

Speed management in urban areas - Georgian example

How to improve National Road Safety System

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Uzbekistan

TRANSPORT

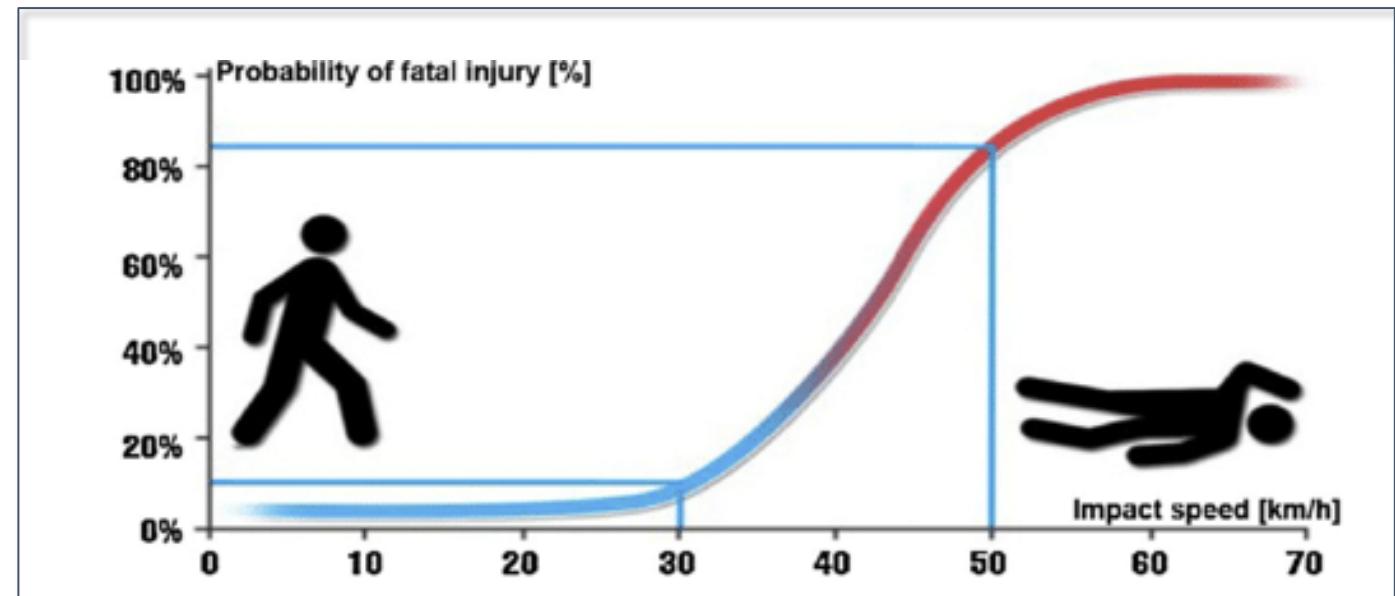


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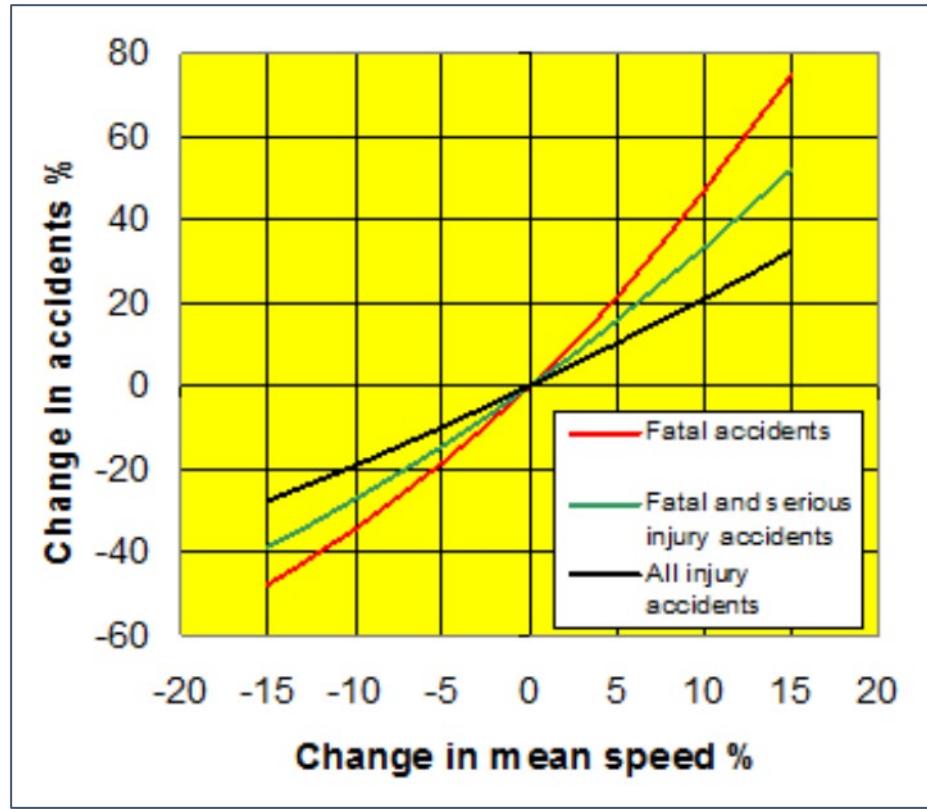
Introduction

