

Response to questions taken on notice from the Senate Joint Select Committee on Road Safety

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Associate Professor Jeremy Woolley and Dr John Crozier

Combined Response

Questions taken on notice:

Further background to the estimate of road safety \$30 billion cost to the economy

There have been several analyses in past years estimating the cost of road trauma to the economy (BITRE 2009; Tooth 2010; Litchfield 2017; AAA 2017). The Bureau of Infrastructure, Transport and Regional Economics and its predecessors have released infrequent reports back to 2000 with economic modelling of road trauma. The Human Capital Cost method (the individual as a productive entity) has been a dominant methodology for estimating the costs of road safety and is still in widespread use for transport infrastructure and safety assessments. The Willingness to Pay method (individual willingness to pay to reduce risk to life) has found increasing application in road safety in Australia and tends to result in human loss estimates much higher in value. Many argue that the Willingness to Pay method is in line with international practice and more appropriate for safety assessments. There is much background to the adoption of more appropriate Willingness to Pay values in Australia that the Joint Select Committee might like to investigate further with BITRE, Austroads and others.

The last major BITRE report on this topic was released in 2009 based on modelling for the year 2006. The social cost of road crashes was estimated to be in the order of \$17.85 billion representing 1.7 per cent of GDP. Human losses using a hybrid Human Capital Cost method accounted for 61.5 per cent of the total cost of crashes.

The Australian Automobile Association (2017) produced a report estimating the costs of road trauma using the Willingness to Pay methodology of BITRE (2009) and a methodology from the Australian Government Office of Best Practice Regulation. For the 2015 calendar year, the total cost of road trauma was estimated to be \$29.7 billion incorporating costs associated with:

- Life, health and wellbeing
- Hospital, medical, paramedical
- Disability care
- Vehicle damage
- Efficiency of raising revenue
- Insurance administration
- Travel delay
- Emergency services
- Vehicle unavailability
- Health cost of crash-induced pollution

- Workplace disruption
- Legal
- Correctional services
- Street furniture damage
- Coronial
- Funeral

The cost of each fatality was \$4.34 million and the cost per hospitalisation was \$239,000. The direct costs to government was estimated to be more than \$3.7 billion incorporating:

- Taxation and income support
- health services
- emergency services
- vehicle related costs
- legal and other
- disability care

Litchfield (2017) performed an analysis using the Willingness to Pay method also based on a raft of background cost variables. For 2016 the total social cost of road crashes was estimated to be \$33.16 billion made up of \$9.38 billion in property damage costs, \$10.2 billion in fatality costs and \$13.58 billion in injury costs. This equates to 2% of GDP.

Regardless of the methodology used, the enormous scale of the problem is evident. Aside from the individual, family and community impact of road trauma, there is a massive drag to the economy which with current approaches has no end in sight. The moral, ethical and economic arguments for responding at a scale capable of making a difference are compelling.

What data should be collected at the national level?

A new suite of KPIs is required that can adequately measure strategy inputs against outputs and determine how interventions are working towards the long term elimination of harm. The KPIs would consist of many intermediate measures and reflect how the system is being made error tolerant and survivable.

Much of the strategic approach in Australia has been based on fatality data as that was the most accurate and readily available information from which decisions could be made. Even so, the national database is constrained by non-uniformity in definitions and datasets and the conditions placed upon use of the data by each jurisdiction makes for a very sub-optimal system.

The situation with injury data is far worse and it is noted that an Austroads project is finally reaching a significant milestone in 2020 by achieving the first national serious injury snapshot. While this is to be applauded, as far back as 2011 the National Strategy noted this activity as a high priority and there is much to still be done to overcome constraints and restrictions on the data supplied, timeliness of supply, accuracy and gaps, and the conditions on its use.

The nation should aspire to gaining the sort of insights achieved through data linkage as demonstrated in recent years in NSW. In that state an ongoing program of linkage and refinement is undertaken so that injury information is also capable of informing investment decisions in relation to road safety policy and investment programs. NSW has also achieved a degree of transparency with its data by making information on system risk accessible online.

Although reductions in death and injury are the ultimate objectives, much more work needs to be conducted on establishing intermediate measures so that actions under the national strategy can be monitored and assessed. Ideally, metrics that ultimately describe the ability of the system to reduce harm will be the most useful for placing focus on where it is most needed. This is not a straightforward task and will require ongoing development and refinement over the life of the strategy. It should also be borne in mind that metrics that are not yet measurable could well be made to be measurable during the life of the strategy.

