

24 August 2021

Committee Secretariat  
Joint Select Committee on Road Safety  
PO Box 6100  
Parliament House  
**CANBERRA ACT 2600**

Dear Sir/Madam,

**RE: Joint Select Committee on Road Safety - Inquiry**

Transurban is pleased to provide a submission in response to the Inquiry established by the Joint Select Committee on Road Safety.

Transurban operates urban motorways in Sydney, Melbourne, Brisbane, the Greater Washington Area in the USA and Montreal in Canada. Our road safety strategic framework is based on the Safe System approach and includes targets and action plans to further our goal in operating a transport network free from fatalities and life-changing injuries.

Transurban measures and reports on our road safety performance while also engaging experts to analyse our data, assess our network and evaluate our activities to support our continued road safety efforts.

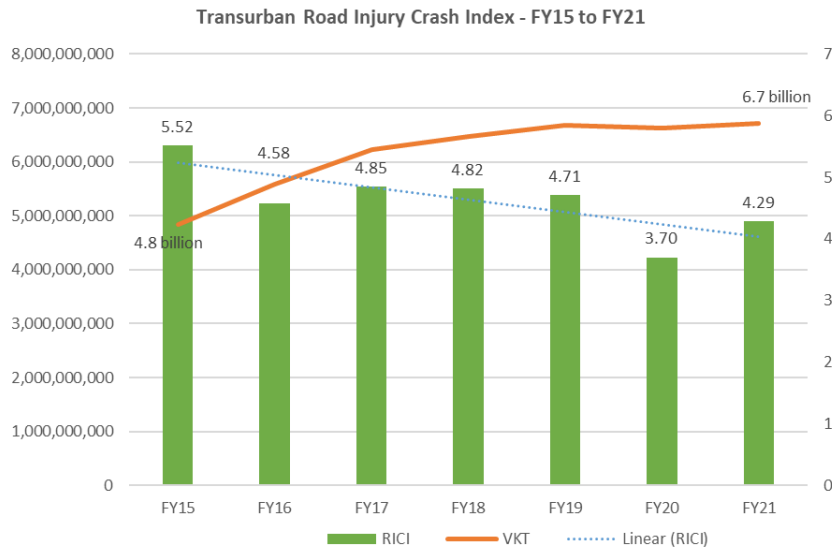
Travel on Transurban's network has increased by 40 per cent over the past seven years as a result of our expanded network in North America, Queensland and New South Wales. Over this time, our road injury crash index (RICI) targets have been adjusted to reflect changes to both our roads and the broader network, averaging 4.6 serious injury crashes per 100 million vehicle kilometres travelled (VKT).

In setting our targets we undertake analysis of our past performance, consider new roads and enhancements to our existing roads that will come into operation. We also scan the environment to consider new vehicle technologies, population and mobility trends, and other factors.

For the financial year 2021, we increased our target from the previous year to account for three new assets in our Sydney portfolio and impacts on driver behaviour, particularly speeding in lower traffic volumes due to travel restrictions, that were observed across the broader network.

In the past two years we have beaten our target for fewer serious injury crashes, with an overall downward trend over the past seven years.

**Exhibit A: Transurban Road Injury Crash Index – FY2015 to FY2021**



We attribute these results to investment in a Safe System Professional Development Program, co-designed and delivered with the Centre for Automotive Safety at the University of Adelaide to enhance our employees' Safe System capability, as well as new and upgraded roads and technology, and continued excellence in maintenance and incident response.

Independent assessments of Transurban's safety performance include a crash analysis by Monash University Accident Research Centre (MUARC). Its most recent research, released in August 2021, found Transurban's roads in Australia are twice as safe as like roads, with up to 50 per cent fewer fatal and serious injury crashes. The Australian Road Research Board's (ARRB) AusRAP assessment of our Australian network found that 91 per cent of travel is on four star or better roads.