- Speed management is a central part of a safe road system as there is a clear relationship between the impact speed and fatality probability.
- Most vulnerable road users such as **pedestrians or cyclists can typically survive impact speeds up to only 30 km/h**, above which the chance of survival decreases dramatically.



Introduction

Relationship between percentage change in speed and the percentage change in crashes (“Power model”)



Benefits of effective speed management

- Reduction in road traffic fatalities, injuries and related socioeconomic costs
- Improvement in other areas of transport and environmental policy such as air pollution, fuel consumption and noise pollution
- Better quality of the infrastructure for walking and cycling, contributing to the creation of liveable communities
- Less noncommunicable diseases as a result of increased exercise and reductions in pollution



Context and magnitude of the problem

- Speeding is one of the major causes of fatal crashes in Georgia as one in three road deaths is due to speeding.
- Number of detected facts of over speeding is high **586,601** and it has increased compared to previous year. (2019)
- Speed limits are widely ignored by drivers and the current enforcement practices have a tolerance of an additional 15 km/h in when measuring speed.



Context and magnitude of the problem (II)

- Lack of supported infrastructure solutions to provide “self-explaining roads” and to help ensure that motorized road users, pedestrians and cyclists to understand speeds.
- Current road safety legislation prescribes a general speed limit in urban areas of 60 km/h which is much too high from a Safe System perspective.
- High speed traffic is allowed near settlements along the road and there are no adequate conditions for pedestrians, cyclists and other vulnerable people groups. Increased risk of death and serious injury.



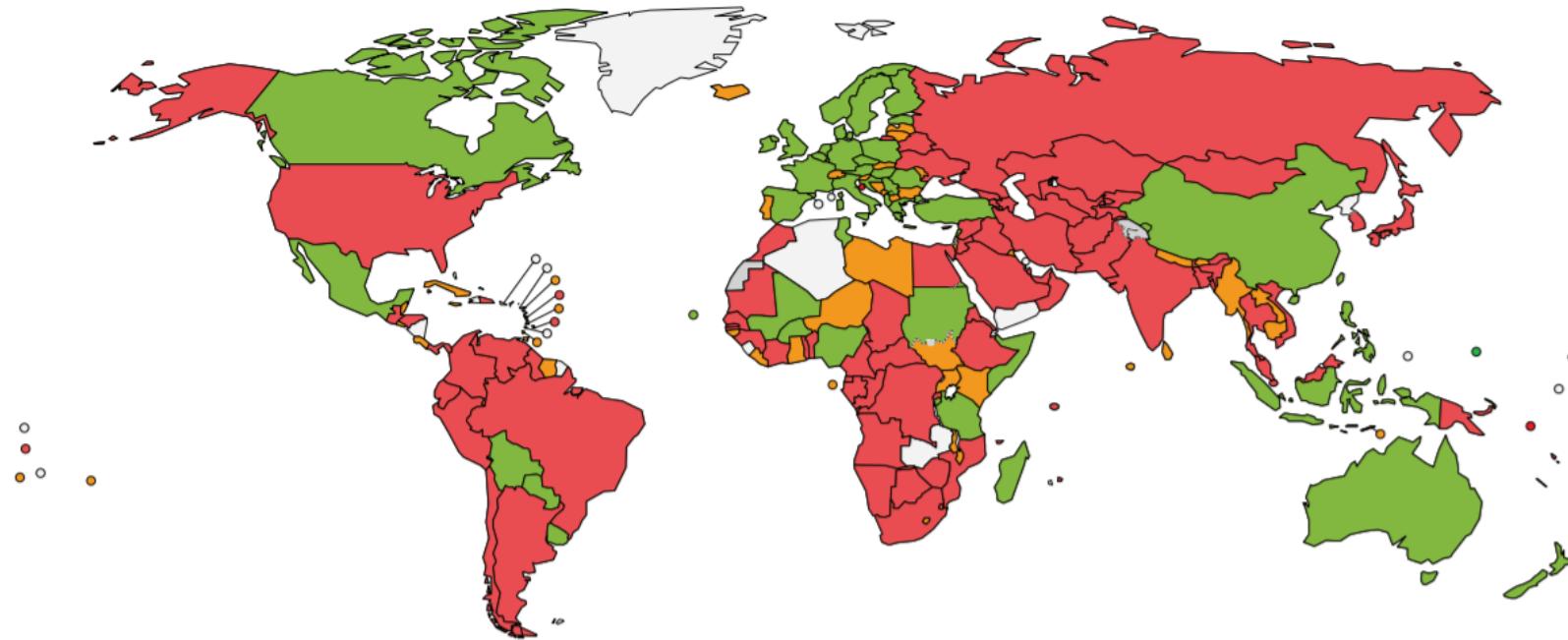
Analysis of legal framework and state-of-the-art in Georgia

