European Transport Safety Council

Position on the Revision of the Road Infrastructure Safety Management Directive 2008/96 and Tunnel Safety Directive 2004/54

June 2018

European Transport Safety Council

Table of Contents

1 Introduction

The EU is currently finding it hard to progress towards meeting its target of reducing road deaths by 50% by 2020, compared to 2010 levels. Since 2014, progress has virtually ground to a halt. 2017 was the fourth consecutive poor year for road safety: 25,300 people lost their lives on EU roads - deaths on EU roads fell by just 2% last year, following a similar decrease in 2016 and a 1% increase in 2015. The failure to reduce deaths at the pace required means that annual reductions of 14.5% each year are now needed between 2018 and 2020 for the EU to stay on track. Significant and urgent efforts are needed to achieve the EU 2020 target. In addition, in 2014, more than 135,000 people were recorded as seriously injured according to European Commission estimates.[1] Both deaths and serious injuries also carry a huge cost to society. A recent study estimated the value to society of preventing all reported collisions in the EU to be about 270 billion Euro in 2015[2], which is nearly twice as large as the annual EU budget.[3]

The new proposal to revise the EU infrastructure safety rules was finally published in May 2018[4]. This will now probably contribute to reaching the new targets for 2030 rather than the existing target for 2020. The targets for 2030 are set out in the newly adopted EU Strategic Action Plan on Road Safety[5].

Measures adopted during the last decade 2000-2010 including the original RISM and Tunnel Safety Directives have helped to reduce deaths in the early part of this decade. A study commissioned by the European Commission has found that the impact has been positive for road safety in a number of key areas. [6] However, swift adoption of the proposal to revise of this legislation is now sorely needed to augment its road safety

[1] European Commission Press release (March 2016), http://goo.gl/w0lQkv

[2] About 40 per cent of 270 billion Euro represents a saving of GDP wasted in collisions and their consequences, and the other 60 per cent represents a monetary valuation of the saving in human costs to close associates of those who are killed, and to the injured and their close associates.
In Wijnen, W.,et al.. (2017), Crash cost estimates for European countries, Deliverable 3.2 of the H2020 project SafetyCube https://goo.gl/Ff6jYo. The same study suggests that if the value of prevention of unreported collisions were included, the costs to society would be more like 500 billion Euro

[3] European Union, Budget, 2015 figures, https://europa.eu/european-union/topics/budget_en

[4] European Commission (2018) Proposal for a Directive amending Directive 2008/96/EC on road infrastructure safety management https://goo.gl/EkRnsh

[5] European Commission (2018) Communication Sustainable Mobility for Europe: Safe, Connected and Clean Annex 1 EU Strategic Action Plan on Road Safety https://bit.ly/2Kzlq2E

[6] TML (2014), Study of the effectiveness and on the improvement of the EU legislative framework on road infrastructure safety management (Directive 2008/96/EC), Ex-Post Evaluation https://goo.gl/nhPjDs

impact further.

According to the European Commission[7], the proposed measures would save over 3,200 lives and avoid more than 20,700 serious injuries over the decade 2020-2030. For 2030 alone, road infrastructure measures would result in about 560 lives saved and about 3,700 serious injuries avoided. A benefit-cost ration of 2.7 was found[8] with the potential for even greater benefits. While these are encouraging figures, ETSC argues that by extending the application of the Directive to main urban and rural roads, the live saving potential of the Directive would be even greater.

[7] European Commission (2018) Proposal for a Directive amending Directive 2008/96/EC on road infrastructure safety management https://goo.gl/EkRnsh

[8] European Commission (2018) Impact Assessment of Proposal for a Directive amending Directive 2008/96/EC on road infrastructure safety management https://bit.ly/2IjImZd

2 The Importance of Safe Infrastructure

Besides the vehicle and the road user, infrastructure is the third pillar of any comprehensive road safety strategy. Improving infrastructure is a cornerstone in road safety and will help the EU reach its new targets for 2030 and implement a Safe System approach. On Trans-European Transport Network (TEN-T) roads, motorways, rural roads and urban road networks, EU Member States should be working towards similarly high levels of concern for infrastructure safety.

Many current road designs result from decades of construction and maintenance in times when safety issues were not considered to the same extent as they are now. Moreover, traffic conditions and volumes may have changed since the road was designed and built with, for example, more vulnerable road users using the route. All road projects should therefore be submitted to a road safety audit to assess the current and future performance of the road, including from the perspective of vulnerable road users. Regular road safety inspections on the existing network, including from the perspective of vulnerable road users, are also crucial to identify and remove or treat dangerous road features as these become evident over time, as well as to adapt the network to changes in road functions since each part of the network opened to traffic.

Successful implementation of road safety infrastructure management requires an adequate level of investment, supporting regulation, availability of relevant road safety data and adequate institutional management capacity as well as knowledge and well-trained auditors. [9] The infrastructure system should provide a safe setting for use for every road user in every EU Member State.[10] However, knowledge about safe road design and effective risk management may well not be fully applied on all road types, even in the best performing countries.[11]

[9] OECD-ITF (2015), Road Infrastructure Safety Management, https://goo.gl/OkHXAd
[10] ERF (2012) White Roads https://goo.gl/e7Xa3v
[11] ETSC (2011), PIN Road Safety Report 5, Reducing deaths on rural roads – a priority for the UN Decade of Action, https://goo.gl/QSUxsN

3 Priorities for Revision

3.1 Extension of scope of the RISM Directive to other road types

ETSC supports the European Commission's proposal to extend the mandatory application of the Directive's procedures to motorways and "primary roads".[12] The findings of the 2014 TML study[13] state that the Directive would have the highest potential if extended to the non-TEN-T network where the majority of severe and fatal collisions occur.[14] According to the European Commission only 8% of deaths occur on motorways, 37% in urban areas and 55% on rural non-motorways.[15]

The RISM Directive provides a framework to ensure that safety is adequately addressed during the road lifecycle by way of Road Safety Impact Assessments, Road Safety Audits, the Management of Road Network Safety and Road Safety Inspections.[16] The procedures are defined in the Directive under Article 2 and in Annexes I, II, III and V.[17] At present, with the exception of Road Safety Audits for which a detailed common setting was defined, the details of their implementation are currently left to Member States and there is a large disparity with respect to the use of the different procedures.

