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Ms Gillian Miles
Chief Executive Officer & Commissioner
National Transport Commission (NTC)
Level 3, 600 Bourke Street
MELBOURNE VIC 3000

Dear Ms Miles

The Australasian New Car Assessment Program (ANCAP SAFETY) welcomes the opportunity to provide a submission to the National Transport Commission (NTC) Consultation Regulation Impact Statement on *In-Service Safety for Automated Vehicles*.

Please find ANCAP's submission to the RIS enclosed.

Yours sincerely

James Goodwin
Chief Executive

16 August 2019

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ANCAP SUBMISSION

NTC Consultation Regulation Impact Statement on *In-Service Safety for Automated Vehicles*

August 2019

1. ANCAP and its role

The Australasian New Car Assessment Program (ANCAP Safety) is Australasia's independent vehicle safety authority.

ANCAP employs a non-regulatory approach, with its key focus to eliminate road trauma through independent assessment, market influence and consumer advocacy – empowering consumers with information to make safer vehicle choices; encouraging vehicle brands to improve their vehicle designs; and complementing regulation.

ANCAP safety ratings are published for a range of new passenger, sports utility (SUV) and light commercial vehicles (LCV) entering the Australian and New Zealand markets, using a rating system of 0 to 5 stars.

ANCAP Vision
Safer vehicles for all

ANCAP Mission
Work with members and partners to eliminate road trauma through independent assessment, market influence and consumer advocacy.

ANCAP star ratings indicate the level of safety a vehicle provides for occupants and pedestrians in the event of a crash, as well as its ability — through technology — to avoid or minimise the effects of a crash. These independent safety ratings are used to compare the relative safety between vehicles of similar size, and have become a critical factor in vehicle selection for private consumers and commercial fleet buyers and operators.

ANCAP's safety rating criteria influence vehicle design and specification, and ANCAP has a key role in educating the community about new and emerging vehicle technologies; promoting the benefits; and building confidence and demand.

ANCAP safety ratings are determined based on a series of internationally recognised, independent crash tests and safety assessments – involving a range of destructive physical crash tests, an assessment of on-board safety features and equipment, and performance testing of autonomous collision avoidance technologies. ANCAP continuously updates its safety rating criteria to influence and promote new and emerging vehicle safety features as well as target new aspects of vehicle safety.

"ANCAP influences vehicle design and plays a key role in educating the community about the benefits of new and emerging technologies."

ANCAP works in partnership with 23 member organisations including the Australian and New Zealand automobile clubs, the Australian Commonwealth, State and Territory governments, the New Zealand Government, the Victorian Transport Accident Commission, the Insurance Australia Group and the FIA Foundation.

ANCAP acts as a key conduit between all Australian jurisdictions and the Commonwealth on policy development, promotion and issues relating to the safety of light passenger vehicles:

- ANCAP supports and will actively encourage the introduction of automated vehicle technology to assist the driver and improve road safety;
- ANCAP has a key role in educating consumers and building community confidence in automated vehicle technology;
- ANCAP supports consistent regulation concerning the introduction and use of automated vehicle technology;
- ANCAP is complementary to regulation and can assist in expediting market change, and
- ANCAP recommends that safety should remain a top priority in all discussions on automated vehicles (and automated vehicle technology).

2. Strategic challenges for automated vehicles

As part of ANCAP's Strategic Plan 2018-2023, ANCAP has identified the following key strategic challenges associated with introduction of automated vehicles and automated vehicle technology:

Automated driving is not well understood:
Public interest in automated vehicles and technology is high, although public understanding of the capabilities of the new automated technologies is low and often misunderstood.

Connected & automated vehicle technologies & infrastructure working together:
Connected and automated vehicle technology are dependent on road and digital infrastructure supporting the effective function of the technology. For example, many vehicles require "roads that the vehicle can read" such as road markings and signage.

To address these challenges, one of ANCAP's key strategic objectives over the next five years is to *be the leading testing and consumer advocacy authority on connected and automated vehicle technology.*

ANCAP will meet this objective through providing research, assessment, public advocacy and community education aiming to promote the faster uptake of new automated vehicle safety technology.

