Glasgow Centre for Population Health

Response to Scottish Government consultation on *Scotland's Road Safety Framework to 2030*

December 2020

Introduction

The Glasgow Centre for Population Health (GCPH) was established in 2004 to carry out research and support new approaches to improve health and address inequalities, while working in partnership with local organisations and communities. The centre's work is focused on Glasgow but with wider relevance across Scotland and there is a particular focus on poverty as a key determinant of a range of health and social outcomes. Since its inception, the GCPH has recognised the importance of active travel and road safety for all road users in looking at wider population health; and has undertaken a range of related research projects.

GCPH welcomes this consultation and the opportunity it gives for stakeholders to contribute to the development of safe roads in Scotland for all road users. In this consultation we draw on learning from our own work and our knowledge of the wider evidence surrounding cycling and active travel. The consultation paper can be found here.

The health, economic, environmental and community benefits of active travel are well documented. Replacing motorised transport with a zero-carbon mode of transport such as cycling is seen as a key strategy for increasing population levels of physical fitness while contributing to significant environmental savings. However, there appears to be a perception among many people that cycling in the UK in general is unsafe. This is shaped in part by the necessity in many situations to share the road with motorised vehicles which contributes to perceptions of risk and, thus, to low cycling uptake.

In Scotland it is difficult to determine the real risk associated with cycling because there is little reliable data on the number of cyclists and the number of miles cycled. However, it is possible to examine the characteristics surrounding reported cycling casualties and identify factors which contribute to road safety for cyclists. Our study of cycling casualties in the 23 year period 1995-2018 using police-recorded data, showed that although there had been a reduction in the number of *slight injuries and fatalities*; the number of cyclists who were *seriously injured*, and the *rate* of those killed or seriously injured, had increased over the last decade. Furthermore, the number of reported cyclist casualties in Scotland were disproportionate to the relatively low volume of cycling: in 2018 cycling represented 1% of road traffic volume yet cyclists accounted for 8% of all road casualties. As cycling casualties are significantly under-reported, this data does not reflect the true number of casualties or the risk of cycling on Scotland's roads.

Nevertheless, cycling is not an inherently dangerous activity and has clear physical and mental health benefits. There is strong evidence that at a population level,

regular cyclists have significantly lower overall mortality even after accounting for fatalities associated with cycling. Improvements to infrastructure, behaviour change, and national cycling policy combined with substantial and sustained government investment can counterbalance real and perceived cycling risk, and positively influence cycling uptake.

We hope our contribution is useful and would be happy to discuss any aspect of our response further.

Consultation Questions responses

Question 1. Is the vision set out for the next 10 years the right one?

Yes.

We support the broad vision outlined in the consultation document, including proposals to create a “sustainable, inclusive, safe, and accessible transport system” for all road users in Scotland. We would add that the need to move to a low carbon sustainable transport system that helps Scotland achieve our climate change targets and addresses transport related inequalities are extremely important. If successful, the corollary of this shift is that we will see more people (of all equalities characteristics) walking, cycling, and wheeling on roads, pavements, and dedicated paths. Therefore, we should be planning a ‘safe transport system’ that can accommodate this increase in vulnerable road users safely, in order that real and perceived risk on our road system is reduced significantly

Question 2: Are the outcomes of Safe Road Use, Safe Speeds, Safe Vehicles, Safe Roads and Roadsides, and Post-Crash Response to deliver the vision the right ones?

Yes.

We believe these five outcomes offer a useful practical framework from which to consider road safety in Scotland for all road users.

Question 3: Do you agree that the Safe System Approach is fundamental to the success of the Framework?

Yes.

We would hope that this approach allows for a clear focus on the key actions pertaining to each outcome that are required to reduce road casualties and increase perceptions of safety, particularly among vulnerable road users – principally, pedestrians, wheelchair users and cyclists.

Question 4: Are the 12 key challenges for road safety, from Climate Emergency, Health to Emerging technologies and Post-crash response, the correct ones?

Yes.

These challenges are all extremely pertinent to road safety in Scotland. We raise additional points in relation to aspects of specific challenges:

(1) Active and Sustainable travel: its potential effects on road casualties and the benefits road safety can bring.