Article 1.(2) is modified to reflect the increased scope of the Directive adding motorways and primary roads outside TEN-T network in order to extend the mandatory application of the Directive's procedures to specifically target the busy roads connecting major cities and regions[18]. Many roads that are not part of the TEN-T network are important for the overall functioning of road transport within the EU and carry significant volumes of national and international traffic. Due to high traffic volumes, the primary EU road network represents a high percentage of fatalities compared to the share of these

[12] European Commission (2018) Proposal for a Directive amending Directive 2008/96/EC on road infrastructure safety management https://goo.gl/EkRnsh
[13] TML (2014), Study of the effectiveness and on the improvement of the EU legislative framework on road infrastructure safety management (Directive 2008/96/EC), Ex-Post Evaluation https://goo.gl/nhPjDs
[14] TML (2014), Study of the effectiveness and on the improvement of the EU legislative framework on road infrastructure safety management (Directive 2008/96/EC), Ex-Post Evaluation https://goo.gl/nhPjDs
[15] European Commission https://goo.gl/TtzP54
[16] European Commission (2008) Directive 2008/96/EC on road infrastructure safety management https://bit.ly/2K2D7ej
[17] European Commission, ANNEX to the Proposal for a Directive amending Directive 2008/96/EC on road infrastructure safety management https://goo.gl/EkRnsh
[18] European Commission (2018) Proposal for a Directive amending Directive 2008/96/EC on road infrastructure safety management https://goo.gl/EkRnsh

roads in the total road network (15% of the road network outside urban areas in terms of road kilometers accounts for some 39% of all road fatalities in the EU).[19]

Article 2a and 2b are inserted to provide the definitions of "motorway" and "primary road.[20] "Primary road means a road that is not a motorway but connects major cities or regions, or both, and is defined as a primary road in the EuroRegionalMap produced by the National Mapping and Cadastral Agencies of Europe".[21]

ETSC supports this proposed extension to primary roads and would go further recommending their extension also to "main urban and rural". "Main urban and rural" roads should be defined by their function of carrying substantial amounts of traffic and not permitting access to the neighbourhood of the road. Seasonal variations during for example holiday periods should also be taken into account when evaluating the volume of traffic. Based on this definition the "main urban and rural" could be elaborated by each EU Member State. The EU Member States should also be encouraged by the European Commission through means of guidance to apply the procedures to all roads.

[19]European Commission (2018) Proposal for a Directive amending Directive 2008/96/EC on road infrastructure safety management https://goo.gl/EkRnsh

[20] ibid

[21] ibid

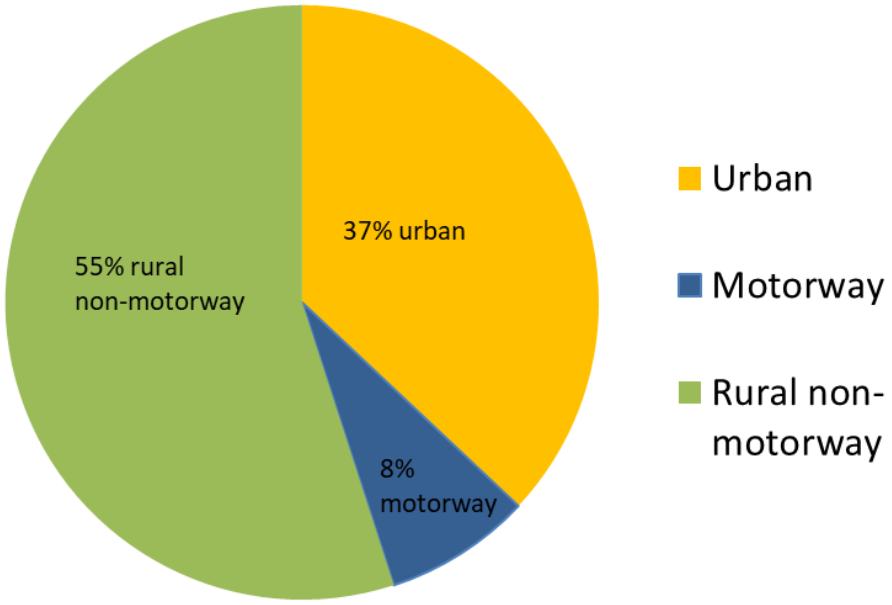

Figure 1 Numbers of road deaths on different road types[22].

Transport Ministers also have endorsed the possible extension of the principles of infrastructure safety management beyond the TEN-T.[23] Almost half of EU countries require the application of the rules on some other parts of their national road networks.[24] Moreover, the ex-post evaluation has shown that those Member States that have been applying RISM procedures to their national roads for some time achieve a much better road safety performance than Member States that do not do so.[25] Moreover this extension has been positively reviewed during the EU funded Pilot4Safety Project.[26]

Extension has become even more of a priority given the new objective to reduce both serious injuries and road deaths. Serious road traffic injuries occur on all kinds of roads, but in comparison with deaths a larger proportion of them occur in urban areas and

[22] ibid
[23] Valletta Declaration on Improving Road Safety. (2017) https://goo.gl/JsX7gS
[24] Austria, Cyprus, France, Finland, Germany, Hungary, Ireland, Italy (from 2016), Latvia, Lithuania, The Netherlands, Romania, Slovenia and the UK implement the Directive also on other roads, mainly motorways and some main rural roads ("national roads") in ETSC (2015) Ranking EU Progress on Improving Motorway Safety (PIN Flash 28). https://goo.gl/ioJmFJ
[25] Ex-Post Evaluation Study on the effectiveness and on the improvement of the EU legislative framework on road infrastructure safety management https://bit.ly/2GuTqe7
[26] Pilot4Safety Project https://goo.gl/sBg7cp

involve vulnerable road users.[27] An increasing share of the EU's population lives and works in cities and it is widely expected that these patterns will continue as urban areas account for a greater share of activity.[28] EU citizens travel beyond the high speed TEN-T and should be entitled to equal levels of concern for their safety on all roads that they travel on, in whichever country they live. If the requirements of RISM Directive were extended beyond the TEN-T network, the use of the four instruments could enable road designers and planners to identify the need to design road infrastructure that is safer for cyclists and pedestrians.

