

## European Cyclists' Federation Briefing on the 5th EU Road Safety Action Programme 2020 – 2030

European Cyclists' Federation

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### Executive Summary

Disparity in cycling road safety between Member States shows that national, regional and local governments alone are not able to provide for a policy framework that ensures level of safety. There is also a lack of knowledge amongst many Member States on how to start creating safer environments for cyclists even though within the EU there are Member States who are world leaders in this field. This is a perfect market place for the EU to broker good safety standards, the EU has competency in areas of behaviour, infrastructure and vehicle safety (such as through vehicle type approval for example, or infrastructure design and management through the Road Infrastructure Safety Management Directive) and to contribute to its road safety goals, such as the reduction of fatalities and serious injuries. Progress has been made with road safety across the EU saving countless lives and reducing the impact of serious injury impacts on individuals and their families lives. The number of cyclists being killed and seriously injured is also decreasing, but it is decreasing at a slower rate than for other road users. Generally, we have been struggling across the EU with continuing the reduction in road fatalities, the progress that has been made across the EU has plateaued over the past few years. A renewed focus on cyclists, two-wheeler and pedestrian crashes could help the EU get back on track with its goal to halve road fatalities by 2020 and through to the next decennial target in 2030.

This document explains the importance of; the public health aspect of cycling in road safety; research and interventions; introduces the EU Cycling strategy blueprint; and puts forward concrete recommendations and proposals for cycling safety relevant for the European Union. Our recommendations cover;

- Vehicle Safety – particularly for updating the General Safety Regulations and regulations for Autonomous Vehicles
- Electric Bicycles – promote their use and research safety issues with riding styles and infrastructure use
- Data, Statistics and Safety Performance Indicators – including exposure; KSI targets; infrastructure availability, quality and access
- Infrastructure Safety – Minimum quality guidelines, cycling within the Road Safety Infrastructure Management Directive, and Sustainable Urban Mobility Plans
- Road User Behaviour – Professional and private drivers and working time
- Funding – for cycling infrastructure within the EU funding streams



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## Summary of recommendations

Many of the recommendations follow the EU Cycling Strategy<sup>1</sup> blueprint put together by a large number of stakeholders from many different sectors and backgrounds.

### Vision Zero and Moving Beyond Zero

- Incorporate road safety into a fully rounded public health assessment and support the “Moving Beyond Zero” movement
- Promote the assessment of the comfort and attractiveness of road safety interventions for active modes of transport

### Vehicle Safety

- Update Type Approval Regulations to include Intelligent Speed Assistance, Autonomous Emergency Braking, safer lorry cabs and updated testing for bonnet crash design to include cyclists
- Develop a coherent and comprehensive EU regulatory framework for the deployment of automated vehicles that includes safety requirements for vehicle behaviour; including complying with road rules, regulating vehicle behaviour, and assessing interactions with non-equipped users

### Electric Power Assisted Bicycles (EPACs/Pedelecs) and Road Safety

- Promote the use of EPACs, and research into their benefits
- Provide resources for research into the use and rider behaviour on power assisted bicycles, particularly ‘speed’ EPACs, and advise EU Member States
- Advise Member States on the latest status of the safety features of these bicycles on the roads, learning particularly from those countries that have many currently on the roads (AT, BE, DE, NL)
- Make sure that long distance cycle routes within EU infrastructure guidelines and Road Safety Infrastructure Management Directive are of the highest quality since they will be higher speed bikes

### Data and Statistics

- Assist and collect fatality data, serious injury data, single vehicle accident, exposure data and research on under-reporting

### Safety Targets and Performance Indicators

- To continue the setting of an EU decennial target of road fatalities and include a serious injuries target
- A target fatality rate to be introduced within Member States with guidelines recommended on how to implement from the Commission (e.g. default 30km/h)
- We have provided a list of Safety Performance Indicators including
  - Exposure data (distance/time travelled) to compare and assess interventions, mode risks and success
  - Feeling of safety on the roads for active modes to promote road safety interventions without deterring active modes
  - Infrastructure availability, quality and access for cyclists

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<sup>1</sup> The Cycling Strategy is available in full here [https://ecf.com/eu\\_cycling\\_strategy](https://ecf.com/eu_cycling_strategy)



### Infrastructure Safety

- EU level guidelines for cycling infrastructure with minimum quality requirements
- Cycling and walking road safety best practises and 30km/h as default to be fully incorporated into Sustainable Urban Mobility Plans SUMPS
- Within the context of the RISM Directive; Provision of safe, comfortable and direct active mobility routes and crossings for cyclists; safe and comfortable crossings across (re)constructed roads; cycling infrastructure in training and certification of road safety auditors

### Driver Training and Professional Drivers

- Ensure timely transposition into national law of the Professional Drivers Qualifications Directive and monitor the effectiveness of these measures once implemented with a view to improvement in the future
- Monitor and make suggestions to Member States to improve the safer driver element between cyclists and pedestrians in Directive 2003/59
- No changes to the possible working time schedules, or at least to ensure that any changes do not lead to drivers fatigue, tiredness and lack of concentration
- Update Directive 2006/126 to include drivers knowledge of new vehicle technologies

### Funding for Infrastructure

- Significantly increase the amount of financing for infrastructure projects in transport and mobility in general and drastically increase the percentage of bicycle funding
- Include cycling as a mode of transport in the CEF network and make bicycle infrastructure projects eligible for individual funding
- the creation of EU guidelines for active mobility infrastructure to be used in EU funded cycling infrastructure projects



## Cycling safety in the context of public health and promotion

Given the huge health benefits of cycling (health related life-years gained outweigh injury-related life years lost by around 20:<sup>2</sup>, a 2020-2030 decennial safety plan should also look at promoting cycling and walking. Increased cycling is a solution to many issues within our cities as well as promoting improved health. It can improve air quality, ease congestion, promote liveable cities, and promote sustainable, democratic access to city amenities and services. Active commuting by bicycle is associated with a substantial decrease in the risk of death from all causes, including cancer and cardiovascular disease, compared with non-active commuting. Active transport use can boost self-esteem, mood, sleep quality and energy, as well as reducing the risk of stress, depression, dementia and Alzheimer's disease<sup>3</sup>.

