
A Reflective
Submission to the
Woolley & Crozier
Inquiry into progress
under the Australian
2011-20 NRSS and
2015-17 Action Plan

a hierarchy of objectives &
human error mitigating features

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EXECUTIVE SUMMARY

Overview of Road Safety in Australia

- a Australian road traffic injury prevention has been successful in bringing the fatality rate down significantly over the last few decades. The challenges ahead include: a) speeding up the rate of reduction of road deaths and serious injury in successful jurisdictions (the Australian Capital Territory, Victoria, New South Wales and Queensland); and b) reversing the trend in other less successful jurisdictions (Western Australia, South Australia, Tasmania and the Northern Territory) to align their road death and serious injury trends with the national average.

Current Road Safety Management Approaches

- b Australia adopts a top down approach in its development of the National Road Safety Strategy (NRSS) and the supporting Action Plan (AP). In this approach, the identification of issues and priorities precedes the development of activities for tackling the priorities.
- c This approach is limiting, counter-productive and potentially disenchanting. It fails to hold any part of the system accountable for the failures to achieve the ultimate goal of reducing road deaths and serious injury by an ambitious percentage (see the Australian 2001-10 NRSS). It has no intermediate objectives attached to the activities, nor does it have any sense of the extent to which any of the activities can be said to be an indicator of the objectives. It is unknown, for instance, the actual gains in terms of lives saved by each of the activities in the Action Plan.
- d Therefore, a new approach is required as suggested by the former Infrastructure and Transport Minister, Darren Chester, at the time of the launch of the present inquiry (8 September 2017).
- e The new approach must be:
 - i. radically different from the present focus on road user behavior,
 - ii. bottom-up oriented, with local governments & relevant stakeholders contributing significantly;
 - iii. jurisdiction-specific with statutory lead agency in some;
 - iv. built through a hierarchy of numeric objectives, which start at grass-roots;
 - v. constructed through the identification of indicators of these objectives; and
 - vi. capable of holding the road designers and road users accountable for road deaths and serious injury.

Summary of Recommendations

- a. Modify the definition of the Safe System principle to move it closer to the Sweden's vision zero where both the road designer and the road user share responsibility for reducing road deaths and serious injuries.
- b. Combine the vision zero approach used in Sweden towards road construction, maintenance and management, with the Norwegian management by objectives in the design of the new NRSS.
- c. In Victoria (Vic), New South Wales (NSW), Queensland (Qld) and the Australian Capital Territory (ACT), work closely with communities of practice (i.e. motorcycle associations, bicycle Australia, Pedestrian Council, etc.), industry (i.e. businesses), academics, post-trauma care services and the community at large (i.e. citizens eager to contribute to improvements in the road safety in the existing and future road network e.g. petition instigators etc.) to identify emergent risks to road use and modify the laws, the guidelines etc. to ensure safety of road users takes precedent over policy and public administrative routines, and secure sufficient resources for road upgrades.
- d. In Western Australia (WA), South Australia (SA), Tasmania (TAS) and the Northern Territory (NT), enact a law which names a lead agency as the enforcer of this law. The law must call for the civic rights of all road users to be protected. The lead agency must have clear mandates to demand upgrades on the road network, vehicle fleet and road user behaviour enforcement. The lead agency will control and coordinate all activities identified through expert and community consultations as sufficiently robust to fulfil the numeric goals identified by an examination of the current indicators of road deaths and serious injury and the identification of realistic goals (e.g. vehicles veering off the road and hitting objects may be found to represent one-third of the fatal crashes, then the numeric goal may be to reduce this to less than one-third initially or to a quarter in the first five years of the next NRSS).
- e. The Federal government must distribute resources, cut taxes to fleet management practices which enhance safety, remove tariffs on vehicles with the highest safety features, promote the retrofitting of old vehicles with new safety features and establish a mechanism to hold the States and Territories accountable for the national average tally.
- f. For instance, the first task (safe roads) in the Action Plan 2015-17 refers to the adoption of improvements for road design, construction and operation to reflect Safe System principles.