As an active contributor to road safety policy in the jurisdictions in which we operate, we have responded to research and policy initiatives by the National Transport Commission, Austroads, and the National Heavy Vehicle Regulator, along with federal and state road safety and transport inquiries.

Submissions and responses to recent inquiries and road safety strategies include the:

- NSW Staysafe Committee's Inquiry into mobile speed camera enforcement programs in NSW
- Draft NSW 2026 Road Safety Action Plan
- Safer Roads, Safer Queensland Forum in May 2021
- Draft National Road Safety Strategy 2021-2030
- SafeWork NSW Guide to Managing Work, Health and Safety in the Food Delivery Industry in 2020
- Victorian Inquiry into the 2019 Road Toll in January 2020
- Joint Select Committee on Road Safety in January 2020, and
- 2018 review into the National Road Safety Strategy 2011-2020 (National Inquiry).

Transurban believes we have a role to contribute to the safety and performance of the overall network, beyond our own roads as well improving safety for the broader community. Key to this is our partnership with Neuroscience Research Australia (NeuRA), which includes the Transurban Road Safety Centre and its crash test facility. Research outcomes from this partnership are contributing to improved road safety standards for children, senior drivers and motorcycle riders. We are very proud of this partnership and would be pleased to host a tour and demonstration of the Centre and its crash lab by the Joint Select Committee members.

In responding to the Terms of Reference (ToR) for the current Inquiry, we draw on our experience, expertise and activities to provide relevant and real-world examples.

We thank the Committee for the opportunity to participate in this Inquiry and welcome further discussion on the matters detailed within this submission.

Yours sincerely,

Elizabeth Waller  
Road Safety Manager

## **Transurban's response to the Inquiry's Terms of Reference**

### **a) *Measures to support the Australian Parliament's ongoing resolve to eliminate road crash fatal and serious injuries with a focus on ways to achieving Vision Zero by 2050***

Since the 1970s, Australia has been a leader in implementing effective road safety measures from roadside drug and alcohol breath testing to speed camera programs, child restraint regulations as well as safe infrastructure programs and 'gold class' graduated licensing systems. These measures have contributed to Australia's excellence in road safety and were implemented based on sound data, research and evidence gained in high-performing jurisdictions and/or through trials in the Australian context.

Measures that will support the Parliament's resolve include:

#### ***Deliberate embedding of the Safe System approach***

The meaningful adoption of the Safe System approach is fundamental to achieving Vision Zero by 2050. This starts with ensuring capability and capacity across all sectors, including political, public and private.

Transurban's ongoing response to United Nations Sustainable Development Goal 3 (SDGs), and linking it with environmental, emissions reduction, health, and active transport targets provides the framework for our integrated set of actions that will achieve a safe and sustainable transport system for our community.

Our [Corporate Report](#) and [Sustainability Supplement](#) provide examples of how to embed SDGs alongside business key performance indicators (KPIs) into relevant strategies, activities and reporting.

We discuss the embedding of the Safe System approach further in Terms of Reference C.

#### ***Sound research and evidence***

For road safety operations to maintain best practice, standards and guidelines across the transport and infrastructure sectors need to be continually revised in response to the latest scientific research and evidence. Evaluating intervention and program effectiveness through genuine outcomes including crash reduction, injury severity and lives saved will ensure that funding and effort are allocated to measures that have the best chance of success.

Given the diversity at local and state government level, the Federal Government's role in ensuring that infrastructure standards respond to contemporary research and evidence is of the highest priority so that roads, cycle lanes and pedestrian facilities eliminate the risk of serious injury and death.

The Federal Government's role in ensuring early adoption of vehicle safety features, performance-based principles for heavy vehicles, infrastructure standards and guidelines, and regulation across industry and for road users are all critical for achieving Vision Zero. Utilising the expertise of leading road safety research institutes and the Australasian College of Road Safety will be essential to guide standards and regulation.