We see a correlation between an increase in the numbers of cycling and a reduced risk for each individual cyclist (Safety in Numbers)<sup>4</sup>. It can also lead to less motorised traffic and so less crashes for all<sup>5</sup>; cycling should not be seen as a threat to road safety<sup>6</sup>, but can be used to bring a positive impact on road safety. It is also not overly dangerous; cycling is as risky per distance travelled as walking<sup>7</sup>. Road safety interventions should not decrease the number of cyclists or act as a barrier to would-be cyclists as this intervention would almost always bring about a public health disbenefit no matter how effective the road safety measure. Rather road safety interventions should be seen as an opportunity to improve public health improvements through increasing the use of cycling as a sustainable, healthy transport mode.

Around 50% of motorised vehicle journeys are under 5km and 30% under 3 km<sup>8</sup>. This shows the huge potential of shifting from motorised transport to active modes of transport like cycling. However, a huge barrier to increasing cycling is the perception of safety risks<sup>9</sup>, so it is important that cycling, as well as being safe, looks safe and is comfortable therefore the perception of risk and safety is also an important element of cycling road safety and advocacy. Promoting cycling can improve public health and road safety; while improved road safety can increase cycling, which improves public health (and safety).

<sup>2</sup> Hillman M, 1992. Cycling and the promotion of health. PTRC 20th Summer Annual Meeting Seminar B, pp 25-36

<sup>3</sup> <https://www.nhs.uk/Livewell/fitness/Pages/Whybeactive.aspx>

<sup>4</sup> Safety in Numbers. A full literature review on this can be found here (in Swedish)

[http://www.trafikverket.se/contentassets/e2cb0e0ce34744369e293d6d35d1091d/safety\\_in\\_numbers\\_minskar\\_risken\\_for\\_cykleolyckor\\_med\\_fler\\_cyklister\\_litteraturstudie.pdf](http://www.trafikverket.se/contentassets/e2cb0e0ce34744369e293d6d35d1091d/safety_in_numbers_minskar_risken_for_cykleolyckor_med_fler_cyklister_litteraturstudie.pdf)

<sup>5</sup> <http://www.sciencedirect.com/science/article/pii/S0001457510003416> and here

<http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=8249504&fileId=S1466046610000566>

<sup>6</sup> <https://www.sciencedirect.com/science/article/pii/S0001457512003119>

<sup>7</sup> <https://www.nhs.uk/news/lifestyle-and-exercise/news-analysis-cycling-safety-special-report/>

Beck LF, Dellinger AM, O'Neil ME. Motor vehicle crash injury rates by mode of travel, United States: using exposure-based methods to quantify differences. American Journal of Epidemiology. 2007;166(2):212–218  
<http://aje.oxfordjournals.org/content/166/2/212.full.pdf+html>

International Transport Forum. Road Safety Annual Report 2013

<http://www.internationaltransportforum.org/pub/pdf/13IrtadReport.pdf>

Walking and Cycling Statistics, England: 2016; UK DfT

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/674503/walking-and-cycling-statistics-england-2016.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/674503/walking-and-cycling-statistics-england-2016.pdf)

<sup>8</sup> WHO [http://www.euro.who.int/\\_data/assets/pdf\\_file/0009/98424/E89498.pdf](http://www.euro.who.int/_data/assets/pdf_file/0009/98424/E89498.pdf)

<sup>9</sup> [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/49971/climate-change-transport-choices-full.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/49971/climate-change-transport-choices-full.pdf)



## Economic benefits of increasing cycling

Road safety is a major barrier to cycling, not just the actual risk but also the perceived risk. The factors that influence the perception of risk include the volume, speed, and composition of motor traffic, parked cars along the route, junction type, and turns needed to be made, as well as access to separate infrastructure<sup>10</sup>. Improving cycling safety also promotes cycling with huge health, environmental, societal but also financial benefits. In a 2016 report ECF has shown that that every year cycling in 28 EU Member States creates economic benefits of EUR 513 billion<sup>11</sup>

## Vision zero and “Moving Beyond Zero”

ECF support the Safe Systems/Vision Zero approach to road safety. The goal of safe systems is to ensure that human error and mistakes do not lead to a crash; or, if a crash does occur, it is sufficiently controlled to lessen the outcome of a death or life-changing injury. This system approach also calls for<sup>12</sup>

- the increased use of sustainable modes of transport and reduction of motor vehicle use
- the re-purposing of roads and urban spaces for a range of community purposes
- re-assessing the measures we use measuring road safety such as looking at the perception of risk on the roads



Sustainable transport options are also the safest. Cyclists, pedestrians, public transport users rarely cause deaths or serious injuries, taking energy and mass out of the transport system can be a key safety tool to reduce danger/risk on the roads.