This should have a current status of the adoption of the Safe System principles in the design, construction and operation of the road network. The numeric goal would be to increase this current status by a specific percentage by a certain temporal horizon. The *National Road Safety Strategy 2011-20 Implementation Status Report* (November 2016) does not allow a sense of numeric progress to be gained. Just how much of the road network is now being operated under the Safe Systems approach is not known. Furthermore, this report focuses excessively on crashes. It needs to emphasise saving lives. This means focusing on the reduction in the sorts of actions which lead to crashes such as lane departure, veering off the road, failing to brake in an emergency etc. These are the indicators of head-on collisions, intersection crashes etc.

- g. The Appendix in this document suggests a process for developing local Action Plans.
- h. The annotated bibliography in this document presents further literature on some of the key themes used herein.

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TRANSMITTAL LETTER

Prof. Jeremy Woolley

Dr. John Crozier

By e-mail: roadsafetystrategy@infrastructure.gov.au

Dear Professor Woolley and Dr Crozier,

As an independent road safety management consultant, I welcome the invitation to make a submission to the inquiry into progress under the Australian 2011-20 NRSS and 2015-17 AP ('the inquiry'). Indeed, it gives me great pleasure to submit my specialist perspectives on the issues associated with the four terms of reference of the inquiry.

This submission provides insights from two perspectives – i.e. policy design and strategy development. It should be viewed as one side of the views to be collected by the inquiry. Additional insights should emerge from industry and service providers such as first responders and post-trauma care workers in relation to the implementation of life saving activities carried out throughout the road traffic injury prevention chain.

I wish the inquiry success in the challenging task of providing the Minister of Infrastructure and Transport with a concise report on the key issues, which once addressed will provide the necessary impetus for action in reducing road deaths and serious injury in Australia.

I look forward to reading a draft copy of the report for feedback.

Yours sincerely,

Joao Canoquena, PhD

23 February 2018

SUBMISSION AUTHOR

1. Dr. Joao Canoquena earned a PhD in Road Safety Management in 2017, specialising in systems thinking, coordinated road safety strategies at a local level (OECD and Australia) and public approval.
2. Dr. Canoquena has had studies into coordinated road traffic injury prevention action at a local level and integration (whole of government) published in peer-reviewed journals and presented at the Australasian Road Safety Conference (2015).
3. Dr. Canoquena is an academic journal reviewer and an independent road safety management consultant. Currently, Dr. Canoquena is a visiting fellow at a prestigious Australian university.
4. Dr. Canoquena's interest in management of road safety stems from his completion of a Master of Business Administration and recent work in the Central West of NSW as Road User Safety Project Officer.

INTRODUCTION

1. The Woolley and Crozier inquiry was outlined and set out by the Federal government of Australia (Department of Infrastructure and Transport) in late 2017. Former Minister Darren Chester, in his media release dated 8 September 2017, outlined some of the keywords for the inquiry such as ‘safer system’; ‘making our roads safer’; ‘too complacent’; ‘not accept[ing] ... \$30 billion a year ... [as] a price for a modern transport system’; ‘new ways to reduce road fatalities and serious injuries’; and ‘[the purpose of the inquiry was said to also be] ‘to inform future road safety investment decisions’. Minister Chester also indicated that the inquiry would inform policy direction, service delivery and post-trauma care through consultation with those on the field.
2. Minister Chester’s words appear to be code-words for a call for reform, a novel approach, and a fresh new management style. Ultimately, the inquiry represents a search for a game-changing approach.
3. The terms of reference for the inquiry into progress under the National Road Safety Strategy (NRSS) 2011-20 set out four tasks, which are to be considered within the context of recent (2015-16) upward road crash trends in Australia. These activities were determined as follows: the
 - a) identification of the main road death and serious injury contributing factors;
 - b) review of the extent to which the two main mechanisms for managing road safety in Australia are effective;
 - c) identification of issues and priorities for future planning; and
 - d) establishment of best practices for the actual management of the national strategy.
4. Whilst the first three tasks would require a more structured process of professional stakeholder consultation to establish evaluation metrics and arrive at actionable and consensual conclusions, the last one (d) is more amenable to general public contributions. This is so because the first three tasks refer to potentially factual, observable experiences.
5. The second and the third terms offer a new way of approaching road safety management in Australia, although some accompanying, specific questions could have allowed a more consistent way of looking at the two tools (i.e. the national strategy and its supporting action plans as well as key issues). The approach adopted to formulate the abovementioned terms is novel on two grounds. Firstly, the second term implies a need to question or at least review the

validity of the two managerial tools (NRSS and AP) in yielding desirable outcomes when it comes to road traffic injury in a competitively federalist system of governance. This should allow other instruments to be considered including, perhaps, statutory bodies to operate as lead agencies in States or Territories where road trauma has consistently been on the rise.