ETSC assessment of the EC Proposal

√ Extending the scope of the Directive beyond the trans-European transport network (TEN-T) to cover motorways and primary roads outside the network. ETSC supports this measure as it is an improvement on current status but ETSC's recommendation of extending to "main" rural and urban would have an even larger road safety benefit.

ETSC recommendation

- Extend and revise the application of the instruments of the RISM Directive to cover all motorways, all EU (co-) financed road improvement schemes including urban renewal schemes, primary roads and all main rural and main urban roads not covered by the primary road network definition.

[27] European Commission (2013) Staff Working Document On the implementation of objective 6 of the European Commission's policy orientations on road safety 2011-2020 – First milestone towards an injury strategy. https://goo.gl/dtWB3a

[28] Eurostat, Statistics on European Cities, https://goo.gl/IZ7XDd

3.2 EU funds for road infrastructure

Infrastructure safety needs budgets and programmes proportionate to the value of preventing road collision costs.[29] With the input from evaluation and ranking Member States should develop 'Safer Road Investment Plans' to guide and plan investment. Cost benefit analysis of road safety audits and inspections was carried out and found to have a positive benefit-cost ratio.[30]

To support implementation of the new Directive EU funds should support EU Member States. Moreover, specific guidelines as suggested by ETSC under section 3.6 should also help to support building capacity in EU Member States where the application of these procedures are new. For example, under the new proposal of the 'Common Provisions" Regulation for ESF, ERDF and the Cohesion fund there is a new possibility for financial support to: "assess road safety risk in line with existing national road safety strategies, together with a mapping of the affected roads and sections and proving with a prioritisation of the corresponding investments".[31]

The TEN-T guidelines need to be further strengthened to prioritise upgrading road infrastructure to meet safety requirements. Safe and secure mobility is included in the new Connecting Europe Facility Regulation objectives under Article 3 and "actions implementing safe and secure infrastructure and mobility including road safety" are included under the eligible actions under Article 9".[32]

Targeting travel on existing road networks which have or can be given high safety standards will help reach our safety targets. So, for example, Sweden is investing to achieve 75% of travel on three-star roads or better by 2020 and near 100% by 2025, based on the EuroRAP standard.

The new proposal includes under Art 1(3) "the mandatory application of the Directive to any road infrastructure project outside urban areas that is completed using EU funding to

[29] Ministerial Conference on Road Safety 29.03.2017. Valletta, Malta, Rapporteurs' Reports from the Stakeholders' Conference. 28 March 2017 https://goo.gl/Hb9Ux6
[30] Elvik et. Al (2004) Handbook of Road Safety Measures
[31] European Commission (2018), ANNEXES to the Proposal for a REGULATION laying down common provisions on the European Regional Development Fund, the European Social Fund Plus, the Cohesion Fund[…].,https://goo.gl/bi22JA
[32] European Commission (2018), Proposal for a REGULATION […] establishing the Connecting Europe Facility and repealing Regulations (EU) No 1316/2013 and (EU) No 283/2014 https://goo.gl/X57oXW

ensure that EU funds are not used to build potentially unsafe roads".[33] ETSC supports this extension but would also include urban areas.

As stated, any EU funds being used for road and street infrastructure should comply with the EU's infrastructure safety legislation even beyond the TEN-T network. In order to receive loans for roads that do not fall under the TEN-T, the European Investment Bank already requires that safety audits or inspections must be performed in accordance with the principles of the RISM Directive.[34] Similarly strong prioritisation and 'conditionality' to comply with EU infrastructure safety legislation which exists now in the TEN-T Guidelines should be extended to all EU funds, including the European Regional Development Funds. Regional development funds should consider infrastructure safety, capacity development for road safety stakeholders and demonstration projects. These should be inserted both in *ex ante* and *ex post* evaluation of projects to benefit from these funds.

Any funds destined to support urban mobility should also comply with safety standards and should therefore be identified specifically as promoting safety including, for example, investments in public transport, cycle lanes and pedestrian infrastructure. Any funds for professional development, small-scale demonstration projects, research and twinning should also consider road safety.

ETSC assessment of the EC Proposal

√ The introduction of the mandatory application of the Directive to any road infrastructure project outside urban areas that is completed using EU funding to ensure that EU funds are not used to build potentially unsafe roads.

ETSC recommendation

- Support the proposal of the mandatory application of the Directive to all EU funds including the European regional development funds and to all road types including urban.

[33] European Commission (2018) Proposal for a Directive amending Directive 2008/96/EC on road infrastructure safety management https://goo.gl/EkRnsh
[34] EIB Lending Strategies. https://goo.gl/TPdk6P

3.3 Safety ranking

The safety of road infrastructure across the EU should be measured using a comparable approach agreed at EU level. A new Article 2c is inserted to provide a new definition of "network-wide road assessment".[35] Article 5 is revised to replace the current, reactive procedure.[36] While ETSC welcomes the renewed focus on the proactive approach to the network assessment, the merits of sound reactive approaches to infrastructure road safety interventions should not be disregarded. Methods for detecting dangerous locations based on higher expected accident frequency and on higher expected crash risk have favorable cost-benefit ratios, and may not be fully substituted by proactive approaches. An explicit reference to the 'reactive' approach is needed in the text of the Directive.

The EC's new proposal modifies Article 1. (1) by omitting the management of road network safety and adding after Road Safety Inspections the new procedure of Network Wide Road Assessment.