Australia's leading testing and consumer advocate on CAV

As Australasia's leading independent vehicle safety advocate, ANCAP plays a significant role in influencing the design and specification of new vehicle models offered in Australia through its non-regulatory approach to safety testing. This is achieved through direct consultation with the automotive industry and ongoing consumer engagement activities.

An example of the benefits of ANCAP's advocacy and education to promote fast uptake of new automated vehicle safety technology, is the rate of increase in the availability of autonomous emergency braking (AEB) systems into the Australian new car market. Figure 1 shows that from 2015 to 2019, availability of AEB has more than doubled from approximately 35% to around 75% of the new light vehicle market.

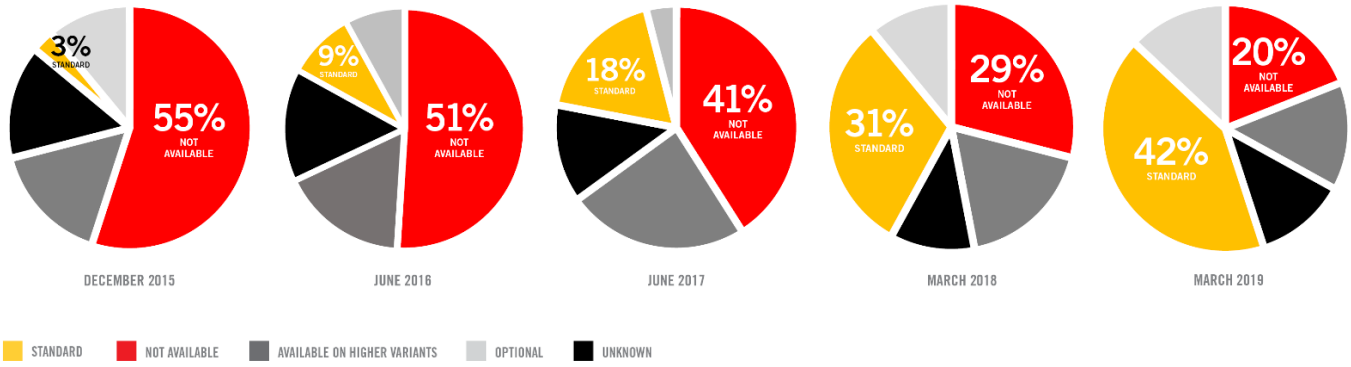

Figure 1. Availability of AEB in Australia (2015-2019)

Consumer trust and confidence in current active safety and driver assistance technologies, such as AEB and lane support systems (LSS) and other new and emerging automated vehicle systems will have a significant impact on uptake. Without an understanding of function and limitation, or the human responsibilities associated with their operation, there is a risk that road safety benefits will not be realised, and that technology may be rejected.

ANCAP is working to improve consumer knowledge and confidence in automated vehicle technologies through its consumer messaging and stakeholder engagement activities.

Similarly, ANCAP will play a role in the education and advocacy required with all government and non-government agencies that design, build and maintain roads to ensure automated vehicle technology and road infrastructure (both physical and digital) work together to deliver positive safety outcomes in-step with advancing automated vehicle technology.

ANCAP Future Plans

ANCAP recognises that to date, our testing and assessment has focused on SAE Level 1 and 2 automated vehicle systems and the NTC work focuses on highly automated vehicles, i.e. vehicles with SAE Levels 3, 4 & 5 systems.

To meet our strategic objective to *be the leading testing and consumer advocacy authority on connected and automated vehicle technology*, ANCAP will expand our testing and advocacy role to include additional automated vehicle systems – see ANCAP Implementation Timeline 2025 (Figure 2) below.

