards/designs and their compliance.
- Fast and efficient emergency medical help, diagnosis and care.

If deaths and serious injuries are to be prevented and mitigated, then road safety management needs to address common human error and human tolerance to injury and the needs of both motorised and non-motorised users in the proactive planning, design, operation and use of the road traffic system.[16] For example it has been estimated that around 1 in 500 driving decisions can be wrong, involve a mistake, an error of judgement, or a missed signal.[17] Human tolerance to injury thresholds are now well understood and this requires better attention to separating dangerous mixed road use, speed management and the protection offered by road and vehicle design and equipment.

Systematic road safety strategy also involves intervention to reduce exposure to the risk of death and serious injury; prevent death and serious injury; mitigate the severity of injury when a crash occurs and reduce the consequences of injury after the crash has occurred. Safety needs to be in the mainstream of the developing Georgian road network and road traffic system.

In order to support these initiatives national road safety management capacity will need to be strengthened and new institutional arrangements put in place assisted, step by step, by hands-on international technical assistance.

An action plan will be devised to launch this Strategy in support of the long term road safety vision and goal.

6 The Benefits of Long-term Investment in Road Safety

In Georgia, as elsewhere, road crashes comprise over 90% of all transport crash deaths and crash costs. Road crashes are costly as a proportion of Gross Domestic Product. They impose an enormous burden on the health service and are a leading cause of death and hospital admission for key age groups. While detailed cost data is not yet available for Georgia, a recent update of the external costs of road transport for EU countries estimates that the average value for the prevention of a road fatality is around €1.87 million (based on 2010 prices). In EU countries, the total value of the reductions in road deaths for 2013 compared to 2010 is estimated at approximately 10.7 billion euro.[18]

Potential savings from road safety investment are very large.[19] While it is understood that cost benefit analysis may not always be the best tool for determining road safety priorities,

[16] Tingvall C (1995), The Zero Vision. In: van Holst, H, Nygren A, Thord R, eds. Transportation, traffic safety and health: the new mobility. 1st International Conference, Gothenburg, Sweden Berlin, Springer-Verlag, 1995:35–57.
[17] Australian Road Assessment Programme (2013), Star Rating, Australia's Network of National Highways, Australian Automobile Association, Canberra.
[18] European Transport Safety Council (2011) Methodological Note PIN Report 2011, and ETSC(2014), Brussels. Monetary Valuation of EU-wide road safety developments in 2013, RE Allsop, 2014.
[19] Ricardo-AEA (2014). Update of the Handbook on External Costs of Transport, Final Report for the European

many interventions demonstrate very high benefits to costs and some can be sustained over long periods. For example high-visibility safety policing combined with social marketing initiatives to reduce drinking and driving, speeding and increase seat belt use can lead to a substantial reduction of road trauma with benefits to cost within the range of 8:1 – 13:1.[20] The benefits to cost ratio of investment in road safety engineering treatments is high, commonly around 5 on major schemes and even 2 to 3 on 'improved' networks.[21] Vehicle safety initiatives, where benefits across the national fleet may take a little longer to accrue, represent a particularly efficient and effective means of securing casualty reduction. Benefits to cost have been identified for a wide range of active and passive safety measures.[22]

Georgia pursues its investment in national road safety work with the assistance of several international development agencies including the World Bank, the Asian Development Bank, the European Investment Bank, the European Investment Bank, the Japan International Cooperation Agency and the European Bank of Reconstruction and Development. The European Union and the United Nations Development Programme (UNDP) play an active role.

Road traffic injury imposes a substantial and unacceptably high burden on the economy and the benefits to cost ratio of identified preventative measures to address avoidable trauma remains high. Meeting the challenges of increasing motorisation clearly requires increased, staged affordable investments in road safety, especially where treatments demonstrate high benefits to cost. Georgia continues to work with its international partners towards securing further investments in road safety.

7 Measuring, Targeting and Addressing Key Road Safety Problems

The overarching road safety problem in Georgia, as for all other countries, is the number and rate of deaths and serious injuries. Georgian government agencies are set on a course to improve the recording and reporting of deaths and serious injuries in road traffic crashes in the national database. Reliable data is needed to set national casualty reduction targets.

Measurement is also needed for those problems which scientific researches demonstrate are causally related to these serious and fatal crash outcomes and which assist the closer management of road safety.

Addressing many of these problems requires focused multi-sectoral action to address specific objectives. For example, managing the objective of 'increasing seat belt use by x%' will require normal traffic surveys of seat belt use, setting targets for desired increases in use

Commission: DG MOVE, ED57769 Issue Number 1.