Transurban's partnership with Neuroscience Research Australia (NeuRA) is a demonstration of research in action to drive road safety outcomes.

In 2020, Transurban entered into a second three-year partnership with [NeuRA](#) to undertake a research program focusing on eliminating motorcyclist pelvic injuries, addressing child safety in cars, and improving older driver and passenger protection.

This research has already found potential improvements in child seats, which the Australian Standards Committee is in the process of reviewing, while world-first research into new protective equipment for motorcyclists and modifications to fuel tank design may help improve rider safety.

The motorcycle fuel tank injury syndrome research aims to address pelvic injuries, which are a common outcome in motorcycle crashes and result in long-term impacts to health and quality of life. The project is looking at:

- fuel tank design and rider postures that pose the greatest or least potential for injury, and
- whether protective equipment has the potential to prevent or reduce the severity of injury.

This research has the potential to inform standards for motorcycle design and enhance protective gear for riders, which has progressed through international collaboration on prototypes of rider pelvis personal protective equipment samples.

The team at NeuRA is also conducting dynamic testing of child restraints in modern, real-world crash conditions. The current crash test data that informs the Australian Child Restraint Standard and Child Restraint Evaluation Program (CREP), which star rates child car seats, was introduced decades ago and does not reflect modern cars and some crash types. Outcomes of this research will be presented to CREP and may change the testing approaches used to inform child restraint standards.

Using new state-of-the-art crash dummies, the team has also researched the safety of aids such as seat cushions, back supports and seat belt comforters, often used by older drivers. This study found that comfort aids adjust the seating and seatbelt position and result in an increased risk of injury to the occupant. The researchers are working with experts to develop guidelines for comfort aid use.

#### ***Utilisation of the latest data***

Transurban has rich sources of data from our internal tolling and monitoring systems that informs our road operations and safety efforts.

'Real-time' data is also available to all road safety operators – including near-miss incidents, vehicle type and age, as well as a number of metrics relating to how our roads are being used by motorists. Ensuring these data sets are accessible to road safety researchers, policy makers and program managers is critical to understanding safety issues that we have previously only been able to understand when crashes occur, and offers the best opportunity to allocate resources and bring forward efforts to eliminate the risk.

The integration of new and emerging data sources such as near miss will also inform more timely reviews of safety standards, rather than relying on historical crash data, and provides evidence for the procurement of maintenance and construction requirements. It allows for modelling that ensures the most effective and cost-effective interventions can be implemented to eliminate the crash risk.

An example of data integration is the recent analysis of the Pennant Hills Road performance following the opening of the NorthConnex tunnel in Sydney in October 2020. Not only did this analysis show that Transurban's toll roads are safer, they can also improve the safety of surrounding roads. By reducing traffic volumes on the surrounding road network, our toll roads ease congestion and improve the safety performance on local roads. Traffic data following the opening of NorthConnex showed a marked improvement on Pennant Hills Road where it is now 24 to 33 per cent less congested as a result of 24 per cent fewer vehicles using this road each work day. GPS data revealed crashes on local streets have halved, while near misses – hard braking and erratic steering events - reduced by two-thirds.

#### ***Funding linked to safe infrastructure***

The National Inquiry identified an opportunity to align infrastructure investment with Safe System principles.

Tools are now available to support this recommendation, including human-centred design approaches, safe system assessments, human factor integration plans and utilising objective assessments such as AusRAP.

The significant funding allocated by the Federal Government to improve the safety of Australia's roads should include requirements to ensure Safe System-compliant road design and be measured against:

- proportion of speed limits appropriate for the road network
- proportion of travel on roads rated 3 stars or better
- proportion of network length rated 3 stars or better
- rating and assessment of safe intersection design and implementation
- establishment of measures to rate smart motorways and associated infrastructure and technologies
- proportion of separated networks for vulnerable road users including cyclists and pedestrians.