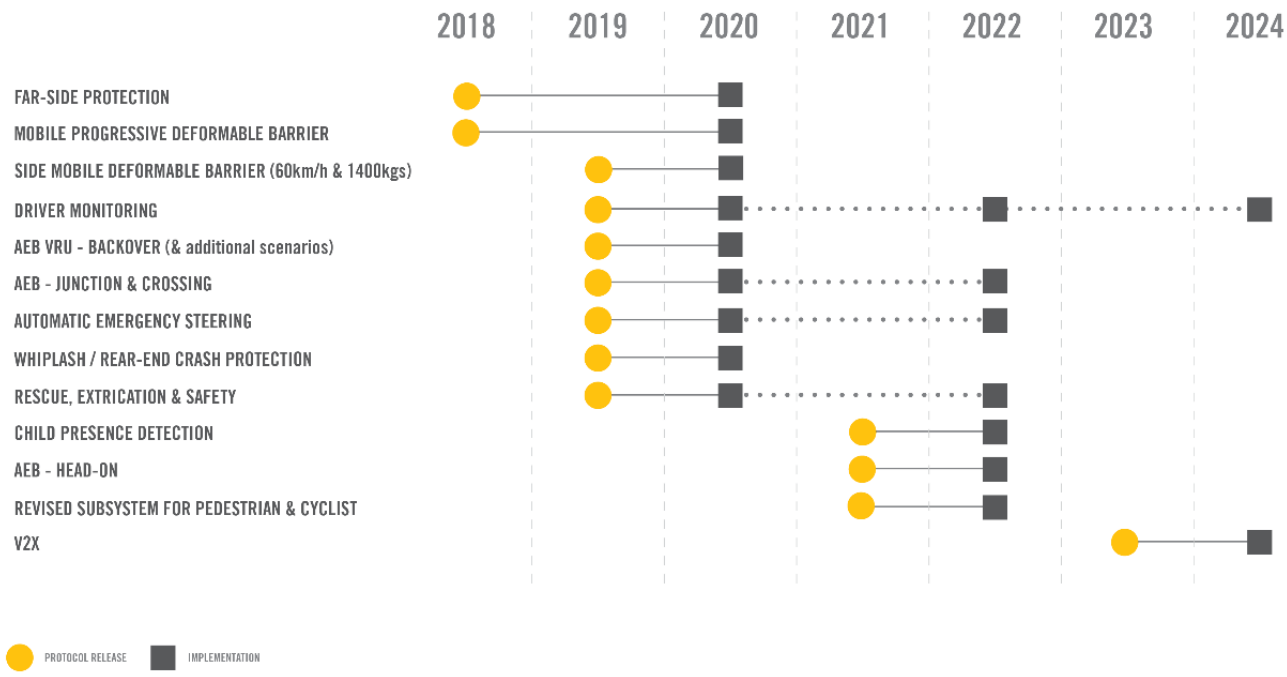

Figure 2. ANCAP Implementation Timeline 2018-2025

3. Challenges for in-service safety of automated vehicles

The Consultation RIS seeks feedback on the role and regulation of different parties involved in the safe operation of automated vehicles “in-service”.

The NTC concluded there will be a need for a regulator to monitor and enforce in-service safety of automated vehicles and presented four options:

1. The baseline option, i.e. no change from existing regulatory framework with state/territory governments to manage in-service safety of vehicles.
2. Introduce new in-service safety duties enforced by state/territory governments.
3. Introduce new in-service safety general duties enforced by a single national regulator through Commonwealth law.
4. Introduce new in-service safety general duties enforced by a single national regulator through state/territory applied law.

A national and consistent approach

Automated vehicle technology is expected to provide significant safety benefits to the community, governments and the economy. To deliver these benefits throughout the vehicle’s life, a national and consistent approach to in-service safety is required.

ANCAP supports a national approach to vehicle safety regulation, both for when vehicles first enter the market and when in-service. Consistent national vehicle standards, harmonised with international standards, set the minimum benchmark for the introduction of new vehicles and new vehicle safety technology into Australia. Any unique Australian standards, at either a national

or individual state/territory level will either delay the introduction of new vehicle safety technology or increase the cost of the technology.