[20] 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 Specification of Lead Agency Reforms, Investment Strategies and Safe System Projects, World Bank Global Road Safety Facility, Washington DC.

[21] Hill, J and Starrs, C (2011), Saving lives, saving money. The costs and benefits of achieving safe roads, Road Safety Foundation and RAC Foundation, http://www.roadsafetyfoundation. org/media/1107.

[22] Hynd D, McCarthy M, Carroll JA, Seidl S, Edwards M, Visvikis C, Reed R ,A Stevens (2014) General and Pedestrian Safety Technology Regulation: Benefits and Feasibility of Potential Measures, TRL, Crowthorne.

and monitoring and reporting on the effects. Intervention will involve combined publicity and police enforcement which can achieve quick results, as well as include in-vehicle measures such as seat belt reminders, which may take longer to implement, as well as employer's initiatives to ensure seat belt use while driving for work. Several governmental sectors and stakeholders are involved and need to work together to achieve these objectives.

Research indicates that speed compliance on international and state roads and municipal streets; safe passenger cars; and safe roads are the key indicators related to preventing and mitigating death and serious injury. [23]

Better measurement and reporting of the key road safety problems will be carried out in order to raise awareness of the tasks ahead and to allow the setting and monitoring of measurable road safety targets for projects and to inform the development of action programmes.

7.1 Safety quality of the road network

The combination of Georgia's mountainous topography and roads largely designed to old standards with inadequate safety provisions both contribute to a high-risk framework for the road use in Georgia.[24] New roads and upgrades are bringing new opportunities for development and, in many cases, improvements in safety. However, they can also increase the risk of death and serious injury where linear settlements are not avoided and high speeds are permitted and where there is inadequate provision for pedestrians, cyclists and other vulnerable road users.[25]

Typically, most deaths in road traffic crashes occur on a small proportion of roads where traffic volumes are high, speeds are high and where there is a wide range of high speed and lower speed traffic. Such roads usually have both urban and rural sections. These roads have high strategic priority, attract large investment, and are particularly amenable to targeted road safety treatments. However, they may increase the risk and death level where roads are not restricted to through-traffic, where high speeds are allowed in built-up areas and where there is no appropriate provision for pedestrians, cyclists and other vulnerable road users. In these cases traffic accidents often lead to tragic consequences.[26]

Systematic risk rate mapping, performance tracking and safety rating using objective data is carried out by International and European Road Assessment Programmes (iRAP, EuroRAP). Road protection scores assess the level of protection against the risk of death and serious injury in collisions for all main user groups afforded by the road environment. Each road is given a star rating from 1 to 4 stars. Minimum star ratings for the infrastructure safety of major roads are increasingly being used in targeted programmes and are recommended

[23] Stigson H, Kullgren A and Krafft M (2011). Use of Car Crashes Resulting in Injuries To Identify System Weaknesses, 22nd International Technical Conference on the Enhanced Safety of Vehicles (ESV). Washington DC. DOT/NHTSA.

[24] Breen J (2013) Road safety management capacity review: Georgia, GRSF, World Bank.

[25] United Nations Road Safety Collaboration (UNRSC) (2011). Safe Roads for Development: A policy framework for safe infrastructure on major road transport networks, WHO, Geneva.

[26] Global Road Safety Facility (GRSF) (2006-2013), Road safety management capacity reviews, World Bank, Washington DC.

especially where high quality crash injury data is not yet available or where capacity is still being built for safety engineering. One study showed that a difference in rating of 1 star – moving from 2 star to 3 stars – is associated with a 33% reduction in serious and fatal crashes. Another indicated that when moving from 1 star to 2 star, the crash cost reduced by 40%; from 2 star to 3 costs reduced by 61%; and from 3 star to 4 costs reduced by 44%. Barrier treatments, well-designed roundabouts and traffic calming treatments can produce reductions in serious and fatal injuries of 80% or more.[27]

Georgia will undertake a combination of iRAP assessment and inspection according to the guidelines developed on the basis current international good practice for its roads of international, internal and local significance. This will provide baseline measurements for future road safety engineering work and recommended affordable treatments with identified benefit-to-cost ratios. Targeted improvements based on iRAP rating and inspection in selected corridors and following specialist technical advice as well as reviews of Safe System road safety engineering and speed management will be reflected in the Action Plan.