- According to Article 33 of the Georgian Law on Traffic drivers shall be prohibited from driving vehicles by exceeding the speed limit determined by this Law. The chosen speed shall give the opportunity to drivers to permanently control their vehicles to ensure traffic safety. Unless otherwise provided by the Law, the speed limit for vehicles in built-up areas shall be 60 km/h, and in residential areas no more than 20 km/h. If the road conditions in built-up areas present the opportunity to drive at a high speed, the speed limit may be increased by installing traffic signs on separate sections of the road.
- According to Article 125 of the Georgian Administrative Offences Code , exceeding the established speed limit by more than 15 km/h but not more than 40 km/h, shall carry a fine in the amount of GEL 50. Exceeding by the driver of a vehicle of the established speed limit by more than 40 km/h, shall carry a fine in the amount of GEL 150.



Analysis of legal framework and state-of-the-art on the European and international level

Legislation on speed limits, by country



Speed limits on urban roads ≤50 km/h and can be modified
Speed limits on urban roads ≤50 km/h but cannot be modified
No speed law or speed limit on urban roads >50 km/h

Data not available
Not applicable

- Presence of a national speed law
- Urban speed limits not exceeding 50 km/h (30 km/h for urban/residential areas and areas with high pedestrian activity)
- Local authorities have the power to modify speed limits (to adapt to different contexts)

Source: WHO Global Status Report on Road Safety 2018



International best-practice on managing speed

Approaches for managing speeds

I. Establishing speed limits appropriate to the road users

II. Building or modifying roads to include features that influence speed

III. Enforcing speed limits

IV. Using in-vehicle technologies

V. Raising awareness about the dangers of speeding

based on: WHO (2017). Managing Speed



International best-practice on managing speed

Safe speeds for a number of road types and their potential conflicts

Type of road	Safe speed
Roads with possible conflicts between cars and unprotected users	30 km/h
Intersections with possible side-on conflicts between cars	50 km/h
Roads with possible frontal conflicts between cars	70 km/h
Roads with no likelihood of frontal or side-on conflicts between road users	≥ 100 km/h

Source: Tingvall and Haworth, 1999.



Opportunities and challenges of implementation



- It is necessary to continue improving the national video surveillance system and installing new equipment in coordination with the other ministries, including roads, education, local government and the Emergency Response Center 112. The reports from many countries have confirmed the effectiveness of automatic speed enforcement.
- In Georgia, section control is a relatively new measure, which seems to be very effective not only in reducing speed but also in contributing to more homogenized traffic flow and increased traffic capacity resulting from reduced variability in vehicle speed.
- In Georgia, Speed limits should be set based on the Safe System principles and taking into account the function and use of the roads. Example, school zones should be 30 km/h zones.