Section 5 of the 2018 Inquiry report contains discussion on KPIs for the next strategy (Woolley and Crozier 2018). Some important concepts include:

- exposure data for all users of the system (not just drivers and motor vehicles)
- numbers of certain injury types including brain and spinal injuries and ongoing support for the National Trauma Registry
- AusRAP, ANRAM or equivalent risk ratings for the road network including State, Territory and Local Government roads
- vehicle fleet risk profile extrapolated from ANRAM ratings for passenger cars; a methodology also to be developed for heavy vehicles; distribution by metro / regional
- road trauma and work related activity
- performance of corridors with new infrastructure investment
- KPIs that reflect management performance and capacity building
- enforcement input (what is new or has increased, what is sustained, what has dropped off)
- prevalence snapshots: travelling speed; fatigue; distraction; drink driving; drugs
- ongoing percentage reduction relative to the quantum of high risk locations or corridors
- number of innocent victims (ie those deemed not at fault) being fatally or seriously injured

Sweden took a very pragmatic approach with KPIs that reflect key milestones on its journey to zero. There are numerous references to the approach that can be found in the literature. The following tables provide some good examples of objective driven indicators. (Johan Strandroth Pers Comm and Swedish Transport Administration 2012). Australia would do well to replicate the strengths of the Swedish approach.

Indicator	Starting point	2014	Target for 2020	Trend
Number of road traffic fatalities	440	270	220	In line with the required trend
Number of seriously injured	5 400	4 900	4 000	Not in line with the required trend
Share of traffic volume within speed limits, national road network	43 %	46 %	80 %	Not in line with the required trend
Share of traffic volume within speed limits, municipal road network	64 %	63 %	80 %	Not in line with the required trend
Share of traffic volume with sober drivers	99,71 %	99,78 %	99,90 %	Not in line with the required trend
Share of front seat passenger car occupants wearing a seat belt	96 %	97 %	99 %	In line with the required trend
Share of cyclists wearing a helmet	27 %	37 %	70 %	Not in line with the required trend
Share of moped riders using a helmet correctly	96 %	96 %	99 %	Not in line with the required trend
Share of new passenger cars with the highest Euro NCAP score	20 %	57 %	80 %	In line with the required trend
Share of safe motorcycles (ABS)	9 %	39 %	70 %	In line with the required trend
Share of traffic volume on roads with speed limit above 80 km/h and median barriers	50 %	73 %	75 %	In line with the required trend
Share of safe pedestrian, cycle and moped crossings on main municipal road networks	19 %	25 %	Not defined	Cannot be assessed
Share of municipalities with good-quality maintenance of pedestrian and cycle paths	15 %	No measurement in 2014	70 %	Starting year for the measurement in 2013, no measurement in 2014 – cannot be assessed

Area of intervention/measure	Potential Fatalities in 2020	Potential, very severe injuries (RPMI 10 %) in 2020	50 % reduction in number of fatalities	40 % reduction in number of very severe injuries (RPMI 10 %)
Speed limit reduction, municipal roads, 3 %	3	21		
Municipal speed limit reduction, 5 %	5	35	5	35
Municipal speed limit reduction, 8 %	8	55		
Speed limit reduction, state-owned roads, 3 %	11	26		
Speed limit reduction, state-owned roads, 5 %	18	42	22	51
Speed limit reduction, state-owned roads, 8 %	27	64		
Replacement of all vehicles, alternative 1	8	11	6	8
Replacement of all vehicles, alternative 2	17	13		
100 % New motorcycles equipped with ABS, 2015	1	3	1	3
Divided roads with lower circulation	3	0		
Better guard rail protection when the speed limit is 80 kilometres per hour or higher	3	8		
GCM ⁷ crossings with speed bumps, 50 % of those with functional road classification 3-5		3		
GCM ⁷ crossings with speed bumps, 80 % of those with functional road classification 3-5		5		
GCM ⁷ crossings with speed bumps, total	3	11	2	8
Breath alcohol ignition interlock device programme	0	x		
Unguarded level crossings secured	2	2	0	
Reconstruction, turn-offs and backing up	6	4	3	2
Use of seat belts	14	38	4	18
Safe intersections, state-owned road network	18	28	0	0
Safe intersections, municipal road network	1	26		10
Increased percentage of sober road users	31	31	9	9
Proper helmet use, motorcyclists		8	0	0
Proper helmet use, mopedists	1	5	1	3
Proper helmet use, bicyclists	6	29	3	14
Tuned moped	2	x	1	1
Fatigue	11	x	2	6
Distraction/visibility	59	x	3	9
Extreme behaviour	27	x	0	0
Driving licence/illegal driving	15		5	
Summer road maintenance of GCM ⁷ paths		18		10
Winteroperation of GCM ⁷ paths		7		4
Construction of municipal GCM ⁷ paths	5	20		6

⁷ Abbreviation for pedestrian, bicycle and moped.

Finally it is also important to not overlook the importance of celebrating and promoting successes under the strategy and adequate data will make this task much easier and build the necessary confidence to continue to push for change. Equally as important is also communication regarding what does not appear to be working.

What vehicle technologies should the Commonwealth mandate?

The Commonwealth performs a critical safety role in setting the standard of safety for vehicles in Australia. The past achievements of the Commonwealth in contributing to the safety of vehicles and at times conducting world leading initiatives are acknowledged. While a certain legislative framework is in place regarding the adoption of vehicle standards, we feel there ought to be a stronger aspiration to find ways that safety technologies with demonstrated potential can be adopted as early as possible to maximise the safety benefit for the community. The roles served by both the Australasian New Car Assessment Program (ANCAP) and government regulation are viewed as critical however we are of the opinion there is much potential to broaden the scope of both to cover gaps in the system.