7.2 Safety quality of vehicles

Major progress has been made in the implementation of improved vehicle occupant protection since the mid-1990s. Research shows that vehicle safety measures have played a large part in addressing targeted reductions in deaths and serious injuries in Europe, the United States, Japan and in Australasia. Improvements in vehicle safety design in Europe over this period have reduced the risk of death and serious injury for car occupants by 50% or more. While much of the progress in vehicle safety has been for car occupant safety, initiatives in pedestrian protection and powered two wheeler safety are starting to contribute to improved road safety outcomes. New Car Assessment Programmes (NCAP) rate the safety of new car models to assist fleet and car buyers using state of the art crash tests and protocols. Research shows that 5-star rated European New Car Assessment Programme (Euro NCAP) cars have a 68% lower risk of fatal injury and a 23% lower risk of serious injury compared to 2-star rated cars.[28]

In addition, introduction of mandatory roadworthiness tests for vehicles is of great importance, which is the obligation taken under the Association Agreement between Georgia and the EU.

Georgia's vehicle fleet is old with an average age estimated at between 16-20 years. However, Georgia has recently signed up to the UN ECE 1958 Agreement and is planning over time to implement key vehicle safety regulations for active and passive safety. In addition to key braking and lighting requirements, examples of the most important measures are:

7.2.1 Key UN Regulations for vehicle safety

- REG. 12 Steering mechanism - frontal impact (partly covered by Reg.94)

[27] EuroRAP (2011) Crash rate -Star Rating comparisons: Review of available evidence, May 2011, iRAP/EuroRAP Working Paper 504.2, Basingstoke.

[28] Kullgren A, Lie A, Tingvall C. (2010) Comparison between Euro NCAP test results and real-world crash data. Traffic Injury Prevention. 2010 Dec 11(6):587-93.

- REG. 14 Seat belt anchorages
- REG. 16 Safety belts and restraint systems
- REG. 17 Strength of seats, their anchorages and any head restraint
- REG. 21 Interior fittings
- REG. 26 External projections
- REG. 44 Child restraint systems
- REG. 94 Occupant protection in frontal collision
- REG. 95 Occupant protection in lateral collision
- GTR 7 Head restraints
- GTR 8 Electronic stability control
- GTR 9 Pedestrian protection

Demand for safer vehicles can also be assisted by including safety requirements in procurement and safe travel policies and by promoting safe fleet policies. The younger the fleet, the greater the opportunity for countries to benefit from life-saving technologies being introduced into new vehicles. The Global New Car Assessment Programme has recommended a 'road map' for country implementation of UN regulation [29] and has produced a Safe Fleet Policy[30]. Both can guide Georgian implementation of improved vehicle safety.

7.2.2 The Global New Car Assessment Programme 'Road Map for Safer Cars 2020'

The Global New Car Assessment Programme 'Road Map for Safer Cars 2020'[31]

ROAD MAP FOR SAFER CARS 2020	ALL NEW CAR MODELS PRODUCED OR IMPORTED	ALL CARS PRODUCED OR IMPORTED	
STAGE 1 - UN REGULATIONS* FOR: Frontal Impact (No.94) Side Impact (No.95) Seat Belt & Seat Belt Anchorages (No.14 & 16)	2016	2018	
STAGE 2 - UN REGULATIONS* FOR: ESC (No.13H or GTR. 8) Pedestrian Protection (No. 127 or GTR.9)	2018	2020	*or equivalent FMVSSs*

The safety of commercial and passenger road transport operations also requires urgent attention and key safety problems will be monitored in selected corridors and areas.

Georgia will measure and target improvements in the safety quality of its fleet. The age of its imported vehicle fleet will be significantly reduced over time, key UN ECE vehicle safety design and equipment regulations and related certification and inspection systems will be introduced. The Global NCAP safe fleet policy will be promoted to public and private sectors. A review of vehicle safety policy will be undertaken to inform next steps. In addition, review of the safety of commercial road transport and long-distance passenger operations will be carried out and recommend key initiatives. Specific vehicle safety aspects will be identified for measurement and targeted improvement in selected corridors and areas.

[29] Global New Car Assessment Programme (2015), Democratising Car Safety: Road Map for Safer Cars 2020, London.
[30] Global New Car Assessment Programme (Global NCAP) (2014). Safe Fleet Policy, London.

[31] Global New Car Assessment Programme (2015), Democratising Car Safety: Road Map for Safer Cars 2020, London.