However because of the huge health benefits seen in the previous section, we also see the opportunity to go beyond Vision Zero and we support the current movement from Sweden looking at including these health benefits of active modes “Moving Beyond Zero”<sup>13</sup>. Improving cycling conditions and prioritising active modes should be a crucial part of the Vision Zero/Safe Systems approach. The Safe Systems Approach should also be about encouraging greater use of safer, active modes of travel such as public transport, walking and cycling. Sometimes this is forgotten in the Vision Zero/safe systems work. This not only means we should see cycling and walking as safer means of transport but also as healthier means of transport. As seen previously because of their active nature there is also a health benefit to their use. Specifically bringing the health benefits into the Safe Systems paradigm means we can assess safety interventions from a full public health perspective.

## ECF recommendations

<sup>10</sup> Parkin et al, Barriers to Cycling, in Cycling and Society, ed, by Dave Horton, Paul Rosen, Peter Cox 2007

<sup>11</sup> All figures from ECF The EU Cycling Economy <https://ecf.com/what-we-do/cycling-economy/economic-benefits>

<sup>12</sup> <http://www.brake.org.uk/facts-resources/15-facts/1484-safe-systems-facts-page>

<sup>13</sup> <http://movingbeyondzero.com/>



- Incorporate road safety into a fully rounded public health assessment and support the “Moving Beyond Zero” movement
- Promote the assessment of the comfort and attractiveness of road safety interventions for active modes of transport

## EU Cycling Strategy and Road Safety

The recommendations for EU action in this document are based mainly on the EU Cycling Strategy blueprint document<sup>14</sup> that was put together by many different stakeholders. We see an EU coordinated Cycling Strategy as being an important part of the European Commission's toolbox to help improve road safety for cyclists. The Blueprint was devised to inspire the EU Commission to develop its own EU Cycling Strategy, to remove fragmentation in the development of relevant policies across EU institutions and avoid inefficiencies in the expansion of local cycling strategies, including road safety.

Its central objectives are;

- 1) Cycling should be an equal partner in the mobility system
- 2) Grow cycle use in the EU by 50% at an average in 2019/2020 - 2030
- 3) Cut rates for cyclists killed and seriously injured by half (in km cycled) in 2019/2020 - 2030
- 4) Raise EU investment in cycling to €3bn in 2021-27 period; and €6bn from 2028-34

### ***EU Cycling Strategy***

The Council of the EU, meeting in their Transport, Telecommunications and Energy configuration in October 2015 (Transport, informal) in Luxembourg, saw transport ministers of all 28 present Member States endorsing the 'Declaration on Cycling as a Climate-Friendly Transport Mode' (7 October 2015). The European Parliament, in its response to the European Commission's Midterm Review of the 2011 White Paper on Transport, called for an EU roadmap for cycling to be included in the Commission Work Programme 2016'

The strategy blueprint was put together by ECF with; Leuven Mobility Research Center, CONEBI, CROW, Cycling Embassy of Denmark, Luxembourg Ministry of Transport, EPHA, ETSC, GIZ, Green Budget Europe, Austrian ministry of Agriculture, Forestry, Environment and Water Management, Hungary Ministry of National Development, POLIS, Transport for London, UCI.

<sup>14</sup> The Cycling Strategy is available in full here [https://ecf.com/eu\\_cycling\\_strategy](https://ecf.com/eu_cycling_strategy)



## Full description of recommendations

### Vehicle safety

#### New Vehicle Type Approval<sup>15</sup>

Collisions with cars, vans and lorries account for a large proportion of cyclist deaths. The severity of impacts between motor vehicles and cyclists is influenced by a variety of factors, including the level of protection provided by the vehicle, particularly with regards to the speed of the vehicle. For large vehicles the risk of running over a cyclist is high, especially when turning, and countermeasures for this are needed such as active HGV turning assists and better Direct Vision from the cab<sup>16</sup>. Given the impact of speeding on crash causation and crash severity mandating an Intelligent Speed Assistance system that intervenes to assist the driver from going over the speed limit would be a priority, as would Autonomous Emergency Braking for pedestrians and cyclists.

The following ECF recommendations follow those of the European Cycling Strategy

- Update existing tests and extend scope of Pedestrian Protection Regulation 78/2009 to include cyclist protection. Ensure the safer design of motorised vehicles by extending the head impact zone
- Support the development of airbags for the windshield and windshield frame as a viable safety measure to improve the protection of cyclists and other vulnerable users struck by cars
- Introduce Autonomous Emergency Braking Systems, for all motor vehicles, which operate at all speeds, as well as those that can detect cyclists, especially from turning heavy goods vehicles
- Introduce energy-absorbing front underrun protection for all new heavy goods vehicles to attenuate the severity of cyclist/HGV collisions
- Ensure that side protection closes off the open space between the wheels of all new heavy goods vehicles
- Remove exemptions that exist so as to oblige use of side guards to protect cyclists in collisions with trucks
- Develop new direct vision requirements for trucks that would improve the driver's current field of view by lowering the eye height and enlarging the size of the window apertures
- Improve the vision of the passenger side both through the windscreen and through the side door window and to the rear
- Develop procurement and other contractual processes to ensure that where construction, infrastructure or any other project or development is supported, partially or in full, via EU funding, that the use of trucks which meet the new direct vision, and revised underrun standards as a

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<sup>15</sup> ECF Position Paper on the update to the General Safety Regulations  
[https://ecf.com/sites/ecf.com/files/ECF%20Position%20Paper%20on%20GSR%20and%20Ped%20Protection%20Regs\\_November%202016.pdf](https://ecf.com/sites/ecf.com/files/ECF%20Position%20Paper%20on%20GSR%20and%20Ped%20Protection%20Regs_November%202016.pdf) and an ECF commissioned research report by AGU Zurich on the Pedestrian Protection Regulations and how they can be improved  
[https://ecf.com/sites/ecf.com/files/ECF\\_AGU%20ZURICH%20final%20report%20on%20passive%20safety.pdf](https://ecf.com/sites/ecf.com/files/ECF_AGU%20ZURICH%20final%20report%20on%20passive%20safety.pdf)