When deciding on the best option to introduce a national approach for in-service safety of automated vehicles, the NTC needs to consider the cost of regulating. Any increase in the cost of new vehicles, or cost to operating vehicles once in-service, could impede the uptake of new vehicles which will enter the market with increasing levels of automated vehicle safety technology. This will result in an older in-service fleet and delay in the community receiving the safety benefits that come with automated vehicles and automated vehicle technology.

Parties with an influence

The Consultation RIS has identified the parties that have an influence on the in-service safety of automated vehicles, and consequently need to be included in the in-service safety regulation of automated vehicles.

A national approach to regulating in-service safety of automated vehicles (or indeed any vehicle) must cover all parties involved in the in-service operation of a vehicle including:

- Vehicle owner and/or operator
- State/Territory road authorities
- Other road managers / owners (e.g. toll road operators)
- Workshop and repairers (including OE dealer workshops, aftermarket workshops providing servicing, repairs and maintenance, specialists repairers and vehicle modifiers)
- Insurers and their smash repair networks
- Other government bodies and agencies
- Infrastructure providers
- Telecommunication and data providers

4. Summary

As Australasia's leading independent vehicle safety advocate, ANCAP plays a significant role in influencing the design and specification of new vehicle models offered in Australia through its non-regulatory approach to safety testing. This is achieved through direct consultation with the automotive industry and ongoing consumer engagement activities.

ANCAP's non-regulatory approach exists in parallel with, and is complementary to, regulation where independent testing exists to validate manufacturer claims of functionality and safety performance to established protocols covering both the Australasian and European markets. In parallel, ANCAP will continue its work to encourage industry development, performance and market supply of these new and emerging vehicle safety technologies to increasingly stringent thresholds.

ANCAP welcomes the NTC's consideration of the above-mentioned aspects and is available to discuss these in further detail as required.

5. Recommendations

ANCAP presents the following key points for consideration by the NTC when developing the regulatory framework for the safety operation of automated vehicles “in-service”.

RECOMMENDATION 1. **A national approach to vehicle safety regulation, both for when vehicles enter the market and when in-service, is required. This should extend to cover all parties involved.**

RECOMMENDATION 2. **The cost to regulate in-service safety of automated vehicles should not impede the uptake of newer, safer vehicles.**

RECOMMENDATION 3. **Safety should remain a top priority in all discussions on automated vehicles.**

ATTACHMENT A: Australian Road Death Projection (January 2019)

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ATTACHMENT A

ANALYSIS REPORT

Australian road death projection:
Are we doing enough, or should we push the boundaries?

January 2019

In the twelve months ending December 2018, there were 1,144[i] road deaths in Australia.

National targets have been set to reduce road trauma by 30 per cent[ii] by the end of the decade, and while the majority of jurisdictions achieved a reduction in fatalities in 2018, road fatalities and serious injuries remain at rates above that needed to meet these targets.

The *Inquiry into the National Road Safety Strategy 2011-2020*, released in September 2018, found that Australia's road safety performance had "*stalled*" and "*the scale of the personal and financial cost of road trauma is unacceptable*".

"Over the next five years, around 6,000 lives will be lost on Australia's roads."

Despite a 50 per cent growth in population and a two-fold increase in registered motor vehicles, Australia has achieved substantial reductions in road fatalities over the past 30 years.

Between 1980 and 2010, the annual road fatality rate declined from 22.3 to 6.1 deaths per 100,000 people. In 2018, Australia recorded 4.58[iii] deaths per 100,000 population.

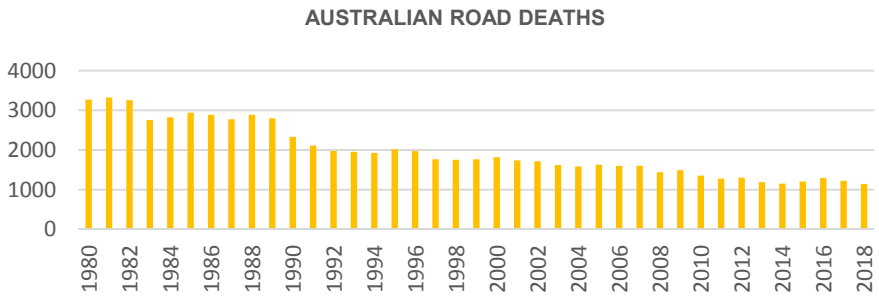

Figure 1. Annual number of Australian road deaths

Analysis

To assist in understanding what the road toll may look like in future years, ANCAP has modelled road death rates and targets with anticipated population growth to project possible road safety outcomes.