Under the proposed Article 5.1 "Member States shall ensure that a network-wide road assessment is carried out on the entire road network in operation covered by this Directive. Network-wide road assessments shall comprise a visual inspection, an analysis of traffic volumes and historic accident data and an assessment of crash and impact severity risk. Member States shall ensure that the first assessment is carried out by 2025 at the latest. Subsequent network-wide road assessments shall be sufficiently frequent in order to ensure adequate safety levels, but in any case shall be carried out at least every five years.[37]"

Moreover, under the proposed Article 5.3 on the basis of the assessments Member States shall classify all sections of the road network in no fewer than three categories according to their in-built safety.[38] The assessments should be undertaken by the "competent entity".[39] ETSC would support this proposal.

This new approach fits into the longstanding work on benchmarking for example under

[35] European Commission (2018) Proposal for a Directive amending Directive 2008/96/EC on road infrastructure safety management https://goo.gl/EkRnsh
[36] ibid
[37] ibid
[38] ibid
[39] ibid

ETSC's PIN Programme [40], and EuroRap.[41] A new ranking stemming from the network wide assessment should help to inform decision makers on further investment and development as part of 'Safer Road Investment Plans' but also to provide information to road users which could be part of their route choice. It could also be used to consider future road charging and insurance schemes. Any EU wide comparison should take into account the differences in the road network in the different EU Member States.

ETSC assessment of the EC proposal

√ The new proposal introduces a network-wide road assessment, a systematic and proactive risk mapping procedure to assess the 'in-built', or inherent, safety of roads across the EU.

ETSC recommendations

- Extend and strengthen existing Network Safety Management assessments of the road network and review findings regularly for action.
- Member States to set targets for improvement after the Network Wide Assessment and for this to be regularly reviewed (also linked to the EU level Key Performance Indicator process set out in the EU Strategic Action Programme[42]) and in line with the Safe System approach.
- Set a target of upgrading all main roads to three-star or better and all roads with traffic volume that are high relative to their capacity to four-star or better.[43]
- The new proposal foresees that road safety inspections are prioritized according to the results of the network-wide road assessments. Alongside this, other elements could be included, as defined by the Member States.

[40] http://etsc.eu/projects/pin/
[41] European Road Assessment Programme EuroRAP https://goo.gl/8jfJmH
[42] European Commission (2018) Communication Sustainable Mobility for Europe: Safe, Connected and Clean Annex 1 EU Strategic Action Plan on Road Safety https://bit.ly/2Kzlq2E
[43] ETSC (2017) PIN Flash Ranking Reducing Deaths in Single Vehicle Collisions. https://goo.gl/EharUa

3.4 Reinforcement of measures to improve safety of vulnerable road users

The RISM Directive's requirements should be reinforced to meet the needs of vulnerable road users (VRUs) in general. The new proposal suggests that VRUs' needs are taken into account in the implementation of the procedures included in the Directive.[44] However, the definition of VRU should be clarified, separating non-motorized unprotected users (pedestrians and cyclists) from motorized unprotected users (PTW). Also, it is important to acknowledge that pedestrians and cyclists are not allowed on some TEN-T and primary roads, whilst PTWs are normal motorway road users. The potential to improve VRU safety will increase with the extension of the scope of the Directive to other road types where they are more present as suggested in 3.1.[45] Pedestrians killed represented 21% of all road deaths in 2014, the figure for cyclists stood at 8%.[46] Powered two wheelers (PTWs) represent 17% of the total number of road deaths while accounting for only 2% of the total kilometres driven.[47] Deaths among this category of unprotected road users have been decreasing at a lower rate than vehicle occupants.[48]

[44] European Commission (2018) Proposal for a Directive amending Directive 2008/96/EC on road infrastructure safety management https://goo.gl/EkRnsh
[45] ibid
[46] ETSC (2011) 5th Road Safety PIN report, Chapter 2, Unprotected road users left behind in efforts to reduce road deaths. https://goo.gl/D7PM3F
[47] ibid
[48] ibid

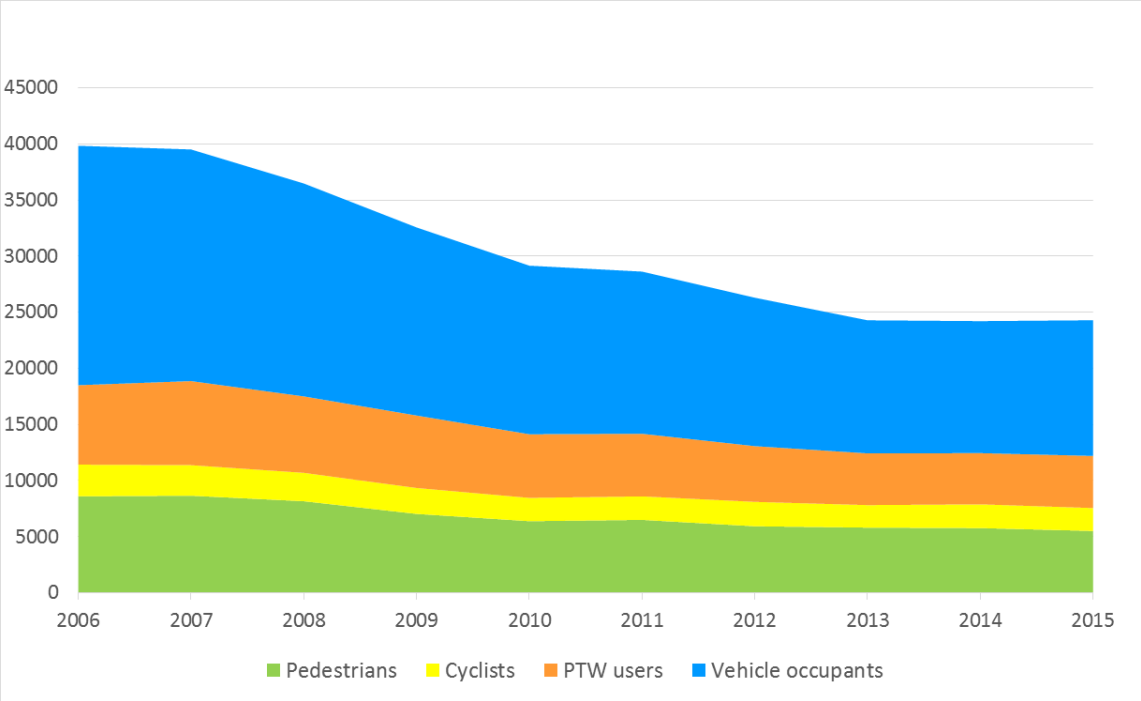

Figure 2 Reduction of road deaths between 2006 and 2015 for pedestrians, cyclists, PTW users and vehicle occupants (based on European Commission data).