<sup>16</sup> More from ECF on cab design can be found here <https://ecf.com/what-we-do/road-safety/safer-lorrietrucks-cyclists>





contractual requirement for that funding, both in construction work and in the operation of major infrastructure projects

- Devise a new simple test procedure to reduce the frequency of cyclist/pedestrians going under the front of the HGV or its wheels
- Adopt legislation for the mandatory fitting all new passenger cars and light trucks and vans under 3.5 tonnes with Autonomous Emergency Braking (AEB) systems which operate at all speeds, as well as those that can detect all kind of cyclists
- Adopt type approval legislation for the mandatory fitting of all new vehicles with an overridable assisting ISA system
- Mandate indicator lights which flash alongside of the truck or the trailer of a truck to show that a truck is turning making this more visible to cyclists in the surrounding
- Encourage Member States to roll out digital speed map information and make this available to public and private operators covering the entire road network including a function to update changes to speed limits

## Autonomous Vehicles and New Vehicle Technologies<sup>17</sup>

It is important that the safety of automated vehicles is not presumed. The behaviour of vehicles, both semi-autonomous and fully autonomous will need to be regulated. All those functions related to the safety of the vehicle should be brought into vehicle type approval as will the 'behaviour' of the vehicle, and the driving behaviour within the vehicles. For semi-autonomous vehicles distraction and understanding the role of the driver should be closely monitored and legally codified to make sure that drivers understand their roles and requirements in the car. We would have concerns about how these vehicles will interact with cyclists and other road users, particularly during the transitional stage of automaton. For fully autonomous vehicles there is no clear one way of manipulating the vehicle. It will be possible for an autonomous vehicle to behave more or less aggressively while still within the rules of the road. A driving test or equivalent for the vehicle will have to be a part of the testing requirements for the vehicle.

Dealing with the specific requirements of semi and fully autonomous vehicles is a process that should be started now. Interaction between drivers of non-autonomous vehicles and cyclist/pedestrians often takes the form of communication through eye contact. Vehicles and their sensors and cameras will have to go above and beyond simple detection and be able to pick up on different forms of communication. Risk compensation and risk management methods by cyclists and drivers may also be radically altered. Of course, some of the in-vehicle safety technologies now already being deployed are specifically able to help prevent collisions with cyclists and pedestrians, this should be welcomed and made mandatory through Type Approval<sup>18</sup>.

The following ECF recommendations follow those of the European Cycling Strategy

- Develop a coherent and comprehensive EU regulatory framework for the deployment of automated vehicles that includes safety requirements for vehicle behaviour

<sup>17</sup> A discussion document on Autonomous Vehicles and new vehicle technologies here [https://ecf.com/sites/ecf.com/files/2016\\_automated\\_driving\\_briefing\\_final.pdf](https://ecf.com/sites/ecf.com/files/2016_automated_driving_briefing_final.pdf)

<sup>18</sup> Such as Intelligent Speed Assistance, Automatic Emergency Braking and active assist for large vehicles



- Revise the EU type approval regime to ensure that automated vehicles comply with all specific obligations and safety considerations of the traffic law in different Member States
- Revise type approval standards to cover all the new safety functions of automated vehicles, to the extent that an automated vehicle will pass a comprehensive equivalent to a 'driving test'. This should take into account high-risk scenarios for occupants and for road users outside the vehicle
- Conduct research looking at the transitional phase of mixed automated and semi-automated vehicles and interaction with vulnerable road users.
- This should also focus on the problem of distraction and also 'Takeover' time in critical and non-critical conditions for semi-autonomous vehicles
- Develop a Human Machine Interface Statement of Principles for use of ITS by cyclists to guide the design of how cyclists interact with devices, apps and other smart technology without risky or distracting behaviour
- Develop EU guidelines and regulations for the use of mobile devices by cyclists, with the goal of minimizing distraction
- Ensure that the Driving Licence Directive 2006/126 remains valid for new vehicle technologies as well as for autonomous and semi-autonomous driving

## Electric Bicycles and Road Safety<sup>19</sup>

Electric Power Assisted Cycles (EPACs otherwise known as Pedelects) are excellent new additions to the transport system. EPACs assist the rider with a low power boost from an electric motor. They make it easier to travel longer distances, make it possible to carry heavier loads, and easier to overcome natural obstacles, such as inclines and headwinds, and offer a great alternative to company cars. They have the potential to be a valid substitute for 80% of private car use. A German survey found that EPAC users most often stated the car as their alternative means of transport, whereas other bicycle users stated most often public transport, in Sweden 47–67% of new EPAC riders had replaced a car trip<sup>20</sup>.

Most EPACs have a 250 watt power assisted motor that cuts out at 25 km/h. There are also more powerful bicycles that have a higher wattage (usually at around 500 – 750 watts) and a cut out speed of 45 km/h called speed EPACs. The lower powered are regulated through the same standardization bodies as bicycles<sup>21</sup>, while the speed EPACs are type approved. This is a good and clear separation that seems to have been successful in creating a stable environment for manufacturers to enter the single market and should be maintained.