Four different scenarios have been modelled to quantify the possible road safety outcomes:
SCENARIO A: No change to road death rates
SCENARIO B: A continuation of recent trends in road deaths
SCENARIO C: A 15% reduction in death rates is achieved over five (5) years
SCENARIO D: A 30% reduction in death rates is achieved over five (5) years

SCENARIO A: No change to current road death rates
If the current rate of road deaths does not change – that is, the rate of 4.58 deaths per 100,000 remains constant, while the population grows – it is estimated that over the next five years, around 6,000 lives will be lost on Australia's roads. As the population continues to grow, road trauma levels will also increase under this scenario with the annual number of lives lost in 2023 rising by 7% to 1,231 compared with 1,144 recorded in 2018.

SCENARIO B: Continuation of recent trends
In recent years, the average decrease in national road deaths per 100,000 population has been 1.4% per year[iv] over four years. If this reduction trend continues, a reduction of 7% will be achieved after five years and approximately 250 fewer lives will be lost on Australia's roads over that period when compared to *Scenario A*. Under *Scenario B*, this would see a levelling, with the projected 1.4% reduction in the death rate negated by an increase in population, with 1,145 lives lost on Australian roads.

SCENARIO C: Achieve a 15% decrease over 5 years
If road death rates were to reduce by 15% over the next five years, it is estimated that some 500 lives would be saved on Australian roads compared to *Scenario A*. With this target, a 3% reduction in the death rate each year would be achieved. If a 3% reduction were achieved within 12 months, over 30 lives will have been saved in Australia. Under this scenario the death rate reduces to 3.9 deaths per 100,000 population, reducing the annual number of deaths to 1,046 in 2023.

SCENARIO D: Achieve a 30% decrease over 5 years
If death rates were to decrease by a more ambitious 30% over the next five years, it is estimated that over 1,100 lives could be saved in Australia compared to *Scenario A*. Under *Scenario D*, around 70 lives could be saved in the first year, with the annual number of lives lost projected to reduce to a record low of 862 in 2023 – a rate of 3.2 deaths per 100,000 despite an increase in population and mobility.