The Directive should apply the concepts of "self-explaining and self-enforcing roads" especially for using infrastructure to improve driver compliance with speed limits (see section 3.5) and providing "forgiving roadsides". This will also help occasional users such as tourists, who do not know the road comply with the speed limits and use it safely too. This should raise the understanding of practitioners involved in road safety: road designers, administrators and the legislators. Particular attention should also be paid to road users with limited mobility, the elderly and the young especially as pedestrians and cyclists.

Special Focus on PTWs

The needs of PTWs should also be considered in road design and maintenance. For example, areas susceptible to motorcycle collisions with roadside furniture should be fitted with barriers which are friendly to powered two wheelers where roadside obstacles in these areas cannot be removed.

ETSC assessment of the EC proposal

√ The proposal makes it mandatory to systematically take vulnerable road users into account in all road safety management procedures. Art. 6b is inserted to provide protection for vulnerable road users and requires that each RISM procedure assesses separately the situation of VRUs.

√ Criteria in Annexes have been updated so that the needs of VRUs are taken into account in road safety audits and road safety inspections.

- New criteria are included under Annex III on Network-Wide Road Assessments to review observed volumes of motorcycle, pedestrian, bicycle and heavy vehicles including also from adjacent land use attributes.
- Under Annex III collision data should be collated for deaths and serious injuries by road user group (including VRUs).
- New criteria to be included in "Network Wide Road Assessments" under Annex III on facilities for vulnerable road users are; "pedestrian crossings (surface crossings and grade separation), pedestrian fencing, existence of sidewalk or separated facility, bicycle facilities; quality of pedestrian crossing related to conspicuity and signing of the facility, pedestrian crossing facility, operational characteristics for the speed limit for motorcycles".[49]

ETSC recommendations

- Support the new provisions to take account of the specific needs of all VRUs in the procedures, and to set minimum quality criteria for VRU safety (tailored to the likely levels of use), included in the annexes. If extension to urban roads occurs this will be even more significant.
- Provide safe and comfortable routes for pedestrians and cyclists, including crossings, on (re)constructed roads in urban and rural areas.

[49] European Commission (2018) Proposal for a Directive amending Directive 2008/96/EC on road infrastructure safety management https://goo.gl/EkRnsh

3.5 Upgrading infrastructure to maximise the safety potential of ADAS, C-ITS and automated driving

In-vehicle safety technologies which rely on road markings and traffic signs are increasingly common. Many semi-automated or fully-automated technologies will rely on road infrastructure being readable for their application.[50] The infrastructure performance (visibility, state of repair) regarding traffic signs, signals and road markings required to support higher levels of safe and reliable automated driving has to be recognised. This will involve common standards and harmonisation. In a joint 2013 report[51] "Roads that cars can read" EuroRAP and Euro NCAP deplored the fact that inadequate maintenance and differences in road markings and traffic signs are a major obstacle to the effective use of technology already in vehicles such as lane departure warning and traffic sign recognition. Authorities already have certain obligations under the EU's ITS Directive. Inadequate maintenance can also affect drivers' ability to read road signs and markings.

Under the proposal a new Article 6c is inserted to define a procedure for developing performance requirements for road markings and road signs.[52] The Commission shall develop "general performance requirements to facilitate the recognition of road markings and road signs".[53] For this purpose, the Commission shall adopt an implementing act.

The EC explains that this is a measure designed to ensure a coherent travel experience for road users, to contribute to the roll-out of connected and autonomous mobility systems. The EC points out that an additional benefit is that making road signs and road markings easy to recognize will also help the ageing population. Another point ETSC would support, this would also be of help for the whole of the population.

ETSC supports this proposal but would call for "minimum performance standards" as opposed to "general performance requirements". Minimum standards should lead to EU Member States adopting the standards of the best performers rather than an average which could be the result of "general performance requirements".

A new strategy for co-ordinated deployment of Cooperative Intelligent Transport Systems

[50] For a full overview of our recommendations on Automated Driving see ETSC (2016) Prioritising the Safety Potential of Automated Driving https://goo.gl/jowgsG
[51] EuroRap and EuroNCAP (2013) Roads that cars can read https://goo.gl/pbhkGL
[52] European Commission (2018) Proposal for a Directive amending Directive 2008/96/EC on road infrastructure safety management https://goo.gl/EkRnsh
[53] ibid

(C-ITS) in Europe has been adopted with full-scale deployment of C-ITS services and C-ITS enabled vehicles expected to start in 2019.[54] The strategy still needs to be fully developed. One of the main challenges is how to get C-ITS services working to the benefit of all road users, and not just those driving new vehicles. Infrastructure managers need to include C-ITS in their strategic planning and 'Safer Road Investment Plans' so as to best use budget and investment for the future.

A fail-safe/fault tolerant architecture is required to guarantee as nearly as is practicable that automated vehicles operate in a safe state in any event or under adverse conditions. This is true for both digital and road infrastructure and both will require investments for upgrades and maintenance. ETSC would recommend starting with preparing certified sections of roads which meet minimum performance standards for automated and semi-automated vehicles.

Motorway infrastructure may also have to be adapted to allow for the requirements of automated traffic. For example, there may be the need for arrangements to enable drivers to re-engage in the driving task before leaving the motorway.

ETSC assessment of the EC proposal

√ The proposed revision to the Directive envisages general performance standards (but not minimum performance standards) for road markings and road signs to make it easier to roll out cooperative, connected and automated mobility systems. ETSC supports this provision.