Secondly, the third term begins the process of developing the next national strategy in a way not seen in the past. In other words, rather than having ministers and heads of departments propose issues and priorities after a brief period of consultation with key academics and industry stakeholders, the new approach starts off with public consultation. This is novel and welcome.

6. This submission starts with an executive summary, which provides a high level description of the author's perspectives. The introduction in this section is followed by key author's reflections, detailed recommendations (structured around the terms of reference), key points, an annotated bibliography, and the appendix.

SUMMARY OF KEY REFLECTIONS

1. The inquiry is a welcoming development and represents a positive step in the right direction as it signals a departure from previous strategy development approaches.
2. Source after source from the National Road Safety Partnership to the Department of Infrastructure and Regional Development identify road user risky behavior (e.g. fatigue, speeding, drink-driving, driver distraction, unrestrained occupants etc.) as the most common factors contributing to deaths and serious injury on Australian roads. The actual specification of which source says what is irrelevant for the present exercise as it is not intended to be a reproduction of existing material, but a reflection on existing information and views. Suffice it to say that the most widely quoted sources in Australia (the Federal Department of Transport and Regional Development, NSW Road Safety Centre, VicRoads, Australian Bureau of Statistics and the Police) in the ‘management’ (the Australian Bureau of Statistics excluded) of road safety appear to concur with the aforementioned common contributing factors. This is despite a slightly more circumspect view taken by the Australian Bureau of Statistics (ABS). This institution tends to urge caution in the analysis of road death causation factors, acknowledging both the crash involvement of a myriad of factors and the challenges in singling any of them out in causation considerations. The data surveillance practice in Australia seems to justify this cautious approach too. In recording the involvement of alcohol, speed, fatigue, unrestrained seat usage etc., first responders (mostly the Police) do not necessarily suggest that involvement means causation. This is often established much long after the first response through coroner’s investigations in those cases required by the law (i.e. suspicious deaths). All other cases (the vast majority of cases not referred to a Coroner) for which a behavioral factor has been said to have been involved can only be understood as having had the involvement of such factor (as opposed to having been caused by it).
3. The less publicised views associated with road safety in Australia, those of communities of practice (i.e. associations, citizens signing petitions and academics), tend to move away from the risky behaviors listed above. Instead, the community, associations and other institutional stakeholders such as academics and professionals (i.e. road engineers, road safety auditors, consultants etc.) in Australia appear to gradually be identifying system-based contributing factors such as questionable focus on vulnerable road users (e.g. the 2011-20 NRSS only seems to use the word bicycle twice), road engineers’ failure to factor road user safety into

road design, narrowly defined legislative reforms (failing to account for broader issues such as mobility, active transport initiatives, the non-removal of obsolete wire rope barriers, poor quality of the roadways, car dominance, car dependency etc.), failure of legislation to impact significantly on road use (e.g. helmet laws), lack of (and even removal of) incentive for children to walk to school, poorly positioned and/or maintained wire barriers, road network designers and managers' budgetary constraints, apparent revenue-raising preference, weaknesses in the speed camera program, political interference in data surveillance, data surveillance scope limitations, over emphasis on enforcement, unmeasured programs, undefined accountability for road designers, lack of leadership, lack of transparency in modelling and policy choices, jurisdictional differentiation, low reliance on technology for enhancing road safety, funding cuts to community programs, lack of incentives for the purchase of vehicles with the most recent safety features etc. Admittedly, the extent to which these policy design and strategy implementation factors contribute to road deaths and serious injury may be difficult to establish.