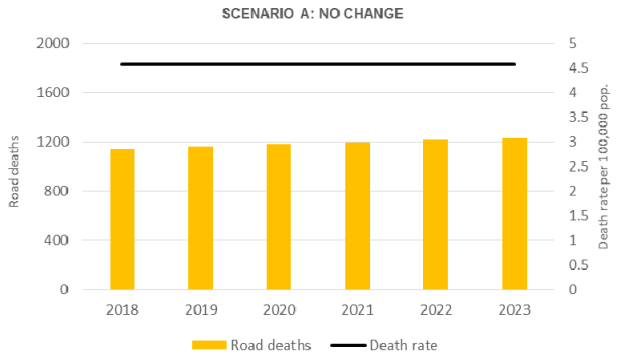

Figure 2. Projection of Australian road deaths if fatality rates remain static

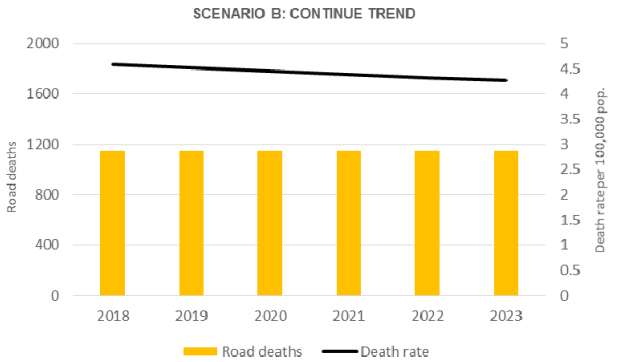

Figure 3. Projection of Australian road deaths if recent trends continue

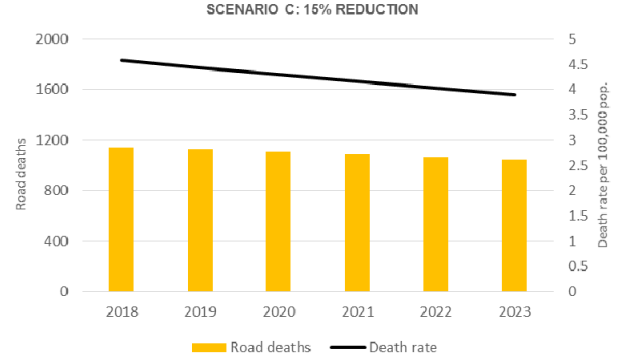

Figure 4. Projection of Australian road deaths if a 15% reduction is achieved

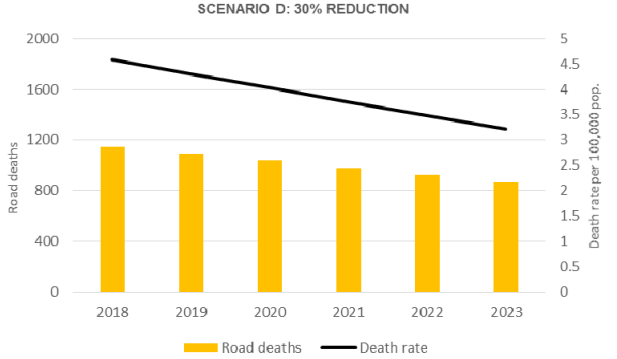

Figure 5. Projection of Australian road deaths if a 30% reduction is achieved

YEAR	SCENARIO A (no change)		SCENARIO B (7% reduction)		SCENARIO C (15% reduction)		SCENARIO D (30% reduction)	
	DEATHS	DEATH RATE	DEATHS	DEATH RATE	DEATHS	DEATH RATE	DEATHS	DEATH RATE
2018	1,144	4.58	1,144	4.58	1,144	4.58	1,144	4.58
2019	1,162		1,145	4.52	1,127	4.44	1,092	4.30
2020	1,179		1,146	4.45	1,108	4.31	1,037	4.03
2021	1,196		1,146	4.39	1,089	4.17	981	3.76
2022	1,214		1,146	4.32	1,068	4.03	922	3.48
2023	1,231		1,145	4.26	1,046	3.89	862	3.21

Discussion

The modelling of these four scenarios provides some quantification as to what Australia's road safety outcomes may look like over the next five years. In particular, the modelling of *Scenarios A* and *B* highlight a continuation, and even increase, in the number of road deaths if there was little change to road death rates.

Under *Scenario B* - which projects a 7% reduction in the road death rate over five years - the number of annual deaths on Australian roads would remain static with over 1,100 lives lost each year due to increases in population and mobility negating the reduced death rate.

Death rate reductions of 15% and 30% as modelled in *Scenarios C* and *D* result in an overall continuous reduction in the number of road deaths as the Australian population increases. If a reduction in death rates of 15% is achieved by 2023, it is estimated there will be approximately 1,046 deaths in 2023. If a 30% reduction is achieved, it is estimated that 862 deaths will occur on Australian roads in 2023.

This model highlights that while significant gains have been made in road safety in Australia, more needs to be achieved to overcome effects of population increase and reduce road trauma.

Method

The analysis explores the outcomes of potential reductions in the rate of road deaths per 100,000 population and utilises population projections for future years to estimate the possible outcomes. The population projections for future years are based on the following figures and growth rates:

Australian population: 25,126,516 at 11:35:06 am, 6 November 2018.[v]
Growth rate: 1 person every 1 minute and 23 seconds.

A model was developed projecting future population figures which also allowed road death rates to be applied and varied to estimate the number of annual road deaths under several scenarios.