ETSC recommendations

- Develop EU **minimum performance requirements** for infrastructure owners concerning road markings and road signs to achieve optimal performance of Advanced Driver Assistance Systems (ADAS), such as Lane Departure Warning and Traffic Sign Recognition.
- Develop EU **minimum performance requirements** for infrastructure owners to provide for automated and semi-automated vehicles, requirements such as clear

[54] For a full overview of our recommendations on Cooperative Intelligent Transport Systems see ETSC (2017) Briefing on C-ITS https://goo.gl/864ZJn

road markings and adapted intersections.

- Facilitate close collaboration between the road operators and the developers of semi and fully automated vehicles to communicate about the needs from both sides.

3.6 Common EU standards on priority areas and minimum common EU requirements for key road equipment

The RISM Directive requires that a report on fatal collisions should be completed under Article 7 including elements under Annex IV.[55] Countries with lower levels of road infrastructure safety would very much benefit from the adoption of stringent legislation on common minimum infrastructure safety management standards, while these standards would pose few problems for the countries with higher levels of road safety.[56] This requirement would need to be accompanied by commensurate and especially designed technical assistance programmes to support EU Member States in implementing these standards as suggested under the EU Strategic Action Plan Objective 2 on "Financial Support".[57]

3.6.1 Follow-up to a Road Safety Audit and inspection reports

Art 6a is inserted to introduce appropriate follow-up of all road infrastructure safety management procedures in the RISM directive.[58] The lack of follow-up is one of the main weaknesses identified in the evaluation of RISM. As well as requiring follow-up of the newly included procedure of network-wide road assessment, this provision will also require that each decision whether or not to follow up a recommendation from a road safety inspection is justified and properly substantiated.

This proposed revision is supported by ETSC because it will require road operators to show how they will act to respond not only to the findings of network-wide road assessment but also to the proposed measures in the road safety inspection report. This requirement already exists for road safety audits under Articles 4.4 and 4.5 thus: "where unsafe

[55] European Commission (2018) Proposal for a Directive amending Directive 2008/96/EC on road infrastructure safety management https://goo.gl/EkRnsh

[56] ETSC (2006) ETSC Public Consultation on Road Safety Infrastructure Management on TEN-T. https://goo.gl/nT9aQr

[57] European Commission (2018) Communication Sustainable Mobility for Europe: Safe, Connected and Clean Annex 1 EU Strategic Action Plan on Road Safety https://bit.ly/2Kzlq2E

[58] European Commission (2018) Proposal for a Directive amending Directive 2008/96/EC on road infrastructure safety management https://goo.gl/EkRnsh

features are identified in the course of the audit but the design is not rectified before the end of the appropriate stage as referred to in Annex II[59], the reasons shall be stated by the competent entity in an Annex to that report." Furthermore "Member States shall ensure that the report referred to in paragraph 4 shall result in relevant recommendations from a safety point of view". At present there is no such requirement for a formal response from the road operators which means that some findings of inspection reports go unaddressed.

Under Article 6a.3 "Member States shall prepare and regularly update a risk-based prioritised action plan to track the implementation of identified remedial action. In the preparation of the action plan, Member States shall give priority to road sections with high potential for road safety improvements taking into account interventions with high benefit-cost rations"[60].

ETSC assessment of the EC proposal

√ Appropriate follow-up of all the road infrastructure safety management procedures in the RISM Directive is foreseen by Article 6a. This provision will require follow-up of the newly included procedure of network-wide road assessment and that each decision on whether to follow up a recommendation from a road safety inspection is justified and properly substantiated.

√ Member States will need to draw up a risk-based prioritized action plan giving priority to road sections with high potential for road safety improvements taking high benefit-cost ratios into account.

ETSC recommendation

- Support the additional procedure of network-wide road assessment and the obligation to follow-up such assessments
- Support the new obligation under Article 6a for road operators to respond formally to all safety issues mentioned and implement improvement measures after inspections. If no action is taken then an explanation should be given as to

[59] European Commission (2018) Proposal for a Directive amending Directive 2008/96/EC on road infrastructure safety management https://goo.gl/EkRnsh
[60] European Commission (2018) Proposal for a Directive amending Directive 2008/96/EC on road infrastructure safety management https://goo.gl/EkRnsh

why the issue is not considered as deserving intervention.

- Support the proposal to set up a risk based prioritised action plan. Member States should also take possible reductions in serious injuries as well as deaths into account when setting up their action plan. Action Plans should also take interventions based on risk and volume into account.

3.6.2 Forgiving roadsides

Forgiving roads aim to reduce the consequences when a collision happens. A third of road deaths in the EU are caused by collisions that involve a single motorised vehicle where the driver, rider and/or passengers are killed but no other road users are involved.[61] The majority of Single Vehicle Collisions (SVCs) are run-off-road collisions where a vehicle leaves the road, enters the roadside and has at least one interaction with either the roadside equipment or the roadside itself. It is generally accepted that one of the key issues in fatal single vehicle run-off-road collisions is the design of the roadsides, which are often unforgiving.[62] The Conference of European Directors of Roads (CEDR) has published a practical guide on forgiving roadside design based on harmonised collection of best practice treatments.[63]

Guidelines for selecting the most appropriate performance class of support structures in accordance with EN 12767 should be set, building on the experience of northern European countries where this type of roadside support has been in place for several years.

According to current practices of road authorities, when maintaining (replacing damaged) safety barriers the installation of new according to EN 1317 is not possible, due to limited length of replacement. Thus, either guidelines should be issued or incentives should be given for the installation of longer parts, in order to accommodate new safety barriers according to EN 1317.

ETSC recommendations

- Make the EN12767 standard mandatory for acceptance of road equipment support structures at least on all roads up to 100 km/h.
- Set up guidelines with precise technical characteristics for the provision and

[61] ETSC (2017) PIN Flash Ranking Reducing Deaths in Single Vehicle Collisions. https://goo.gl/EharUa
[62] CEDR (2012), Forgiving roadsides design guide, https://goo.gl/gM4hsB
[62] Ibid
[63] CEDR (2012), Forgiving roadsides design guide. https://goo.gl/gM4hsB

maintenance of "forgiving roadsides" building on the experience of all EU countries and promote them amongst auditors and transport planners.