For more people to walk, cycle and wheel there needs to be a more cohesive and comprehensive national network of safe well-designed walking and cycling routes. Taking cycling as an example, the current infrastructure in Scotland does not represent a cycling network so much as a mishmash of routes of greatly varying quality where most cyclists must alternate between cycling on main roads shared with motorised vehicles and on occasional stretches of dedicated segregated cycle path. This contributes to a heightened perception of risk when cycling in Scotland, particularly when sharing the road with motor vehicles, which means cycling is not an attainable, attractive, or practical aspiration for many people. If more people do choose to walk, cycle and wheel in response to improved infrastructure, accessibility, convenience, and safety; we should not expect that this increase would automatically lead to an increase in casualty rates among the more vulnerable transport user groups. We should be planning safe inclusive walking, cycling, and wheeling routes. Better information on who walks, cycles, and wheels, and how far, is needed to accurately ascertain casualty rates and levels of active travel among different population groups to improve accessibility, inclusivity, and safety.

(2) Health: improving road safety to reduce impact on public health services.

As well as focusing, rightly, on the burden of morbidity and mortality associated with road casualties, it is worth considering the health benefits and health economic value of getting more people to travel actively. A recent study[1] found that 50.2% of all active commuters in Scotland met a daily target of 30 minutes of moderate intensity activity in 2011. Additionally, the annual health economic value of pedestrian and cycle commuting in Scotland was estimated to be €780 million despite active commuters representing a relatively small modal share of all commuters (14.5%). Encouraging more people to walk, cycle and wheel to work from this modest base of modal share would provide even greater levels of benefits.

The consultation paper mentions 20mph limits favourably and so it is worth considering statistics in relation to the currently more common 30mph roads. In 2013-2017 over half (52%) of all road traffic casualties in Scotland were on roads with a 30mph speed limit. Of serious casualties on 30mph roads, 47% were pedestrians and 15% were cyclists; and of fatalities on 30mph roads, 63% were

[1] Baker G, Pillinger R, Kelly P, Whyte B. Quantifying the health and economic benefits of active commuting in Scotland. Journal of Transport and Health (under review) 2020.

pedestrians and 4% were cyclists[2]. So, it is clear 30mph roads are where the majority of the most vulnerable road users are seriously injured or killed. There is good evidence that 20mph limits backed up by enforcement and targeted communications can not only reduce casualties and their severity but, encourage more people to walk and cycle because it feels safer to do so.

(3) Speed Management: road users not travelling at appropriate speeds, its effect on road casualties

To reiterate, we support a 20mph limit in built-up areas across Scotland. The evidence from such schemes is that numbers of casualties and severity of injury are reduced at lower impact speeds; and more people walk, cycle and wheel in areas where traffic speed is lower because there is an increased sense of safety. The greater the reduction in average road speeds, the greater the impact. However, the effectiveness of reduced speed limits is dependent on effective enforcement of the speed limit and related communications to reinforce the message. In the absence of a national 20mph limit, local schemes such as in Edinburgh and that currently being piloted in the Borders can be effective.

(4) Road Users: unsafe road use by certain types of road users and its effect on road casualties.

In our study of cyclist casualties in Scotland (based on police-recorded Stats 19 data) we reported that over a 23-year period one-in-ten vehicles involved in a crash with a cyclist had not stopped, indicating a 'hit and run' situation. A further 1% of cyclist casualties in this period were the result of near misses (in which there was no direct impact between vehicle and cyclists, but which still resulted in a cyclist injury)[3]. Studies have shown that near misses are perceived by cyclists to be deliberate actions against them. This is further supported by a (2019) Police Scotland assessment which showed that driver error was the primary contributory factor in 63% of cyclist-driver collisions resulting in a fatality or serious injury[4]. On an international scale, driver attitudes surrounding cyclists are reportedly predominantly negative; and negative attitudes are found to be associated with self-reported aggression and hostility towards cyclists[5].