When estimating the number of road deaths in *Scenarios B, C* and *D*, where a reduction is achieved over a five year period, it is assumed that reductions in death rates will be achieved linearly over that period. For example, under *Scenario D* the model assumes a 6% reduction will be achieved each year totalling 30% after five years.

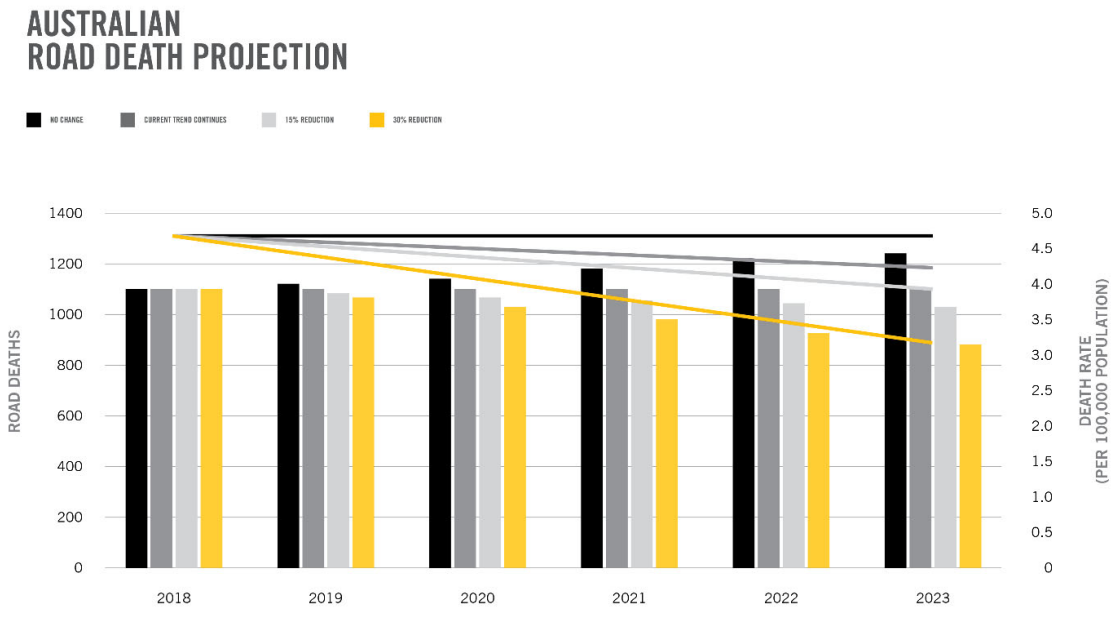

Figure 6. Australian road death projection (2018-2023)

Data Sources

- Australian 2018 road deaths figures are based on preliminary data for the 12 months ending 31 December, compiled by jurisdiction. The national rate of deaths per 100,000 population has been sourced from Queensland Transport & Main Roads[iii].
- Population and growth rate data has been sourced from the Australian Bureau of Statistics (ABS)[v].

Limitations

- The key limitation to the analysis is the simplified nature of the model used to project the number of future road deaths. In particular, where a reduction in the road death rate is modelled, it is assumed that the reduction will be achieved at a linear rate. In reality, the road safety equation is complex and annual statistics may vary, however for the purposes of this analysis the simplified model is considered sound.
- The model relies on population projections based a growth rate provided at a single point in time. Growth rates can be subject to a variety of factors and may be subject to change.
- The analysis makes no attempts to quantify or discuss road safety strategies, either past or future.

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[i] Preliminary road fatalities for 12 months to 31 December 2018, compiled by jurisdiction.
[ii] National Road Safety Strategy 2011-2020.
[iii] Queensland Transport & Main Roads, Queensland Road Crash Weekly Report, 2 January 2019.
[iv] Bureau of Infrastructure, Transport and Regional Economics (BITRE), Road Deaths Australia Monthly Bulletin, November 2018.
[v] Australian Bureau of Statistics (ABS), *Population Clock*, 6 November 2018.