By tying public sector funding to these measures and requiring trained experts at every level to deliver safe infrastructure will reduce the risk of serious road incidents and where crashes do occur, the severity of injury, so lives are saved without life-changing impacts.

We have worked with our contractors on the West Gate Tunnel Project in Melbourne and WestConnex project in Sydney on a range of measures to improve the safety of construction trucks, including:

- 360-degree vision
- side-under run protection
- vehicle safety markings
- close monitoring for fatigue, load and route management
- training drivers to raise awareness of vulnerable road users.

Such requirements lift the safety standards of the construction sector for these and future projects.

With a move to electric vehicles and more efficient internal-combustion engine vehicles, revenue from fuel excise continues to decline. A national approach to a more sustainable model of road funding is needed to ensure funding is available to maintain and continually improve the safety of our roads.

In August, Transurban released an industry report, *Urban Mobility Trends: Road Funding Reform* that sets out the need for road funding reform, and explores attitudes towards reform via a road-user charge. It found 64 per cent of respondents across Melbourne, Brisbane and Sydney believe a road-user charge model would be a fair way to contribute towards road funding compared to 55 per cent who said the same for the current system of fuel excise and other road-related charges. However, preference for the current funding model decreased to 23 per cent after respondents were made aware that it could potentially result in less government funding for future roads and infrastructure projects. Read the full report [here](#).

**b) *The effectiveness of existing road safety programs across Australia; opportunities to improve them and encourage broader take-up of effective approaches***

Previous strategies identified effective measures and established performance targets that would have a meaningful impact on road trauma in the short, medium and long term. The comprehensive inquiry into the National Road Safety Strategy 2011-2020 reported on measures which had been effective and offered opportunities to consolidate efforts as a nation to address the burden of road trauma on Australian families, communities, health and transport systems as well as the broader economy.

The implementation or expansion of these measures would contribute to the elimination of serious injuries and fatalities on Australian roads.

### ***Ensuring infrastructure meets Safe System principles***

In recent years, research has demonstrated the limitations of existing infrastructure design standards, much of which was developed decades ago, and is reliant on the road user to navigate the system safely. The Safe System approach introduces a new paradigm that broadens responsibility for users' safety to include vehicle manufacturers, infrastructure developers and operators.

Continuing to improve the following will support the Vision Zero goal:

- Investment in infrastructure, road projects and technology should be tied to Safe System principles to ensure design, construction, operation and maintenance is human centred.
- Roadside and centreline crash barriers to reduce runoff road crashes and head-on crashes, which contribute significantly to fatal and serious injury outcomes.
- Intersection upgrades including dedicated right lane turning lanes, raised platforms, roundabouts and separation for cyclists and pedestrians.
- Dynamic systems such as variable speed limit signs, intelligent infrastructure which alerts drivers to environments such as high-volume pedestrian and cyclist locations, schools and childcare centres, aged care and health facilities, along with strip shopping centres and public transport.

### ***Automated enforcement to address speeding, distracted driving and non-restraint use***

There is significant research on the contribution of speed to trauma outcomes and this has been recently included in the updated Austroads Guide to Road Safety. Road safety camera programs have been highly effective in supporting motorists to adhere to speed limits, and more recently, regulating mobile phone and seatbelt/restraint use. However, there continues to be scepticism in some sectors of the community about the value of these programs and an engrained belief they are primarily to raise revenue for government.

Transurban believes speed management policy could be strengthened through a consistent speed management hierarchy system that would be intuitive to motorists. For example, four and five-star motorways having the highest speed limit, while three-star highways and arterials with lower speed limits. Areas of high pedestrian, aged, child and cyclist activity should have the lowest speed limits.

A [presentation](#) at the Australasian Road Safety Conference in 2013 by the Centre for Accident Research and Road Safety at the Queensland University of Technology (CARRS-Q) reported on improved practices for point-to-point speed enforcement. The presentation covered positive outcomes of point-to-point cameras and their contribution to reductions in serious injury and fatal crashes. This is consistent with the MUARC's [evaluation](#) of the Queensland Speed Camera Program.