Current research suggests that the lower powered bicycles do not differ much from the traditional bicycle<sup>22</sup>. However the more powerful 'speed' EPACs have little research in their safety needs or issues. We would recommend research on the use of Electric Power Assisted Bicycles on the roads, such as how they share

<sup>19</sup> ECF document on Speed Pedelects here [https://ecf.com/files/speed%20ped%20policy%20document\\_final\\_0.pdf](https://ecf.com/files/speed%20ped%20policy%20document_final_0.pdf)

<sup>20</sup> A full list of potential for modal shift to pedelecs from motorised vehicles is available here <https://www.sciencedirect.com/science/article/pii/S0965856415301865>

<sup>21</sup> Requirements for the compatibility with the Machinery Directive are built into the pedelec standard EN 15194

<sup>22</sup> ITF presentation of ongoing research by Schepers, Klein Wolt and Fishman here <https://www.itf-oecd.org/cycling-safety-roundtable> <https://www.ncbi.nlm.nih.gov/pubmed/25238296>



the roads with other road users, the impact of elderly people using these bicycles and how the bicycles could be improved. It should be born in mind that these bicycles have an electronic source which could be used to incorporate better safety devices and designs.

To safely tap into the potential of EPACs, careful consideration must be given to the design standards of cycling infrastructure. Geometry of cycle paths needs to be adapted to higher speeds and safe overtaking of bicycles with different speeds. As EPACs are an attractive mobility option for the elderly, more attention must be given to quality of signing, horizontal markings and general readability of cycling infrastructure. Even now, many single bicycle crashes are related to the visual characteristics of bicycle facilities<sup>23</sup>, and the problem is expected to be more acute in the ageing European society.

The following ECF recommendations follow those of the European Cycling Strategy

- Promote, research and support national funding for the use of EPACs as a way of shifting from private motor vehicles to active sustainable transport
- Maintain the distinction in EU legislation for manufacturers between lower powered EPACs and 'speed' EPACs
- Provide resources for safety research into the use and rider behaviour on power assisted bicycles (particularly 'speed' EPACs)
- Advise Member States on the latest status of the safety features of these bicycles on the roads, learning particularly from those countries that have many currently on the roads (AT, BE, DE, NL)
- Make sure that long distance cycle routes within EU infrastructure guidelines and Road Safety Infrastructure Management Directive are of the highest quality since they will be higher speed bikes

## Data and Statistics

Good data is essential; cycling data is lacking in many countries across the EU, we need reliable fatality and serious injury figures as well as distance or time travelled per mode to find good exposure data to help track down and focus on areas of risk and help us understand where and how safety interventions are working. Of course, this data can also be useful for traffic management purposes, which can also be used to improve safety throughout the transport system. Although most cycling fatalities are as a result of crashes with motorised vehicles, there are many serious injuries are as a result of single bicycle accidents, it is important that we understand the reasons for this in order to find solutions.

It is often assumed that there is a large number of unreported or misreported crash and injury data regarding cyclists<sup>24</sup>, this is far from clear<sup>25</sup>. Non or misreported crashes are often single vehicle accidents which is as a result of poor or faulty infrastructure design or implementation. It is important to understand the figures here in order to understand the infrastructure requirements and development needs. With this in mind the Commission must work with member states to improve the collection of road safety data for all modes, including single vehicle crashes. This can include how to bring innovative solutions which can bring down the cost of mobility surveys, online questionnaires and dedicated survey apps on smartphones

<sup>23</sup> See for example [http://www.fietsberaad.nl/library/repository/bestanden/121107\\_schepers\\_What-do-cyclists-need-to-see-to-avoid-single-bicycle-crashes.pdf](http://www.fietsberaad.nl/library/repository/bestanden/121107_schepers_What-do-cyclists-need-to-see-to-avoid-single-bicycle-crashes.pdf)

<sup>24</sup> [https://ec.europa.eu/transport/road\\_safety/specialist/knowledge/pedestrians/crash\\_characteristics\\_where\\_and\\_how/data\\_considerations\\_en](https://ec.europa.eu/transport/road_safety/specialist/knowledge/pedestrians/crash_characteristics_where_and_how/data_considerations_en)

<sup>25</sup> <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0050606>



are options to reduce the cost of surveys. An EU guidance should be developed to improve survey quality and comparability.

The following ECF recommendations follow those of the European Cycling Strategy

- Commission to assist Member States in collection of good quality fatality and serious injury data. Particularly with overcoming issues of under reporting for all modes and guidance to improve survey quality
- Exposure data is another important statistic that will need to be collected from Member States. Again this would seem like an ideal challenge to be undertaken at EU level
- Research into underreporting of crash and injury data and single vehicle crash data of all modes should be understood much more fully in order to provide necessary input to infrastructure development

## Safety Targets and Performance Indicators

The European Commission has been consistent in setting road safety fatality reduction targets, it goes without saying that these targets should be continued. We would also recommend that serious injury targets are also included within the next decennial target. This was also a stated goal in EU transport ministers Declaration of Valletta of 2017<sup>26</sup>.

We would recommend a target fatality rate to be introduced within Member States. Fatality target rates could be in line with current progress and would have to be coordinated with the overall EU fatality target. Guidelines and recommendations on how to achieve this could be put forward by the Commission (30 km/h as default in urban areas; separating cyclists and pedestrians where road traffic is high or fast).

We would also recommend the introduction of more specific Safety Performance Indicators, in order to focus and target areas that require more work. These indicators should first be collected by Member states with the assistance if necessary by the Commission but should then become targets to be reached by those leading Member States.