Opportunities and challenges of implementation (II)



- When designing/maintaining the road infrastructure to set the speed limits based on Safe System approach. Such physical limitations are necessary, as unprotected road users survive if hit by a vehicle at up to 30 km/h, a modern car can protect occupants up to 50 km/h in a side collision and a safe car can protect occupants up to 70 km/h in a head-on collisions. In urban areas, where there is a mix of motorised and non-motorised road users sharing the same space, speed limits above 50 km/h are not acceptable. In areas with a high density of vulnerable road users, a limit of 30 km/h is to be preferred.
- Changes in speed limit alone have little effect, unless there are accompanied by other measures such as enforcement, communication, education. In Georgia, efforts must be maintained, because as old practice has showed us, when enforcement is not maintained, the effects of enforcement are usually not maintained either and driving speeds are becoming higher again.



Recommendations

- Currently, the inner-urban speed limit is 60 km/h with a tolerance of 15 km/h. Thus, driving at up to 75 km/h does not lead to a fine. Up to 100 km/h the fine is very low compared to European and international standards. This is bad practice and should be changed soon to protect all vulnerable road users, especially children and the elderly. **General speed limits should be changed to 50 km/h in urban areas and to 30 km/h where a high number of vulnerable road users (pedestrian, cyclists) is present.**
- The **speed tolerance of 15 km/h has to be abolished** and replaced by the measuring tolerance of the speed equipment (usually between 3-5 km/h).

Recommendations (II)

- **Adequate fines** that actually have a deterrence effect on the drivers should be introduced and the demerit points system should be expanded.
- **Automated speed enforcement and coverage also in urban areas should be increased** on high-risk road sections. The speed enforcement locations should be selected based on risk and road safety considerations.
- For all types of road **speed limits should be selected based on the type and mix of all road users** (especially considering the needs of vulnerable road users), the quality of the road infrastructure (e.g., separation of road users, medians, crash barriers), and the crashworthiness and crash avoidance capabilities of vehicle fleet.



Recommendations (III)

- Implement evidence-based **interventions** in the fields of engineering, enforcement, and public campaigns used to support the lower speed limits.
- Make use of **pilot projects for implementing speed interventions** on those locations where the strategic impact of a speed reduction is high (e.g., **school areas**) and monitor/evaluate those projects and adapt if necessary.
- Introduce a **standardized system for collection and analysis of road safety indicators (speed data)** to evaluate the effectiveness of policies and programmes, and for planning purposes.



Estimation of road safety benefits

A total of 162 pedestrians were killed on Georgian roads in the year 2021.

It is assumed that 150 pedestrians were killed on urban roads.

By lowering speeds in urban areas to 30 km/h 120 pedestrians could have been saved in 2021.

By lowering speeds to 50 km/h 75 pedestrians could have been saved in 2021.



Switzerland (2023)

- The BFU found that lowering the speed limit to 30 km/h led to a decline in the number of serious crashes according to data from almost 600 30 km/h zones in Switzerland. The study concluded that the creation of the zones reduced the number of serious crashes by 38% on average. The BFU is calling for a ‘paradigm shift’ in traffic management with speeds limited to 30 km/h « wherever road safety requires it ».



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UK (1996)

- The first widespread evaluation of 20mph zones in the UK was carried out by TRL in 1996. It found that injury accidents were reduced by 60%, and child injury accidents were reduced by 67%.
- In the 20mph zones in Hull, there was a decrease in total accidents of 56% and in fatal and serious injuries of 90%. The biggest reductions were pedestrian casualties, which fell by 54%, child casualties which dropped by 54% and child pedestrian casualties fell by 74%.



AUSTRIA GRAZ (1992)

- This applied to every street classified as a secondary road, which in practice means that this rule applies to 80 percent of streets, combined over 800 kilometers of roads.
- Already in the first two years of the policy, the number of traffic accidents decreased by 25 percent.
- In the following years number of accidents in Graz rose, but in the 30 km/h zones the number of accidents remained constant or even decreased a little.



FINLAND HELSINKI (2004)

- In Helsinki, the first wave of introducing large-scale 30 km/h restrictions took place in 2004, then the system was extended in 2019. First, it was used in the city centre and some residential areas, then speed restrictions were modified in effectively all the streets.
- After the 2004 change, in the streets with lower speed limits traffic accidents resulting in personal injury decreased by 9 percent. In places where the speed limit was changed from 40 km/h to 30 km/h pedestrian injuries decreased by 19 percent and vehicle damages by 34 percent. The biggest improvement was observed in the city centre, where the number of traffic-related injuries decreased by 42 percent.

**Thank you
We look forward to your
questions and a fruitful
discussion**

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