- Provide technical and financial assistance to support EU Member States in implementation of the guidelines.

3.6.3 Self-explaining and self-enforcing roads

Self-explaining and self-enforcing roads are concepts of road design that seek to reduce the number of collisions on the whole road network. Self-explaining roads seek to prevent driving errors and self-enforcing roads aim to prevent motorists from offending against the traffic laws.

Perhaps the ultimate in self-explaining road design is that different classes of roads should be distinctive in design and function, and within each class features such as width of carriageway, road markings, signing, and use of street lighting should be consistent throughout a route. The self-explaining road concept is inherent in design for the highest and safest road class – motorways. Yet on lower class roads, which are the most dangerous by their characteristics, consistency in design is often lacking, and progress towards it will take time and substantial investment because of the extent and variety of the inherited road network.

The layout of self-enforcing roads aims to prevent road users from driving at inappropriate speeds. Self-enforcing roads employ engineering measures such as alignment, markings, road narrowing, rumble-strips, chicanes, and road humps.

ETSC recommendation

- Improve infrastructure safety on the whole network by applying progressively the concepts of "self-explaining and self-enforcing roads" in the procedures of road safety infrastructure management.

3.6.4 Roadworks

A report by ETSC called on the EC to prepare EU guidance on work zone safety and gathered the latest data and policy recommendations.[64] Currently EU Member States need to adopt guidelines under Article 6 of the RISM Directive. From a road safety viewpoint, the risks involved with work zones can include risk of collisions between

[64] ETSC (2011) PRAISE Road Safety at Work Zones. https://goo.gl/MoYCco

general road users (vehicles, pedestrians) and barriers, equipment, vehicles or personnel. From the worker safety viewpoint, the risks involved with work zones can include risk of collisions in or outside the work zone, or when the worker enters or leaves the work zone. The collisions can happen with passing vehicles or works vehicles and machines. The worker can be on foot or using a vehicle. Moreover, EU guidance should also include requirements for deployment of dynamic speed limits and roadworks warnings within the C-ITS framework. Consideration should also be given to prepare for vehicles in automated mode at roadworks.

ETSC recommendations

- Work towards harmonisation of higher standards and guidance nationally and across the EU concerning road work zones.
- Collate various approaches and disseminate good practice.
- Support the revision of police reporting procedures at the national level to facilitate the identification of collisions occurring in or near work zones.

3.6.5 High risk site management

The most cost-effective way of adapting road infrastructure to reduce death and injury in the short run is through management of high risk sites – like road junctions or short sections of road where collisions persistently cluster, or sections of route or neighbourhoods where the local density of collisions is persistently and markedly higher than average. Inspection of any such site and basic information about collisions occurring there often readily reveals infrastructure problems that can be corrected quickly and at affordable cost. Special road safety inspection can be undertaken to reveal high risk sites. In some EU MSs road safety inspection does not involve use of historic collision data. Under Articles 5, 6 and Annex III of the RISM Directive, specific guidelines should be elaborated to further support this based upon existing best practice and state of the art research.

ETSC recommendation

- Draw up technical guidelines concerning the harmonised higher standard management of high risk sites. Systematic road safety assessment and inspection of high risk sections should be undertaken to support corrective interventions.

3.6.6 Guidelines on traffic calming and setting speed limits

Traffic calming involves physical measures to reduce motorised vehicle speeds in residential and urban core zones and in small towns and villages to facilitate sharing road space with cyclists and pedestrians and adapting streets to form 30 km/h zones.[65] ETSC calls for the development of EU guidelines on traffic calming for use in EU Member States, which would benefit road users especially in urban areas, particularly pedestrians and cyclists. The concept of "shared space" could also be researched and investigated at an EU level.

Several Member States have implemented guidelines on setting speed limits. Those guidelines define a road hierarchy and a system approach in determining speeds for each road type – matching legal speed limits and road characteristics with one another as a contribution to making the roads more 'self-explaining' and 'self-enforcing'. Ideally, road segments with similar geometric characteristics should have the same speed limits and those speed limits should be easily recognisable by drivers.

Under the "safer roads and road sides" section of the EU Strategic Action Plan on Road Safety the EC also commits to "establish an expert group to elaborate a framework for road classification that better matches speed limit to road design and layout in line with the Safety System approach in Q3 of 2019".[66]

ETSC assessment

√ While the new proposed RISM Directive does not directly address designing roads to match a preferred speed, the EC will "establish an expert group to elaborate a framework for road classification that better matches speed limit to road design and layout in line with the Safety System approach in Q3 of 2019" as stated in the new EU Strategic Action Plan on Road Safety.[67]

ETSC recommendations

- Set EU guidelines, with for example the input of the new Expert Group, for promoting best practice in traffic calming measures, based upon physical

[65] OECD (2013) Cycling, Health and Safety. https://goo.gl/j5wV45
[66] European Commission (2018) Communication Sustainable Mobility for Europe: Safe, Connected and Clean Annex 1 EU Strategic Action Plan on Road Safety https://bit.ly/2Kzlq2E
[67] ibid

measures such as roundabouts, road narrowing, chicanes, road humps and techniques of space-sharing, to support area-wide urban safety management, for example when 30 km/h zones are introduced.

- Set EU guidelines, with for example the input of the new Expert Group, implementing the concept of 'self-explaining' and 'self-enforcing' roads, matching speed limits and road characteristics and functions with one another.

3.7 Training of auditors and incentives for exchange of best practice

The RISM Directive provides for the appointment of safety auditors, training of safety auditors, and mutual recognition of diplomas. Because of the current scope of the RISM Directive, auditors during their training learn to identify dangers relevant for fast moving, long distance vehicle traffic. The same procedures are often voluntarily applied and road safety auditors consulted on projects implemented on other roads. Where this is the case or is foreseen, pedestrian and cycling infrastructure should be a new part of training curricula for road safety auditors. Another requirement which should be introduced under the revision of the RISM Directive is that teams in charge of Road Safety Inspections shall be led by an independent auditor, and that inspection team members involved in the operation of the relevant infrastructure (if any) shall hold a road safety auditor's certificate of competence.