ECF recommendations;

- To continue the setting of an EU decennial target of road fatalities and include a serious injuries target
- Exposure data for all road users (pedestrians, cyclists, PTWs, cars, vans, HGVs), preferably by time travelled or distance travelled. This is important not just with regards to understanding risk within the transport system and assessing the effectiveness of road safety measures, but it also helps us understand how successful we have been in reducing motor vehicle use, especially for short journeys, and how much modal shift we have achieved to healthier, safer, more sustainable modes

ECF can recommend these following road safety indicators specifically for cycling;

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<sup>26</sup> Valletta Declaration on Improving Road Safety 2017

[https://www.eu2017.mt/en/Documents/Valletta\\_Declaration\\_on\\_Improving\\_Road\\_Safety.pdf](https://www.eu2017.mt/en/Documents/Valletta_Declaration_on_Improving_Road_Safety.pdf)



<b><u>Safety Performance Indicator</u></b>	<b><u>Justification</u></b>	<b><u>How to measure</u></b>
Road user distance or time travelled (for all modes)	Exposure data (as mentioned in the data/statistics section) to help track down and focus on areas of risk and help us understand where and how safety interventions are working	Survey of random sample on travel behaviour or counting methods
Road user target fatality rate for member states	Road user target fatality rate (to be used with exposure) to inspire individual Member States to reduce risk within the transport system	Member State fatality figures along with exposure data measured above
% of cyclists and pedestrians with a 'feeling of safety' or 'feeling of danger' while using the roads	A 'road satisfaction' indicator, as a way of making sure that road safety measures are not simply moving road users from cycling to more protected modes. A road safety intervention can make cycling safer by reducing cycling numbers, but this should not be the intention. The perception of risk is also a good indicator for the success of road safety interventions	Survey of random sample from whole population not just cyclist as it will be important to include those thinking of cycling. Can be done on the road or junction (as is carried out in Copenhagen <sup>27</sup> )
% of road network safe for cycling	Basic indicator on whether the road network is safe for cyclists	Consider adapting a common framework for several indicators referring to safe network, safe routes etc. Simplest version would be to define a street section as safe for cycling, if it meets one of the following criteria:
% of population with access to safe cycling network	As above, but with more importance given to roads in densely populated areas	<ul style="list-style-type: none"> <li>• speed limit 30 km/h</li> <li>• equipped with cycle lanes (separation from motorised traffic by horizontal markings only)</li> <li>• equipped with cycle paths (separation from motorised traffic by construction)</li> </ul>
% of population in age range 8-18 with a safe cycling route between home and school	Safe cycling is particularly important amongst children and younger people as a way of building independence. Roads	The definition might also include some quality requirements (e.g. paved surface, minimum width). It can also reference the cycling

<sup>27</sup> [https://nacto.org/wp-content/uploads/2010/08/Cycle\\_Tracks\\_Copenhagen.pdf](https://nacto.org/wp-content/uploads/2010/08/Cycle_Tracks_Copenhagen.pdf)



	should be safe to cater for everyone from ages from 8 – 80. Safety for young people and children on the road acts as a proxy for the safety (and perception of safety) of the road infrastructure for cyclists	infrastructure guidance as described in section ... The same definition should be applied consistently to indicators on % of network, % of population with access to safe cycling routes, % of children with safe route to school
% of road network with speed limit 30 km/h or lower	Alternative (for % of road network safe for cycling) set of more detailed indicators. Can be also used in connection with as sub-indicators	See Above
% of road network equipped with cycle lanes		
% of road network equipped with cycle paths		
% of national roads (including motorways, expressways etc.) with alternative long-distance routes for cycling	See section on changes to the Road Infrastructure Safety Management Directive. There are many areas along longer distance routes that are (or could be) popular with cyclists. There are many serious cyclist crashes outside of urban areas (around 40% of fatalities outside urban areas).	% of national (primary, strategic etc.) roads with signed alternative routes for cycling
Total length of certified EuroVelo routes [km]	EuroVelo is a network of European long-distance cycle routes with well-defined and widely accepted certification criteria. This allows to measure not only the quantity but also the quality of cycle infrastructure on European level.	ECF is maintaining a database of EuroVelo routes, including information on certification status. The information is available down to scale of 1 km
Member states with long term road safety programs including cycling action plan.	For good governance and continued focus on road safety improvements public authorities should have goals and outline how to achieve their goals	Counting of national action plans
% of third party crashes by mode	Understanding crash opponents would be useful data to understand. Risk for third party crash opponents.	Number of crash opponents between and within modes of transport

Road safety indicators for all road users;

- % of motor vehicles (car, van, HGV, Bus, bicycle, EPAC) travelling within the speed limit by road type



Speed is an essential ingredient in managing risk, mistakes and severity of injury on the roads. We believe all modes should conform to the speed limits. Though penalties should reflect the seriousness of the risk per mode

- % of number of alcohol related road deaths
- % of passenger car drivers/cyclists using a handheld (smart) phone (roadside survey)
  - Distraction is beginning to increase again as smartphones and devices/services are more widespread
- % of roads meeting the standards of the Infrastructure Safety Management Directive (which should include cycling infrastructure; see infrastructure section)
- % of 5 star Euro NCAP cars among the EU fleet of passenger cars
- Number of checks performed by the enforcement authorities of speeding, drink driving, and use of mobile devices

## Infrastructure Safety

Existing disparity in road safety between Member States shows that national, regional and local governments alone are notable to provide for a policy framework that ensures level of infrastructure safety for cycling. There is also a real lack of knowledge amongst many Member States on how to start creating safer environments for cyclists despite the fact that



within the EU there are Member States who are world leaders in this field. The EU is perfectly placed to broker good safety standards and contribute to its road safety goals in reducing fatalities and serious injuries by better cycling infrastructure in the following areas:

- Minimum quality requirements for cycling infrastructure
- Sustainable Urban Mobility Plans
- Road Infrastructure Safety Management

### Minimum quality requirements for cycling infrastructures

It is essential that Member States and the EU do not waste money on bad infrastructure, that is either not used by cyclists, or does not guarantee safety. Currently the quality of implemented cycling infrastructure is very much varied, which decreases the effectiveness of the public (including EU) funds used for financing it. This applies both to dedicated active mobility projects and elements of cycling infrastructure in other investments (e.g. in public spaces, road or public transport).