4. Paradoxically, system-based contributing factors do not appear to be recorded (or at least not widely reported in Australia) in most statistics (or even the raw data) beyond lighting and environmental conditions. This weakness in the road safety data surveillance system is akin to having missing data in a dataset. The results of data sets with a wide range of missing values can represent unreliable and/or misleading conclusions. In this respect, it would be instructive to understand the number of fatal crashes in which vehicle safety and/or road safety features failed to meet international road safety standards for crash outcome mitigation. The suggestion made herein is not intended to diminish the road user responsibility for crash causation. Instead, the inference is that a more informed approach to the establishment of the factors contributing to road death and serious injury is required. This approach should not be biased towards human factors. It should also include the extent to which the road network and vehicle fleet can become more forgiving of human error.
5. The current road safety management tools (i.e. the NRSS and its supporting AP) are too broad to impact on local, regional road trauma. Therefore, more participatory, bottom-up jurisdiction-specific approaches must be adopted to reform the way road traffic injury prevention is managed in Australia.

6. Due to its competitive federalism, which gives the States and to a degree the Territories autonomy, Australia may not be the ideal environment for a one-size fits all approach in road safety management. Not all jurisdictions appear to require a lead agency or tightly planned strategies. Some (ACT, Vic, NSW and Qld) may continue to do well in terms of road trauma reduction under a network-based approach, which empowers the industry and the community to deliver road trauma mitigation, machine handing and self-awareness skill building, and restorative justice through enforcement.
7. The version of the Safe Systems principle adopted in the Australian 2011-20 NRSS appears to have removed the responsibility of the road designer and manager for ensuring that the road network is forgiving of human errors.
8. There seems to be an emphasis in the NRSS and other community-based road safety strategies upon behavior changing through attitude-shifting approaches. In some instances, this may be done to the detriment of more cognitive approaches such as rehabilitation, which may need to be made mandatory and conducted in a manner so as to reduce recidivism (e.g. restorative justice in Norway).
9. Road traffic injury prevention is viewed as a civic right in Sweden. In other countries it is a public health priority. Australia may need to decide how road deaths and serious injuries can be elevated to a human development and civic right issue. This conceptualisation should feature in the next iteration of the NRSS.
10. The identification of issues and priorities before the development of activities/actions represent a management approach with a number of shortfalls. It does not identify a hierarchy of objectives nor does appear to have sufficient accountability built into it to cause any significant changes on the ground to occur.

DETAILED RECOMMENDATIONS

Factors contributing to Road Deaths and Serious Injury

- a In relation to the ‘causes’ of crashes, it may well be true that risky behaviors cause crashes. However, more information needs to be widely available in relation to the findings of Police investigations of crashes in order to establish whether risky behaviors are only the broad, underpinning cause or if more specific causes existing such as machine handling ability weakened by speeding or being under the influence or even spacial disorientation due to fatigue, not to mention the reduction in hazard avoidance ability due to distraction. These more specific causes are otherwise called human errors (and lapses in judgement). So how is the Australian system accounting for human error and mitigating it?
- b The set of variables used for recording crash information may need to be widened to include both risky behaviors and system-based failures in the provision of mitigation.
- c The statistics must also have some sort of recording for each crash on the involvement of risky behavior (i.e. speeding, driver distraction, drink-driving, drug-driving, unrestrained car occupants etc.) and system-based factors. For each crash, whenever possible, the actual actions which led to death and serious injury as well as the specifics (i.e accessibility, response time, availability of first aid, first aid provision etc.) of the post-trauma care must be recorded.
- a The road safety stakeholders (i.e. politicians with road safety portfolios, government departments with responsibilities associated with road safety, road traffic injury prevention and road safety management academics, road network safety and road user safety industry operators, relevant associations and all road users) must re-frame the issue of road trauma in Australia from a road user risky behavior to specific death and/or serious injury-causing human errors. These errors include, but are not limited to: lane departure, spacial disorientation, accidental acceleration, veering off the road, failure to apply brakes timely, inappropriate opening of the door, insufficient gap in overtaking pedal cyclists and motorcyclists, loss of vehicle control etc. The mitigation of these errors must be planned for, monitored, adjusted to the highest level and reported upon periodically.