This perceived and real driver hostility towards cyclists is influencing a reduced desire to cycle and contributing to an increased perception of risk while cycling. Furthermore, this perceived and real risk when cycling is not shared equally: women report more near miss experiences compared to men; the consequences of being a cycling casualty are greater for older people and those with disabilities; and people living in the most deprived areas have higher exposure to road traffic risk: all of which can heighten inequalities in cycling uptake[6].

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[2] Whyte B. The potential impact of a 20mph speed limit on urban roads in Scotland. Glasgow: Glasgow Centre for Population Health; 2018.

[3] Young M, Whyte B. Cycling in Scotland: review of cycling casualties. Journal of Transport and Health (under review) 2020.

[4] Police Scotland Analysis & Performance Unit. Vulnerable road users assessment, pedal cyclists. Stirling: Police Scotland; 2019.

[5] Fruhen L S, Flinn R. Car driver attitudes, perceptions of social norms and aggressive driving behaviour towards cyclists. Accident Analysis & Prevention 2015;83:162-170.

[6] Sustrans Cycling for everyone: a guide for inclusive cycling in cities and towns. Sustrans: 2020.

It would be easy to conclude that increasing the number of cyclists on the road would result in equally higher rates of casualties. However, evidence suggests the burden of injury for cyclist-cyclist collisions and pedestrian-cyclist collisions is extremely low compared to vehicle-cyclist and vehicle-pedestrian collisions. Furthermore, countries with high rates of cycling have higher safety records for all road users[7]. Our study of cyclist casualties in Scotland showed that pedestrian casualties derived from a collision with a cyclist are relatively rare (1% of pedestrian casualties in the period 2014-2018)[8].

Evidence has also shown that pedestrian-cyclist collisions have a lower severity of injury compared with pedestrian-vehicle collisions[9]. Furthermore, international studies have shown that while collisions involving e-bikes are linked to increased severity of injury, e-bikes are no more likely to be involved in a collision compared to pedal bikes[10,11,12].

To support the new framework, we believe that improvements to the recording of road traffic accidents are needed. The current Stats19 system does not differentiate between pedal cycles (which is a reported category) and e-bikes, e-scooters or other similar two wheeled vehicles. As a result, there is both a lack of clarity about what vehicles are involved in crashes causing injury and an inability to illustrate any concerning trends in relation to such vehicles. Also, currently Stats19 does not record ethnic background meaning again that it is not possible to monitor accident and casualty trends for this equality group. These deficiencies need to be addressed in order to be able to monitor road safety statistics with more accuracy and to assess inequalities in transport casualties.

Question 5: Do you think the strategic actions will deliver the outcomes and address the identified challenges?

Yes.

We support the development of a national road safety improvement fund to help road authorities meet the challenging 2030 reduction targets although we argue that a fixed percentage of this should be dedicated to active travel. We also agree that ensuring road safety should be a key focus of active and sustainable travel, because these modes of travel involve vulnerable road users. If the shift to more active and sustainable travel is successful, then more people will be walking, cycling and wheeling on our streets and pavements in villages, towns and cities across Scotland. Design, accessibility, and safety standards for new cycling and walking infrastructure will need to be agreed in order that conflicts are avoided and safety and accessibility for all users, but particularly disabled

[7] Marshall W E, Ferenchak N N. Why cities with high bicycling rates are safer for all road users. Journal of Transport & Health 2019;13:285-301.
[8] Young M, Whyte B. Cycling in Scotland: review of cycling casualties. Journal of Transport and Health (under review) 2020
[9] Langley J D, Dow N, Stephenson S, Kypri K. Missing cyclists. Injury Prevention 2003;9:376-379.
[10] Haustein S, Moller M. E-bike safety: Individual-level factors and incident characteristics. Journal of Transport and Health 2016;3(3):386-394.
[11] Newson C, Sloman L. The case for a UK incentive for e-bikes. 2019. Transport for Quality of Life Ltd.
[12] Weber T, Scaramuzza G, Schmitt K U. Evaluation of e-bikes accidents in Switzerland. Accident Analysis & Prevention 2014;73:47-52.

people is prioritised. Early inclusive community engagement on new projects will be required to avoid potential conflicts.

We support actions surrounding climate and agree that smoothing traffic flow and good speed management can contribute towards reducing emissions and improving air quality.