With its November 2019 Communique, the Transport and Infrastructure Council noted that it will *“endeavour to align Australian regulations with the proposed European regulatory package to commence within a similar timeframe”*. Much more assertive action is required to ensure that safety is indeed maximised for the community especially as the global pace and volume of safety technology development accelerates.

The European Union (EU) has already established a roadmap in relation to a regulatory package that will mandate across 16 types of safety technologies from 2022. The homework has been done and the equivalent to Regulatory Impact Statements have been conducted. The EU action is estimated to have the potential to save over 24,000 lives and avoid over 140,000 severe injuries by 2038. Australia has a grand opportunity to follow the EU initiative and not delay the accrual of benefits.

Reference documentation for the safety technologies can be found at the following links:

https://ec.europa.eu/commission/presscorner/detail/en/IP_19_1793

<https://ec.europa.eu/docsroom/documents/34588/attachments/1/translations/en/renditions/native>

In terms of gaps in the system, the Office of Road Safety can perform a crucial role in coordinating a response through regulation, ANCAP, the National Heavy Vehicle Regulator, the Australian Competition and Consumer Commission or otherwise. Considerable gaps still exist in relation to:

- Motor vehicle safety (light commercial vehicles lagging behind passenger cars)
- Heavy vehicle safety (vehicle side under-run protection, AEB, LKA and stability control, regulations that inhibit safety uptake)
- Motorcycle safety (AEB had a long lead in time)
- Vehicles with poor safety ratings still entering the Australian market
- Cyclist protection
- Overlap and reactionary responses within the ACCC consumer domain (quad bikes, ‘Monkey bikes’, mobility scooters, eScooters etc)

Should speed Management initiatives such as Point to Point be included on Commonwealth funded projects?

In principle, yes. The provision of infrastructure under the safe system means that compliance and post-crash components also need to be integrated and not treated separately. Automated enforcement will hold great potential into the future and one can expect that monitoring points in the network could perform multiple tasks including registration checks, speed compliance, red light running, mobile phone use and fatigue monitoring all using the one device. Future KPIs should include a measure of how the road design and operation on road corridors might ensure safety through compliance.

Is there a standard to which roads are built?

The short answer to this question is yes. The engineering profession adheres to national standards and jurisdiction specific guidelines when planning, designing, operating and maintaining the road system. The reality however is that people are still getting killed and injured on roads designed in this way as the roads are not forgiving of error and are unable to offer much protection when things go wrong. Unless specific types of safety experts become involved, projects are still likely to suffer from large gaps in Safe System safety application across State and Territory road agencies, Local Government, and private sector consultants.

Austroroads has also worked hard in recent years to socialise a knowledge base and increase awareness and engagement with practitioners including webinars and online content. However Austroroads can only offer guidance and advice but cannot dictate spending or the practices actually adopted. The scale of change required also poses certain challenges.

A conclusion reached in the 2018 Inquiry report (Woolley and Crozier 2018) is that sub-optimal results are unintentionally being achieved because there is not an explicit focus on harm elimination:

- Most large scale projects are governed by a mobility and productivity agenda and an improvement in safety is assumed to occur
- Safety is still frequently postured as a trade-off against other competing demands rather than being the initial condition for which the project should proceed
- The innovation required to pursue safety solutions is often not perceived as an easy pathway for engineers to follow

To answer the question that logically flows from this discussion – why do current standards and guidelines not equate to a safe road transport system?

Fundamentally there is a lack of focus on harm elimination solutions. Road authorities continue to make roads safer but frequently miss the opportunity to make them SAFE outright. To do so requires coordination across all the pillars of the Safe System with the acknowledgement that the majority of infrastructure treatments will still have a residual of death and injury associated with their use. We must continue to ask how in what way are our efforts making roads more error tolerant and survivable. The true litmus test is if anybody can still inadvertently harm themselves or others through use of the system.

Adoption of 2030 interim targets by jurisdictions and any successes?

It would be fair to say that the commitment to harm elimination within a given timeframe has only recently been picked up by jurisdictions. As the evidence base evolves regarding the steps and scenarios required to achieve zero, some agencies are now starting to take the longer-term strategic modelling more seriously.

Most jurisdictions are still locked into 10 year strategies or strategy development processes and have only pursued target setting and actions that address the situation at the end of those 10 years. Virtually all now do have an expectation of a longer term journey to actually converge on zero but not many have declared a date publicly.

NSW was one of the first jurisdictions to nominate zero harm by 2056 and notably also include its vision in its long term transportation planning strategy.

To date we are not aware of any successes regarding such interim targets however the road system has tended not to be analysed from a harm elimination perspective. We suspected that currently many situations can be identified where there is convergence towards zero deaths in parts of the system including school zones, urban areas with traffic calming and some road corridors with high levels of barrier protection.

An example of modelling in support road safety strategy development and target setting in Norway can be found in Elvik and Høy (2020). Similar activities are being replicated in many of the Australian jurisdictions.

References

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