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Position Paper on Road Safety (2021)

Main Road Safety Challenges for European Road Directors the next 5-10 years – Towards the Vision Zero

The road infrastructure plays an important role in reaching zero fatalities and serious injuries in road traffic. Ambitious short term goals are set on Global, European and National levels in order to reach Vision Zero. These goals may be different for each jurisdiction but they often reflect the ambition of the pathways to reduce, or end, deaths and serious injuries caused by road travel - and as such they will not be reached without big efforts.

In general, a safe road system is achieved when the three components *Vehicle*, *Road* and *Road user* interplay in a safe manner. The national road administrations (NRAs) are of course the key actors when it comes to building and maintaining safe roads, but since the end result is a result of the three components, we have to be part of the collaboration to achieve the other two components. It must be easy to travel safely on our roads.

One benefit with improved safety in the infrastructure is that it will have a long lasting effect. What we build or improve on a road section will last for many years. On the other hand, the road infrastructure is huge and is changing rather slowly. Thus, it is important to prioritise our efforts. CEDR want to highlight four areas of particular interest where we see important challenges and opportunities.

Road safety as a vital part of sustainability

In the Stockholm Declaration 2020[1] it was emphasised that in order to reach good progress in the traffic safety work, it is vital to interlink the traffic safety work with other sustainability actions. Accepting killed or injured persons could never be part of a sustainable system. It is important to make the traffic safety actions visible and measured in a proactive manner. A challenge is to incorporate traffic safety in the sustainability reporting.

[1] https://www.roadsafetysweden.com/about-the-conference/stockholm-declaration/

Speed is a key factor when it comes to crash severity and therefore it is vital not to have speeds above the limits of what the combination of human vulnerability, infrastructure and vehicle protection systems can handle. Speed is also a vital issue when it comes to other sustainability goals like pollution. However, the joint interest in sustainable speeds need to be emphasised. Geofencing and procurement are also tools that need to be used more proactively.

Practical actions that can be taken by NRAs to help address this challenge fall into two categories:

High priority and which can be delivered without significant challenges – these include, for example:

- Finding new ways to use procurement as a safety tool,
- Providing for non-motorised mobility (including e-bikes),
- Creating an action plan for geofencing, and
- Incorporating traffic safety in sustainability reporting.

High priority but which also represent challenges that need to be met – these include, for example:

- Speed management,
- The development of an action plan for public transport in rural areas, and
- Mandatory sustainability reporting systems including road safety.

Road safety on the entire road network

Traditionally, we have had our emphasis on the part of our network that carries the most traffic. However, motorways are generally our safest roads taking injury rates as a benchmark. As an effect of this, the rest of our network has got less attention, even if there is a relevant potential to improve safety on this part of our network.

It is a real challenge to identify on a huge network those locations with the highest potential and after that the appropriate traffic safety countermeasures. It is also a challenge to find countermeasures that are a step towards a safe system and that do not hinder safe system solutions. Maintenance activities cover the entire road network and it is a challenge to make this contribute to the safe system.

As part of the challenge in improving safety across the entire road network, and in line with Vision Zero ambitions to manage the highest levels of risk wherever they may be, it will be important to national network providers to share data, research and intelligence with their partners in local authorities. This will help to ensure that there are, wherever possible and appropriate, common approaches to road design and management across all networks to provide a consistent and logical experience for road users.

In common with a safe system approach it will also be necessary, again wherever appropriate and possible, to segregate the highest risk modes from those which are most vulnerable. The approach to this may be different across CEDR members countries, and may differ within individual jurisdictions where the network is a mix of

rural and urban, but the principle of separating those most *at risk* from modes that *create risk* represents an important challenge for CEDR members.

The ambition to improve safety across all types of networks will require further investment in speed and traffic management, using advances in digitisation and camera technology to deliver effective controls on traffic flow and speed choice.

Practical actions that can be taken by road administrations to help address this challenge fall into two categories:

High priority and which can be delivered without significant challenges – these include, for example:

- Digitised traffic data for speed management,
- Improvement to existing safety barriers or removal of hazards to reduce need for the safety barrier,
- Development of a road improvement guidance in line with a Vision Zero approach, and
- Prioritisation of investments in areas of highest risk.