From the perspective of safety for walkers and cyclists, we believe this requires reviewing appropriate speeds on Scotland's roads and reducing the speed limit to 20mph on roads in built up areas where there are likely to be pedestrians and where cyclists and motorised traffic share road space.

Question 6: Are some of these actions more important than others?

Yes.

In urban settings the safety and accessibility of new active travel infrastructure will need to be a key consideration. Reducing road speed, particularly in built up areas will protect vulnerable road users and encourage more people to travel actively.

Question 7: What are your views on the proposed 2030 interim targets?

We support the proposed 2030 interim target of "50% fewer deaths and serious injuries between 2020 and 2030" however we suggest that for cycling casualties, this target be measured using combined survey, and hospital- and police-recorded data rather than police-recorded data alone.

There is widespread evidence demonstrating that cycling collisions and near misses resulting in injury are significantly under-reported to the police. Consequently, police-recorded data does not reflect the true rate of collisions, near-misses and subsequently injuries that cyclists experience daily. In 2010, Transport Scotland presented 'truer' cycling casualty figures using combined hospital, survey, and police-recorded data. This report showed that police-recorded figures for cycling fatalities were accurate however the combined survey, hospital and police data for serious injuries were 104% higher than police recorded data; slight injuries were 109% higher, and the killed and seriously injured (KSI) rate was 93% higher[13].

Our report also showed that among cycling casualties, serious injuries increased by 34% between 2005-2018 and the KSI rate increased by 18% between 2004-2018 which may be (in part) attributed to the increasing number of cyclists in this period[14].

However, without reliable data on the number of cyclists and the number of miles cycled, it is difficult to determine whether this increase in casualty rates is due to increased risk (i.e. the environment has become less safe) or as a result of

[13] Transport Scotland. Reported Road Casualties Scotland. 2010.

[14] Young M, Whyte B. Cycling in Scotland: review of cycling casualties. Journal of Transport and Health (under review) 2020.

increased exposure (i.e. there are higher numbers of cyclists). Therefore, when measuring this interim target for cycling casualties we also recommend the need to collect accurate monitoring data on who cycles and how far in order to be able to calculate risk and monitor cycling prevalence at a population level.

Question 8: Do you think that the intermediate outcome targets and key Performance indicators are appropriate to monitor the progress towards the 2030 interim targets?

No.

Splitting the casualty related intermediate outcomes by mode will help differentiate safety issues relating to specific groups. However, measuring progress in terms of a percentage reduction in numbers of casualties alone is a crude approach.

A casualty rate related to exposure to risk would provide a more accurate and nuanced measure for any of the modes of interest. For example, in relation to cycling, if more people cycle for everyday purposes (commuting, exercise, leisure, meeting friends, shopping), which is one of the aims of transport policy, then potentially the number of cyclist casualties could rise. An alternative, or additional, measure would be to estimate cyclist casualty rates in relation to distances cycled or time spent cycling which would take account of any changes in the actual numbers of cyclists on the roads. This is essentially the same point that we included in answer to question 7 and would require enhanced survey data to provide estimates of distances or times spent cycling.

Question 9: Do you think that the proposed Governance Structure is appropriate?

Yes.

The governance structure makes sense. In addition to the bodies mentioned, we would suggest including an appropriate public health specialist at each level: on the Strategic Partnership Board, the Operational Partnership Group, and in each of the Local Partnership Forums. Such representation could support strategic decision making in relation to addressing health inequalities and safety issues and balancing risk. Public health representation on the Operational Partnership Group could specifically be helpful for monitoring, analysing and distilling evidence. We would also recommend community representation on the Local Partnership Forums.

Question 10: Would road safety performance be improved across Scotland as a result of systematically sharing information and best practice between local authorities and/or local regional partnerships through Local Partnership Forums?

Yes.

This sounds like a very sensible approach.

Question 11: In your opinion, what aspects of road safety work well at the moment?