Effectiveness of 2011-20 NRSS and 2015-17 Action Plan

- a Modify the definition and description of the Safe Systems principle in the NRSS and the AP to ensure it emphasises saving lives on the road by building human error mitigating features into the road network.
- b Create a government decree or some other instrument, which can be relatively easy to amend (as opposed to a law), to describe the way the NRSS is managed, reviewed, improved upon and reported at the end of the 10-year period, ensuring that inquiries such as the present are conducted every two years and inform the jurisdiction-specific AP reports.
- c Modify the current format of the Implementation Status Report to focus on indicators of the numeric objectives identified in the Action Plans. In this respect, this report should report on such indicators as percentage of vehicles veering off the road, percentage of lane departure events etc. These are the causes of death. Reporting on the number of deaths by crash type may still be helpful. These would be viewed as outcome variables. In other words, there is presently limited information on the observable factors which cause road deaths and serious injury. Failure to apply brakes, loss of control of vehicle etc. must be reported regularly as the lead factors causing road deaths and serious injury.
- d Develop, in a collaborative manner, a framework for the evaluation of the NRSS and its jurisdiction-specific APs with clear 2-yearly intermediary goals (phrased as outcomes for all facets of road safety or some forty-five plus factors including message recall, message support, restraint usage, lane departure, etc.. The implementation status reports about the jurisdiction-specific AP at the end of the 2 year period should capture the extent to which the system is mitigating deaths and serious injury. In other words, the reports should address the following questions (amongst others): a) how much of the road network has become forgiving of human errors?; b) how much of the vehicle fleet has become forgiving of human errors?; and c) how many human road use errors and lapses of judgement are being reduced ?; and d) what are the trends in road deaths and serious injuries (what are people still dying and becoming seriously injured of?)
- e Make the NRSS a resource-allocation commitment document for the various strategies presented by the States, which would represent summaries of local council APs. This document should capture the broad commitment by all jurisdictions to save lives on the road

by all means at the government's disposal. This document should call upon all administrations to be responsive to community requests for the need to build additional safety into the road network, even if this means having to change guidelines.

- f The local council APs should represent action plans developed in consultation with communities of practice (note that most communities of practice such as the Australia Automotive Association, Cycling Australia etc. have their own road safety plans as do local councils).
- g A grass roots approach should be adopted in which the various, local level players create action plans based on the principles of human road traffic errors (e.g. there is only so much trauma the human body can tolerate, no person should pay for their errors with their lives etc.), rehabilitation through the enforcement system, general deterrence (mass advertising, unpredictable police action and swift court orders), and social learning (modeling good behavior and appeal for moral responsibility to protect the welfare of all on the road). The local councils would then build their own APs with support of the communities of practice, industry and the community. These local action plans should contain numeric targets for all major human error mitigating approaches and the potential lives saved (meaning reductions in deaths and serious injury).
- h The local action plans should inform the national road safety strategy, which should not have a national target (not all OCED countries have fatality reduction targets at a national level e.g. Switzerland). Switzerland's fatality rate (as at 2015) stood at 3.3 per 100,000 population. Norway has the reduction of an actual number of deaths and serious injuries as a target (i.e. less than 500 deaths and serious injuries by 2024). Australia should have ambitious, local targets (e.g. 50 per cent reduction in road deaths and serious injuries by 2030).

Issues & Priorities

- a Widen the scope of the approach in road user engagement to include their skills, knowledge as well as attitudes, ensuring a) more road users become ambassadors of safe and responsible road use, b) machine handling skills are built into existing road use, c) self-awareness (e.g. what it feels like to be under or below the BAC limit, how long alcohol stays in one's blood system etc.) becomes part of everyday life for road users and education campaigns, d) road

users understand their limitations and the sorts of human errors risky behavior lead to, and e) the community views penalties as beneficial rather than revenue raising and behavior restricting;

- b Create or make it a mandatory the creation of lead agencies in States known to struggle with road trauma (i.e. WA, SA, TAS and NT), ensuring the lead agency is a statutory institution (see WHO reports on global road traffic injury prevention) with accountability to the Parliament and the people of Australia.
- c Support jurisdictions with a positive track record (i.e. low fatality rates, large proportion of the road network has recently passed road safety audits and the road network is known to have world class human error mitigating features) in road trauma management to base their Action Plans on networks rather than lead agencies. The ACT, Vic, NSW and Qld may wish to consider this approach, empowering community groups and industry to deliver life saving strategies.
- d Focus on saving lives. Reduce the emphasis on crashes. Put otherwise, assuming that crashes will occur (although this is never acceptable), build mitigating features into the whole system (the vehicles, the roadsides, the roadways etc.).