7.3 Efficiency of emergency medical response

The appropriate management of road casualties following a crash is a crucial determinant of the chance and quality of survival. European research indicates that about 50% of deaths from road traffic collisions occur within minutes at the scene or in transit and before arrival at hospital. For those patients who are taken to hospital, some deaths occur within the first 4 hours after the crash (15%) but the majority occur after 4 hours (35%).[32] There is, therefore, a chain of opportunities for intervention. Effective post-crash care reduces the consequences of injury by efficient emergency notification, fast transport of qualified medical personnel, correct diagnosis at the scene, stabilization of the patient, prompt transport to point of treatment, quality emergency room and trauma care, and rehabilitation services. The quicker a patient has access to the emergency medical system, the greater the chances of surviving and making a full recovery. Research indicates that reducing the time between crash occurrence and the arrival of emergency medical services from 25 to 15 minutes could reduce deaths by one third. [33]

Georgia has started to roll out improvements and performance measurement in emergency medical response and this will be continued in high-volume/high risk corridors and key areas to allow further improvement to be identified.

7.4 Levels of mean speed and excess speed

Speeding is typically a factor in around 30% of fatal road collisions. Studies show that for both urban and rural roads, small differences in speed can have a large effect on the occurrence and severity of road crashes and injuries. Research indicates that 1% decrease in average speed corresponds with a 2% decrease in injury crashes, a 3% decrease in serious injury crashes and a 4% decrease in fatal crashes and vice versa.[34]

How speeds affect fatal and serious injury risk for different road users and crash types [35]

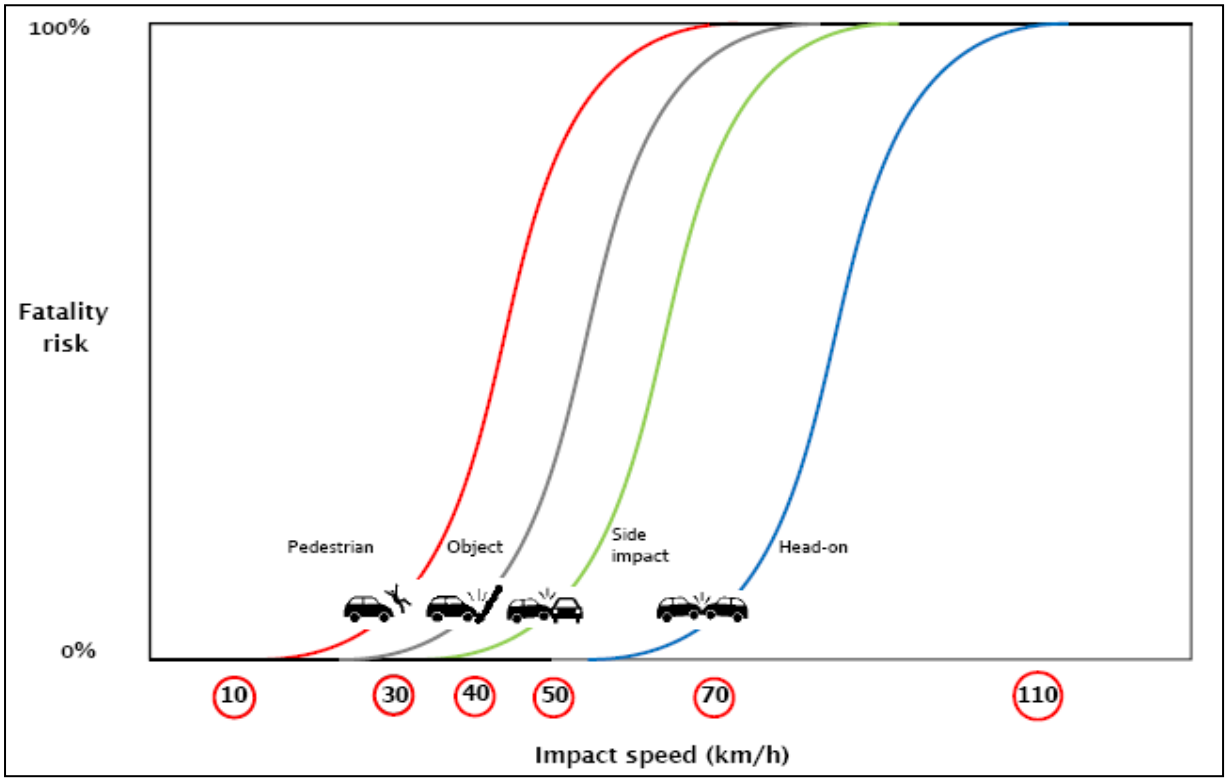
- *Cycling or walking across or along the road*. A vulnerable road user's risk of death increases steeply in mixed speed traffic when traffic speeds are greater than 35 km/h and at 60 km/h most are unlikely to survive.
- *Head-on crashes* typically kill and seriously injure occupants even in the best designed vehicles at crash speeds greater than 70 km/h.
- *Side impacts* at junctions typically kill and seriously injure occupants even in the best designed vehicles at speeds greater than 50 km/h.
- *Run-off-road crashes* into rigid fixed objects produce a high number of fatal and serious outcomes at speeds greater than 70 km/h for frontal impacts and 50 km/h for side impacts even in the best designed vehicles.