High priority but which also represent challenges that need to be overcome – these include, for example:

- Segregating modes to ensure those most vulnerable are separated from modes that create most risk,
- Implementation of RISM[2] procedures for all roads,
- Speed management in line with the function of the road,
- Delivery of safe speeds through design on two-lane roads,
- Funding safety measures on secondary routes, and
- Centre-line barriers on all two-lane roads above 70km/h.

Vision Zero is an absolute goal – which means we don't have the luxury of saying most people are protected, most roads are improved, the majority of miles travelled are safe etc. Nor can we say that high performance on one part of the network can compensate for poor performance on another part. Every part of the network must contribute to the Vision Zero goal.

Road safety for everyone

The safety for car drivers has been rather good over the last decades. Improvements for vulnerable road users such as pedestrians, bicyclists and powered two-wheelers has been less good. The developments to improve traffic safety for vulnerable road users should be encouraged. We have seen a rapid development of new types of vehicles, especially in the area of micro mobility, and the safety of these types of vehicle needs to be managed.

[2] Road Infrastructure Safety Management Directive

Most of our protection systems such as safety barriers, do not really take heavy vehicles in to account. The powered two wheelers have yet other demands on safety barriers. These different demands are not easy to solve but need to be addressed. To manage the mix of road users on our network is a big challenge. To reach zero fatalities all road users must be taken care of. Not only road users but also road workers have to be safe on our roads. A classical dilemma is the issue of on the one hand separating road users and on the other hand integrating and creating good circumstances for healthy interaction.

Practical actions that can be taken by road administrations to help address this challenge fall into two categories:

High priority and which can be delivered without significant challenges – these include, for example:

- Safe infrastructure for vulnerable road users,
- Motorcycle safety fences in special places, and
- Segregated bicycle lanes on high speed roads or on rural roads.

High priority but which also represent challenges that need to be overcome – these include, for example:

- Speed management, and
- Improved understanding and consideration of human capabilities especially related to elderly people and kids.

Road safety improvements by new technology (digitalisation)

The tremendous developments in new technologies offer great opportunities when it comes to traffic safety. Vehicles that reduce the human errors and mistakes offer huge opportunities to reduce fatalities and serious injuries. It is therefore important that the road authorities play a positive and active role in this development. Just waiting for the vehicle industry to solve the problem will not be wise.

The new technologies will be extremely dependant on good data. The road administrations can play a vital role in providing data about the infrastructure, managing dynamic traffic data and in general be the infrastructure for data. The road infrastructure needs to interact with the increasingly digitalised vehicles. This interaction has to be two-way. The infrastructure should support the vehicle and the vehicles need to be acting in line with the infrastructure. The NRAs have to play a more active role in assuring that the new technologies will contribute to reaching zero fatalities and serious injuries.

Together this means that we need to understand how we as NRAs can contribute to a pro-active Vision Zero and not wait for fatalities to happen. Most often we need to do this in cooperation with other system designers but in some areas, we have the ability to do it ourselves. Given the long implementation process for infrastructure countermeasures, we have no time to spare and actions are needed now.

The transition period - between now and when autonomous vehicles are in the majority – is an important time for road authorities. Action plans will be needed to help

manage this period, and these plans will need to include the provision of greater levels of data and information to vehicles and drivers. Data will, for example, enable the vehicle to interact more safely with its environment, including at road works. Information will allow drivers to make better, more informed decisions about their safety.

Enforcement technologies have a part to play in delivering safer roads, but they do present challenges (in data protection for example) which need to be met. Road administrations should engage with enforcement agencies to ensure that any technology used to enforce compliance is effective, sustainable and lawful.

Practical actions that can be taken by road administrations to help address this challenge fall into two categories:

High priority and which can be delivered without significant challenges – these include, for example:

- Providing weather data, road works and other safety data to drivers and vehicles,
- Providing vehicle flow data to drivers,
- Stimulating research and development which helps us understand the effects of new technologies on road user safety, and
- Developing our understanding of the possible negative consequences of new technologies.

High priority but which also represent challenges that need to be overcome – these include, for example:

- Improving and extending enforcement,
- Actively engaging with connected and automated vehicles,
- Providing databases of road information (digital twins), and
- Developing an action plan for geofencing.

Summary

Delivering Vision Zero will not be easy and it will require considerable resources to be achieved. The relatively short time period over which this needs to achieved also means that road authorities will need to focus on the measures that matter most and which are most likely to deliver fewer casualties. This paper will help to provide that focus, whilst accepting that decisions about priorities will be greatly influenced by the particular challenges faced by each NRA in their own jurisdiction.