Future Management of Road Safety

- a Enact a law (with the requirement for the creation of an institution or the right of an officeholder to nominate such institution to enforce the law, penalties and recourse for appeal for offenders) related to the need for road network design, construction, maintenance and operation in Australia to be conducted in line with and be demonstrably influenced by the principle of *human error mitigation*;
- b In the new law, establish mandatory reporting of the levels of road crash forgivingness of the road network (i.e. the reporting of the sections of the road network with world class safety features which mitigate for human error) and make it an ongoing concern for road managers to continue to monitor and improve the safety features of the road network;
- c Indicate in the future NRSS the accountability framework (set of institutions and officeholders) responsible for the safety of the road network, clearly delineating the circumstances under which there will be an investigation of the extent to which the road

designer and manager may be held accountable for the road network failures, in so far as these failures are found to have contributed to road deaths and/or serious injury;

- d In States or Territories where road trauma is generally on decline (and has been so for a sustained period of time), reliance upon networks to deliver life-saving approaches must be encouraged. In this case, considerable amount of funding must be made available, significantly surpassing the current \$0.05-0.26 per capita. The sorts of programs delivered by these networks must be evaluated on the extent to which relevant human errors increase or decline. Recurring funding must be preferable to one-off funding approaches.
- e The decentralisation of management of road safety in places such as the ACT whilst centralising it in the NT should be married up with approaches which build on social learning theories. Role modelling, observation and motivation of road users to change their attitudes to risky behaviours and their knowledge of specific human errors associated with these conducts must be pursued. Their ability to manage their consumption, distractiveness and alertness habits must be targeted in future approaches. The status of the changes in attitudes, skills and knowledge of road user must be recorded, reviewed and published at a local level.
- f Explore technological advances (e.g. autonomous emergency braking) in fatigue management to retrofit vehicles with the most advanced measures, including tax concessions and tariff removal, which are not only reliant upon the human being doing the right thing (i.e. to adhere to fatigue management strategies) such as distraction detecting mechanisms on windscreens which sound a warning for any length of time the driver's circadian rhythms drop or the eyes are taken off the road. Work with industry to understand the impact of the new changes on costs and overheads.
- g Enact legislation that requires governments (local, State and Federal) to develop strategies for enhanced road safety from the bottom-up (see collaborative federalism in Canada) based (not solely on cost-benefit) on known, effective behavioural and cognitive changing strategies as well as a systems thinking approach (i.e. human error mitigation which is already holistic in nature, but does not restrict itself to widening the scope of action etc.); evaluate the effectiveness of all strategies periodically and publicise the results; develop adjustments to strategies arising out of this feedback loop; and acknowledge shortfalls without legal liability assigned to these admissions.

- h Create incentives for road users to purchase the safest vehicles their pockets can afford. This can be achieved through the removal of taxes on cars, scooters, motorcycles etc. with the highest level of safety features e.g. autonomous emergency braking, lane departure warning, multiple airbags (side and front), top quality helmets in terms of safety etc.
- i Encourage local governments (local councils) to report on all types of human errors periodically. Hold the local councils and the community accountable for monitoring the trends in human error frequency and magnitude. For instance, each local council should be asked to table a report every 6 months at the State Parliament and be provided with future funding based on improvement in the results of the independent report on the following questions (these are only inserted here for illustrative purposes; other questions about human errors should be added): what is the percentage of young people in a given jurisdiction not wearing helmets whilst cycling? What is the percentage of crashes involving vehicles veering off the road and hitting a roadside hazard?