[32] Buylaert W ed. (1999) Reducing injuries from post-impact care. European Transport Safety Council, Brussels.

[33] Sánchez-Mangas R, García-Ferrer A, De Juan A, Arroyo A M (2010). The probability of death in road traffic accidents. How important is a quick medical response? Accident Analysis and Prevention 42 (2010) 1048).

[34] Nilsson G. (2004) Traffic safety dimensions and the power model to describe the effect of speed on safety. Bulletin 221, Lund Institute of Technology, Lund.

[35] Tingvall C and N Haworth (1999). Vision Zero - An ethical approach to safety and mobility, Paper presented to the 6th ITE International Conference Road Safety & Traffic Enforcement: Beyond 2000, Melbourne.



These findings have high relevance for future road safety work in Georgia. Current levels of mean speed and excess speed will be measured in selected corridors and areas and improvements will be targeted.

7.5 Levels of drinking and driving

Drinking and driving is becoming increasingly unacceptable in many countries including Georgia and yet international research shows that, typically, about 25% of all road deaths remain alcohol-related. Data from roadside checks indicates a wide range of compliance with excess alcohol laws with between 1% and 5% of drivers being over the legal limit.[36]

Georgia will carry out surveys of drinking and driving to measure current levels of compliance in traffic, numbers of drivers exceeding the legal limit and the number of fatal injuries in crashes involving driving over the legal limit. Better compliance through combined social marketing and police enforcement will be targeted, initially in selected corridors and areas.

7.6 Levels of seat belt use

Research indicates that the risk of loss of life in a crash could be reduced by about 60% by using a seat belt and by more, when belts and air bags are combined.[37] Substantial increases in front seat belt use have been achieved since compulsory legislation was adopted at the

[36] DRUID (2012). Driving Under the Influence of Drugs, Alcohol and Medicine, Integrated Project 1.6. Sustainable Development, Global Change and Ecosystem 1.6.2: Sustainable Surface Transport, 6th Framework Programme, Brussels.

[37] 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 Organisation and World Bank (Washington), Geneva

end of 2010, although the effect on road casualties has not been monitored. There is no legal provision for the use of rear seat belts (with which most cars are now fitted) or provision for the fitment and use of child restraints.

Georgia will carry out surveys of seat belt use to measure current levels in traffic, numbers of drivers and passengers not wearing seat belts and the number of fatal injuries in crashes involving unbelted vehicle occupants. Better compliance through combined social marketing and police enforcement will be targeted, initially in selected corridors and areas. Following a national social marketing campaign, the introduction of compulsory rear seat belt use, where belts are fitted, would prevent significant loss of life and serious injury.

7.7 Levels of crash helmet use

Research shows that the use of crash helmets by powered two-wheeler riders can reduce fatal injury by around 44% and that compulsory use legislation increases use and prevents brain injury.[38] Bicycle helmets can reduce the risk of head and brain injuries by between 63% and 88%. [39]

While volumes are reported to be relatively low for these modes, usage will be measured in selected areas and corridors and legal provisions made for the design of this safety equipment and its use.

7.8 Levels of telephone use while driving

Telephone use while driving (whether hand held or hands free) increases the likelihood of being involved either in a serious injury crash by a factor of three to four times. Research shows that driver reaction times are 50% slower when telephoning while driving than under normal driving conditions. Studies show that in-car telephone conversations while driving can impair drivers more than listening to the radio or talking to passengers. Roadside surveys in Europe and the United States have shown that between 2% to 5% of drivers use telephones while driving, with many drivers reporting occasional use. Use of a mobile phone while driving is widespread amongst young novice drivers and adds to the problems experienced by this group who already have a higher crash risk.[40]

Georgia will carry out surveys of telephone use while driving use to measure current levels in traffic. Better compliance through combined social marketing and police enforcement will be targeted, initially in selected corridors and areas.