The exchange of best practice is included under Article 10 of the Infrastructure Safety Directive. Today, this exchange of information mainly takes place via the CEDR working group and the committee on road infrastructure safety management. The TML study made clear that many Member States, in particular those that have less experience with the different procedures, still want more exchange of information. Moreover, it might be useful to foresee a structured way of information exchange for road safety auditors as well. The proposal includes under Article 10 the "establishment of a system for the exchange of best practices between the Member States, covering, inter alia, existing road infrastructure safety projects and proven road safety technology". Under the "safer roads and road sides" section of the EU Strategic Action Plan on Road Safety the EC also commits to "facilitating exchange of experience on Safe System methodologies between practitioner e.g. in a Forum of European road safety auditors, on adoption of the new Directive.

Ripcord-Iserest (2007) state that the exchange of knowledge and experience between

auditors should be encouraged and even be made obligatory.[68] The EU should introduce more incentives including funding to enable it. Disseminating knowledge about successful measures (best practice) and research results among decision makers and practitioners is an essential component of continually improving road safety. Exchanging experience on compiling in-depth reports on collisions which have resulted in death would also be useful, by making use, for example, of the EU-funded DaCoTA[69] project on in-depth road accident investigation methodology, International best practice exchange is also of paramount relevance for a rapid transfer of knowledge. This can be achieved through international project cooperation, international event organisation, presentations and attendance at international events. Dissemination can also be achieved through newsletters, industry / sector magazines and websites.

ETSC assessment

√ Under the "Safer Roads and Road Sides" section of the EU Strategic Action Plan on Road Safety the EC also commits to "facilitating exchange of experience on Safe System methodologies between practitioners e.g. in a Forum of European Road Safety Auditors, on adoption of the new Directive."[70]

ETSC recommendations

- Support the development of common EU curricula for auditors including specific training on the needs of VRUs.
- Require that RSIs are carried out by certified auditors only, and that the inspecting team is led by an independent auditor.
- Develop guidelines for Road Safety Audit and Road Safety Inspection reports.
- Mandate periodic training of road safety auditors.
- Support the EC proposal to allow exchange of international best practice and rapid transfer of knowledge under Article 10 and with the creation of a Forum of European Road Safety Auditors.

[68] Ripcord (2007) Road Infrastructure Safety Protection https://goo.gl/DnYtWW
[69] DaCoTA (2013) https://goo.gl/21oQVh
[70] European Commission (2018) Communication Sustainable Mobility for Europe: Safe, Connected and Clean Annex 1 EU Strategic Action Plan on Road Safety https://bit.ly/2Kzlq2E

4 Linkage with the Tunnel Safety Directive

ETSC strongly supports the upholding of the tunnel safety Directive 2004/54 on minimum safety requirements for tunnels in the trans-European road network. ETSC supports the new proposal inclusion of joint road safety inspections of transition areas between the roads covered by this Directive and road tunnels covered by the tunnel safety Directive 2004/54.[71]

ETSC assessment of the EC proposal

√ The safety of transition areas between the roads covered by this directive and the road tunnels covered by Directive 2004/54/EC will be ensured through joint road safety inspections involving the competent entities involved in the implementation of this directive and tunnel directive (Art. 3b). These joint road safety inspections shall be carried out at least every three years.

ETSC recommendation

- Support the inclusion under Article 3 of joint road safety inspections of transition areas by the competent authorities between the roads covered by the Infrastructure Safety Management Directive 2008/96 and road tunnels covered by the tunnel safety Directive 2004/54.
- Integrate the rules of the Infrastructure Safety Management Directive 2008/96 within the approach to managing road sections covered by the Tunnel Directive 2004/54 while upholding the requirements and retaining the effects of the Tunnel Directive.

[71] European Commission (2018) Proposal for a Directive amending Directive 2008/96/EC on road infrastructure safety management https://goo.gl/EkRnsh

5 More Transparency – Reporting and Information for Citizens

The revised RISM Directive should foresee an obligation for the competent authorities to formally inform the citizens on the existence of high-risk sites by appropriate measures – a now deleted obligation of the original directive, and the outcomes of the other procedures such as a road safety inspection undertaken under Article 6. It should report on the methodologies that are used and on the measures which are taken as a consequence of the outcome of the procedures. Following an inspection report the "competent authority" should deliver a formal response.

Alongside the revision of the Directive and under the Strategic EU Action Plan on Road Safety key performance indicators will be developed which will include those relating to infrastructure safety.[72] The EC stresses that these will also aim to improve transparency and accountability on the application of the Directive and this is noted under Preamble point 14. And under point 15 that publication of the results of network-wide road assessments should allow the level of in-built infrastructure safety to be compared across the Union.

ETSC assessment of the EC proposal

> √ Mandating transparency and follow-up of infrastructure safety management procedures is considered one of the main objectives of the Directive and the European Commission considers that publication of the results of network-wide road assessments should allow the level of in-built infrastructure safety to be compared across the Union.

ETSC recommendation

- Reports on the procedures as well as resulting measures should be made publicly available to affected citizens.
- The European Commission should monitor annual reporting from Member States on an economical and random basis.
- Re-include the obligation: 'for EU MSs to inform road users of the existence of a high accident concentration section by appropriate measures'.

[72] European Commission (2018) Communication Sustainable Mobility for Europe: Safe, Connected and Clean Annex 1 EU Strategic Action Plan on Road Safety https://bit.ly/2Kzlq2E

FOR FURTHER INFORMATION

Ellen Townsend, Policy Director
ellen.townsend@etsc.eu
+32 2 230 41 06

European Transport Safety Council
20 Avenue des Celtes

B-1040 Brussels

Tel: +32 2 230 4106

information@etsc.eu

www.etsc.eu

Follow us on twitter: @etsc_eu

The European Transport Safety Council (ETSC) is a Brussels-based independent non-profit making organisation dedicated to reducing the numbers of deaths and injuries in transport in Europe.