We believe the introduction of 20mph speed limits across some towns and cities in Scotland is a successful example of road safety. Speed limits of 30km/h (the equivalent of 20mph) have been increasingly introduced in cities and countries across Europe to reduce road casualties and fatalities. In areas of London, the introduction of 20mph speed limits have contributed towards a 50% reduction in the number of children killed or seriously injured on the roads[15]. Slowing traffic creates a more level playing field between vulnerable road users and motorised traffic and is likely to increase the appeal of active travel as it reduces vulnerable road users' perception of risk. 20mph road limits are also a vital part of the solution to air pollution.

Evidence shows cars driving faster in built up areas produce more air pollution as they have to frequently speed up and slow down as hazards appear. Changes like this to the speed limit can improve quality of life by transforming streets, towns and cities into areas where people are happy to walk, cycle and wheel; which increases the safety, practicality, and attractiveness of active travel overall.

Question 12: What practical actions would you like taken to encourage and promote these aspects?

We believe that encouraging safe active travel would require increased and sustained investment in infrastructure and behaviour change.

Currently, the Scottish active travel budget of £100 million equates to only 3.3% of the overall transport budget and represents an annual spend of £18.30 per person. In order to successfully protect vulnerable road users, they must be placed at the top of the transport hierarchy. Thus, active travel must be prioritised over private motor vehicles and a greater proportion of the transport budget must be spent on active travel than is currently allocated. In contrast to Scotland, government spending on cycling infrastructure in the Netherlands (a country with high rates of cycling) has been almost €0.5 billion per year over the last few decades, which equates to an annual spend of €29.49 (£26.43) per person[16]. Meanwhile in the Dutch City of Groningen (which has the world's highest rates of cycling), government investment in cycling from 2015-25 was €85 per person per year[17]. Increasing the active travel budget to 10% of the overall Scottish transport budget would help bring Scotland in line with other European countries with high rates of cycling.

We supported the principles of the Safer Streets Bill, which the Scottish Parliament ultimately voted against in 2019. Based on a range of evidence we believe that a nationwide 20mph speed limit on local roads and in built up areas would work towards protecting vulnerable road users and encouraging uptake of active

[15] Grundy C, Edwards P, Armstrong B. Effect of 20 mph traffic speed zones on road injuries in London, 1986-2006: controlled interrupted time series analysis. BMJ 2009; 339.

[16] Fishman E, Scheperes P, Kamphuis C BM. Dutch cycling: quantifying the health and related economic benefits. American Journal of Public Health 2015;105(8):13-15.

[17] City of Gronigen. 2015. We are Groningen Cycling City: Cycling Strategy 2015-2025.

travel. This would require prioritising allocation of road space in towns and cities to active travel. Where 20mph speed limits are not possible, we believe that vulnerable road users should be physically separated from motorised traffic travelling at higher speeds (e.g. raised kerbs or segregated cycleways). This form of infrastructure would work towards counterbalancing the real and perceived risk of active travel, and increase its appeal and practicality, particularly among under-represented groups.

For example, a 2019 Cycling Scotland survey identified that dedicated cycle lanes, traffic-free routes, and less/slower traffic on roads would encourage everyday cycling[18]. In addition, a new segregated cycle path in Glasgow was praised for its safety, and users reported undertaking longer journeys and feeling more confident cycling during peak hours because of the new infrastructure[19].

Question 13: In your opinion, what aspects of road safety do not work well in general and as a result of Covid-19?

The Covid-19 pandemic and subsequent social distancing measures has created a greater dependency on motor vehicles. In the long term, there is a danger that the public may not return to public transport and active travel which contributes to greater transport inequalities not to mention concerns surrounding road safety and achieving emissions targets.

Question 14: What practical actions would you like taken to overcome these aspects?

To overcome the aforementioned concerns we echo our previous recommendations of placing vulnerable road users at the top of the transport hierarchy and improving the appeal and safety of active travel by: increased and sustained long-term investment in infrastructure and behaviour change; and a nationwide 20mph limit on local roads supported by enforcement and a targeted communication campaign.

[18] Cycling Scotland 2019. Annual Cycling Monitoring Report.

[19] Hewitt E, MacMillan K, Shaw L. The Kelvingrove-Anderston route: views of cyclists and pedestrians. Glasgow: Glasgow Centre for Population Health; 2015.