[38] Servadei F Begliomini C, Gardini E, Giustini M, Taggi F, Kraus J. (2003). Effects of Italy's motorcycle helmet law on traumatic brain injuries. Injury Prevention 9:257–260.

[39] DaCoTA (2012). Vehicle Safety, Deliverable 4.8u of the EC FP7 project DaCoTA, Brussels.

[40] DaCoTA (2012) Car telephone use while driving, Deliverable 4.8b of the EC FP7 project DaCoTA

7.9 Young, novice driver risks

The first two years of driving present major risks to young novice drivers and the driver licensing and testing regime can play a important role. For example, if novice drivers increased their on-road supervised practice from 50 to 120 hours or more, crash risk could be reduced by 30% in the first year of driving.[41] Graduated access to a full licence subject to various requirements (e.g. accompanied driving, speed, alcohol and passenger number restrictions) can play a key role in managing exposure to risk.[42] Georgia has signed up to the EU Driver Licensing Directive which provides a general framework within which good practice elements can be introduced.

Georgia will carry out a review of measures to reduce young novice driver risks. The problem of young driver risk in the early years of driving and riding will be assessed as well as measures to reduce the risk of death and serious injury in this particularly dangerous period. This will include review of effective driver licensing and testing (age of access to driving and riding and other graduated licensing provisions) to assist with the implementation of new legislation and other key issues such as managing speed and mobile phone use while driving.

7.10 Other factors

Other identified factors which have an impact on serious and fatal outcomes in road traffic crashes and which deserve more attention in Georgia's developing road safety work include aspects of heavy goods vehicle and passenger vehicle operations, driver distraction, fatigue and the use of drugs while driving.

8 Road Safety Strategy Performance Measures

Improvements in each of the problems outlined in Section 7 can be targeted and monitored throughout the duration of this long-term Strategy. These will be developed and cited in subsequent Action Plans and their projects. More may be introduced as new problems develop. Some examples of relevant road safety performance measures/ indicators are outlined in Table 1.

Table 1: Examples of key road safety performance measures

Risk exposure measures
Vehicle/person kilometres of travel
Number of registered vehicles
Number of licensed drivers
Number of inhabitants
Final outcome measures
Number of deaths

[41] VICROADS (2003) Enhancing the Safety of Young Drivers A Resource for Local Communities, Melbourne.

[42] Kinnear, N., Lloyd, L., Helman, S., Husband, P., Scoons, J., Jones, S., Stradling, S., McKenna, F. and Broughton, J. (2013). Novice drivers: evidence review and evaluation – pre-driver education and training, graduated driver licensing, and the New Drivers Act. Published Project Report (PPR673).Transport Research Laboratory, Crowthorne.

Numbers of deaths per 100,000 population
Number of deaths per 100,000 vehicle/person kilometres of travel
Number of serious injuries
Number of serious injuries per 100,000 population
Number of serious injuries per 100,000 vehide/person kilometres of travel
Intermediate outcome indicators
% of motor vehides travelling within the speed limit by road type
Average speeds of motorised vehicles by road type
% of drivers and riders over the limit at roadside checks
% of fatally injured drivers and riders with excess alcohol
% of drivers using telephones
% of seat belt and child restraint use in front and rear seats by motor vehicle occupants
% of rural roads with iRAP 4* rating
% of the vehicle fleet with the highest NCAP rating
% of the vehicle fleet aged less than 10 years
% of passenger cars fitted with seat belt reminders in front and rear seats
% of motor vehides using daytime running lights
% of motorcycles fitted with anti-lock braking systems
% of crash helmet use by motorcyclists and moped users
% of crash helmet use by school-aged pedal cyclists
% of correct fitment of crash helmets by motorcyclists and moped users
Average response time of emergency medical system from crash notification to scene
Institutional output indicators
Hours of police enforcement targeting high risk behaviours
% of roadside alcohol breath tests per 1000 inhabitants
% of numbers of speeding tickets per 1000 inhabitants
% of numbers of seat belt checks per 1000 inhabitants

9 Launching the National Road Safety Strategy

Experience globally indicates that achieving sustainable road safety improvements requires long-term action across a range of sectors and in governance and institutional arrangements infrastructure, vehicle fleets, licensing standards, road safety behaviours and the health system. Good practice guidance on road safety management indicates the importance of a sequenced strategy with *establishment*, *growth* and *consolidation* action phases. Experience shows that this sequencing is crucial if common pitfalls are to be avoided.

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