Despite the differences in context between Member State there are certain key principles to cycle infrastructure that are universal and should be adopted everywhere. The EU should set minimum quality criteria based on these principles (tailored to the likely levels of use). They should include common definitions of infrastructure types (cycle path, cycle lane etc.), varying degree of segregation of different user groups depending on traffic speed and volume, basic design parameters for bicycle infrastructure (minimum width, curve radius, stopping sight distance etc.) Furthermore, they should be developed in a way to have the quality to be referred to in the drafting of regulations and programming documents in the member states.

Such standards can be used for reference in other EU level guidelines and funding programmes, as well as for monitoring the progress in terms of safe infrastructure (see key performance indicators). Application of the standards should be obligatory for e.g. road (re)construction projects falling under the scope of the RISM Directive (see below) or funded by EU. It should be noted that as the EU level standards can ensure only minimum quality requirements, Member States should be encouraged to developed more detailed and ambitious standards, tailored to the national context.

ECF Recommendation based on the EU Cycling Strategy:

- EU level guidelines for cycling infrastructure with minimum quality requirements; the guidelines can be referenced in different applications (e.g. in the RISM directive); in particular compliance with the guidelines should be obligatory for all projects that are EU-funded (see funding).

### **Sustainable Urban Mobility Plans**

Member states should encourage the use of Sustainable Urban Mobility Plans within city areas made available within the context of the European Commission Urban Mobility Package.

Sustainable Urban Mobility Plans (SUMP)<sup>28</sup> can include a focus on safety for active mobility users by including;

- speed reduction policies such as including 30 km/h as the default speed in urban areas
- SUMP should adopt the common hierarchy of transport users based on safety, vulnerability and sustainability with pedestrians at the top, followed by cyclists and public transport users
- Cyclists should be able to mix freely with motorised traffic, however if motor vehicle speeds or volumes are high cyclists should be separated from motorised transport
- Comfort for active mobility users should continue to be a main concern, with clear and easy links between walking, cycling, and public transport
- Cycling safety best practises from across the EU should be included, particularly with regards to infrastructure development, or EU active mobility guidelines included. EU member states are world leaders in good cycling infrastructure and this should be capitalised upon
- Junctions and intersections are some of the most dangerous where on average 25% of EU cycling fatal crashes occur and need to have particular attention paid to their design in SUMP
- Country-specific solutions with regards to cycle use in Member States highway codes (including contra-flow cycling, right-turn at red stop lights, use of dedicated cycle infrastructure), can be identified as good practice

<sup>28</sup> [https://ec.europa.eu/transport/themes/urban/urban\\_mobility/urban\\_mobility\\_actions/sump\\_en](https://ec.europa.eu/transport/themes/urban/urban_mobility/urban_mobility_actions/sump_en)





### ECF recommendation based on the EU Cycling Strategy

- The EU should fully include cycling and walking road safety best practises into the Sustainable Urban Mobility Plans
- 30 km/h should be the default speed in residential and urban areas within Sustainable Urban Mobility Plans
- Sustainable Urban Mobility Plans should adopt the common hierarchy of transport users based on safety, vulnerability and sustainability with pedestrians at the top, followed by cyclists and public transport users

## Road Infrastructure Safety Management

One of the European Union's competence for road infrastructure lies with the TEN-T network which includes a Europe-wide network of roads serving mostly long-distance and international traffic. The TEN-T roads fall within the directive 2008/96/EC on road infrastructure safety management<sup>29</sup> (RISM) and the directive 2004/54/EC on minimum safety requirements for tunnels<sup>30</sup>. The infrastructure (re)construction projects on the TEN-T roads often have a significant influence on how the cycling and pedestrian traffic in the area up to a few kilometres from the (re)constructed road is organised and on their safety, both positively and negatively. The current TEN-T network also includes different types of roads from motorways to express roads and conventional strategic roads, which can "integrate the main urban and economic centres, interconnect with other transport modes" and do therefore have a direct impact on cycling and walking.

ECF Recommendations based on the ECF position on the EU regulatory framework for road infrastructure safety management,<sup>31</sup> include ensuring:

- Provision of safe, comfortable and direct active mobility routes – functional connections of settlements and workplaces along the (re)constructed road;
- Sufficient density of safe and comfortable crossings across (re)constructed roads;
- Upgrade of other roads affected by the (re)construction project to safe standards.
- Safe active mobility option or an attractive alternative for tunnels
- Minimum quality requirements for cycling infrastructure (see above)
- Cycling infrastructure in training and certification of road safety auditors

At the time of writing, a possibility to extend the scope of the RISM Directive to include roads other than motorways, expressways, 2+1 and similar high-speed roads, is under discussion. The potential extension of the scope of the Directive should be accompanied by changes in training and certification of road safety auditors. Perhaps different specialisations of safety auditors should be introduced, as it would be difficult to significantly extend current training programmes without compromising their quality. Similarly, extension of the scope to other roads would reinforce the need for an EU level guidance on cycling infrastructure, especially if the auditor training certificates are to be mutually recognised between Member States. It would also increase the importance of other recommendations made in this document, as cyclists and pedestrians constitute higher share of traffic on roads outside TEN-T network. Introducing obligatory

<sup>29</sup> <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32008L0096>

<sup>30</sup> <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32004L0054>

<sup>31</sup> [https://ecf.com/sites/ecf.com/files/rism\\_position\\_paper-ECF.pdf](https://ecf.com/sites/ecf.com/files/rism_position_paper-ECF.pdf)



provisions for cyclists and pedestrians, as well as minimum quality requirements for cycling infrastructure, should be a prerequisite for the scope extension.