KEY POINTS

- a. Traditional approaches to develop the NRSS and the AP appear to have a number of shortfalls.
- b. Australia must re-define the Safe System principle to align this definition with the Swedish vision zero. Currently, the definition of the Safe System principle seems to focus uniquely on the holistic nature of the approach. The Safe System principle is more than holism. It is about holding the road designer, builder and operator responsible for the safety of the road network. The road user shares this responsibility too, but does not do it alone.
- c. Crashes, by themselves, are not the biggest challenge in road safety. Reducing their potential to cause deaths and serious injury is the task of road safety managers. This calls for a radically new road safety approach in Australia, which emphasises the need for the road network and vehicle fleet to be forgiving of human errors.
- d. The emphasis on road user behavior appears to be conducted to the detriment of cognitive approaches. This scenario needs to change. Mandatory rehabilitation and specific outcomes for road safety educational programs must be set out.
- e. Reducing road deaths and serious injuries requires an approach with clear and quantifiable, local level objectives, specific and scientifically identified indicators of these objectives as well as effective and accountable implementation of activities to achieve the indicators.
- f. Australia needs to identify a hierarchy of local, State/Territory and Federal numeric goals.
- g. The NRSS does not need to have an absolute national goal. The national goal can and may be politicised. In addition, it often falls short of the ambitious expectations held by the community, the industry and the academia in Australia.

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APPENDIX: A Framework for developing local APs

| | Government Role (local & State) | Role of Academia, Industry, Communities of Practice & the Community |
|---|---|--|
| 1. Participatory Appreciation of Issues | <p>Provide capacity for local authorities to undertake road safety audits and collate data about relevant issues to establish current status</p> <p>Provide a forum for wide, open consultation to identify road death causes (at all levels)</p> <p>Legislate the establishment of a lead agency in jurisdictions showing consistent pressure from road trauma</p> <p>Develop guidelines for the harmonisation of data categorisation and collection</p> <p>Secure the commitment of all parties to numeric goals such as the reduction of vehicles veering off the road by an agreed percentage</p> <p>Access learning from overseas & local experiential learning about saving lives on the road</p> <p>Establish synergies across all areas of public administration by seeing road deaths as a human development and civic right issue</p> | <p>Organise into communities of practice to contribute to the identification of the causes of road deaths</p> <p>Provide input related to local conditions</p> <p>Identify beliefs and attitudes which must change</p> <p>Develop a central message about safety on the road</p> <p>Adjust assumptions and beliefs with scientific evidence provided by academia & consultancy</p> <p>Categorise issues e.g. vehicle occupant protection, human error, user behaviour, roadway safety etc</p> <p>Access experiential information from other jurisdictions and overseas to understand trends</p> <p>Understand Return On (public) Investment</p> <p>Petition government to make changes to roadway and roadside in order to enhance safety, especially that of vulnerable road users</p> <p>Lobby the government to focus on saving lives</p> |
| 2. Participatory Appreciation of Options & Trade-offs | <p>Establish terms of reference for modelling and the identification of indicators for the numeric goals</p> <p>Engage experts in modelling of outcomes to create APs.</p> <p>Provide guidelines for transparent dissemination of modelling methodologies</p> <p>Engage information communication specialists</p> | <p>Provide sensitivities and rationales to influence policy direction around causes of road deaths</p> <p>Establish consensus in relation to priorities</p> <p>Assess trade – offs of various intervention options</p> <p>Submit stakeholder comments to drafts of the NRSS, focusing on life saving measures</p> <p>Define acceptable returns on the social investment</p> <p>Mobilise a movement towards the achievement of the local targets</p> |
| 3. Deliberative Delivery of Social Outcomes | <p>Adopt mean (average), ambitious targets based on local targets, with numeric targets for all death causes e.g. % increase in vehicles with lane departure warning etc.</p> <p>Provide funding for the achievement of local targets which are contained in Action Plans.</p> <p>Commission research into target changes</p> | <p>Ensure the government’s focus in road safety is directed at the errors humans make whilst on the road such as veering off the road, hitting objects on the side of the road, departing lanes etc. Demand the gradual implementation of human error mitigation into the road network</p> |
| 4. Reinforcement of a Central Message | <p>Provide enforcement, education, data sharing safeguards, restorative justice & accountability</p> <p>Fund research & awareness events</p> | <p>Provide information on the achievement of benchmarks, compared to other countries</p> <p>Develop awareness events to celebrate the gains</p> |

END OF SUBMISSION