## Driver Training and Professional Drivers

The regulation of professional drivers of large vehicles have a particular competence at the EU. The Professional Drivers Qualifications Directive<sup>32</sup>, which is currently being reviewed by the European institutions has no urban safety dimension, we understand that this will be changed and will mandate the need for cyclist and pedestrian safety as part of implementation of the Directive in the future. This is to be welcomed and we would suggest that how this is being used amongst Member States to improve safer interactions between cyclists/pedestrians and larger vehicles.

Currently there are changes being made to Regulation 561/2006 which determines the maximum driving time limits and minimum rest periods for freight and passenger transport maximum. We are concerned that this could be heading in the wrong direction and that drivers will be put under *more* stress and fatigue under current developments. We would recommend no changes to the possible working time schedules, or to ensure that any changes do not lead to drivers fatigue, tiredness and lack of concentration.

The European Driving Licence Directive 2006/126 could also be reviewed and updated to include knowledge of new vehicle technologies.

### ECF Recommendations

- Ensure timely transposition into national law of the Professional Drivers Qualifications Directive and monitor the effectiveness of these measures once implemented with a view to improvement in the future
- Monitor and make suggestions to Member States to improve the safer driver element between cyclists and pedestrians in Directive 2003/59
- There should be no changes to the possible working time schedules, or at least to ensure that any changes do not lead to drivers fatigue, tiredness and lack of concentration
- Update Directive 2006/126 to include drivers knowledge of new vehicle technologies

## Funding for Infrastructure

In the current Multiannual Financial Framework 2014-2020 (MFF) the EU is set to spend more than €1,800 billion in payments and commitments.<sup>33</sup> The current amount of this budget that is going to infrastructure is minimal – and for cycling even less. The European Structural and Investment Fund is worth €70 billion in total. €39 billion are for supporting the move towards low-emission mobility and €12 billion of this are set aside especially for low-carbon and sustainable urban mobility. Under the research programme Horizon2020, €6.4 billion are available for low-carbon mobility projects and under the Connecting Europe Facility (CEF)<sup>34</sup>, €24.05 billion are being made available to co-fund Trans-European Transport Network (TEN-T) projects. The ECF observatory for EU cycling funds estimates that during the 7

<sup>32</sup> Directive 2003/59/EC. ECF Position Paper here

[https://ecf.com/sites/ecf.com/files/ECF\\_Position\\_Paper\\_on%20Prof\\_Drivers\\_Qual\\_Dir.pdf](https://ecf.com/sites/ecf.com/files/ECF_Position_Paper_on%20Prof_Drivers_Qual_Dir.pdf)

<sup>33</sup><http://www.europarl.europa.eu/news/en/headlines/priorities/20130901TST18401/20131118IPR25541/european-parliament-approves-eu-s-long-term-budget-mff-2014-2020>

<sup>34</sup> The CEF has been created partly to fund the TEN-T



year period only between €1.3 and €2 billion euros are available for bicycle-related infrastructure projects.<sup>35</sup> ECF would therefore support continued and increased funding to improve cycling safety<sup>36</sup>.

Cycling is not mentioned as a mode of transport in the CEF framework and therefore is not eligible for individual funding. This particular situation complicates the inclusion of bicycle infrastructure into other infrastructure projects. We want to see cycling included as a mode of transport in the CEF network and make bicycle infrastructure safety projects eligible for individual funding. ECF is concerned about the low importance given to cycling a mode of transport which is vital to reach the above outlined targets. We want to see the recognition of cycling as a major mode of transport in the new framework, increased funds for the cycling infrastructure and last but not least for European guidelines on infrastructure for active mobility.

Including the Eurovelo<sup>37</sup> long distance bicycle routes in the TEN-T would also allow cycling infrastructure to be built as standalone projects within the context of TEN-T. Currently Eurovelo is mentioned in the TEN-T guidelines to be considered in the context of other EU projects but does is not treated as equal with other modes. EU funding for any infrastructure project should be contingent on meeting the criteria set in the cycling infrastructure standards described in the Infrastructure section above. For example, a motorway or high-speed train (re)construction project should ensure sufficient density of safe and comfortable crossings under- or overpasses to not create a barrier for cycling traffic.

Funding for safer cycling and promoting cycling will always pay back. In a 2016 report ECF has shown that that every year, cycling in 28 EU Member States creates economic benefits of EUR 513 billion<sup>38</sup>.

#### ECF Recommendations;

- Continued and increased funding to improve the EU regulatory framework for road infrastructure safety management
- Significantly increase the amount of financing for infrastructure projects in transport and mobility in general and drastically increase the percentage of bicycle funding
- Include cycling as a mode of transport in the CEF network and make bicycle infrastructure projects eligible for individual funding
- Include the EuroVelo cycle network as part of the TEN-T and earmark CEF funds for its continued realisation

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<sup>35</sup> <https://ecf.com/what-we-do/european-funding/eu-funds-observatory-cycling>

<sup>36</sup> ECF position paper on EU funding and research is here

<sup>37</sup> <http://www.eurovelo.org/>

<sup>38</sup> All figures from ECF EU Cycling Strategy blueprint [https://ecf.com/eu\\_cycling\\_strategy](https://ecf.com/eu_cycling_strategy)