The CARRS-Q presentation also highlighted that point-to-point cameras are seen as being a fairer form of speed enforcement as they don't just penalise drivers for being slightly over the speed limit in a specific location. This is consistent with Safe System thinking, which acknowledges that road users make mistakes.

Average speed and mobile phone detection cameras are of particular interest to Transurban as automated enforcement on motorways would be an effective tool to support speed compliance and reduce distraction which leads to rear-end crashes.

### ***Vehicle safety***

Transurban's fleet policy requires ANCAP five star rated vehicles.

Mandating proven vehicle safety technologies in new vehicles and transitioning older vehicles from the network will contribute significantly to Vision Zero.



MUARC has analysed crashes on Transurban's roads and compared our safety performance to 'like roads'. The analysis shows the predominant crash types on our road are rear-end crashes and incidents involving lane change/swiping. These crashes are consistent with distracted/inattentive driving. Technologies including autonomous emergency braking, lane keep assist (and lane departure warning or blind spot detection) that are available in newer vehicles reduce rear end and merging crash risk, and the severity of crashes when they do happen.

Transurban has engaged with ANCAP Safety to promote the benefits of safer vehicles. Most recently, we shared key messages about poor safety ratings of many light commercial vehicles, specifically vans. Promoting these results to our key account customers helps influence a safer vehicle fleet across the whole network.

Given our roads are relied upon by the freight industry, crashes involving heavy vehicles are also a key focus area. We work closely with trucking associations to develop community messaging about road safety around heavy vehicles. Our most recent activity on truck blind spots was promoted in conjunction with state trucking associations via social media, direct customer communications and roadside billboards.

### ***Innovation***

Australia has a proud history in innovation and implementation of targeted road safety countermeasures to address drink and drug driving, speeding, young and novice drivers and child restraint regulation as part of our globally recognised public education programs. Continuing to innovate and utilise new technologies, informed by sound research and data, will be critical to achieving Vision Zero.

Transurban has conducted a number of on-road studies and trials aimed at improving the safety and performance of road infrastructure and preparing for connected and autonomous vehicles.

In 2018 and 2019 we conducted and reported findings for [Connected and Autonomous Vehicle Trials](#) across our network. These trials provided insights into the behaviour of vehicle technologies and road infrastructure to ensure network readiness as the vehicle fleet renews with driver support and automation features such as lane keep assist, autonomous emergency braking and adaptive cruise control.

Transurban continues its program of on-road trials, which includes:

- evaluating the benefits and challenges of speed harmonisation to manage congestion and safety
- encouraging economical driving to reduce fuel consumption, vehicle wear and tear, and improve driver behaviour (such as reducing tailgating)
- assessing driver behaviour in tunnels using virtual reality to inform countermeasures to improve safety.

The outcomes of these trials can inform policy, regulation and standards in how we design, construct, operate and manage our road network.

### **c) *Opportunities for government policy in health, education, industry, transport and other areas to contribute to road trauma elimination, integrating Safe System principles***

Embedding evidence-based research, information, education and training across sectors and through professional accreditation will improve understanding of the Safe System approach and its application to the breadth of roles in the transport, infrastructure, health and education sectors. This is particularly pertinent in response to the SDGs as outlined under ToR A.

Developing and sharing training and tools to support industry to design, build, operate and maintain safe infrastructure through asset life cycles will ensure the long-term safety of users of the system.



An example of industry developing employee capability was the delivery of our Safe System Professional Development Program to more than 150 Transurban employees in 2020 and 2021. Co-designed with the Centre for Automotive Safety Research (CASR) at the University of Adelaide, the program was facilitated by Associate Professor Jeremy Woolley. It continues to be available in eLearn format.

The program aims to provide a high-level overview of the Safe System approach to support road safety leadership in Transurban, in line with our HSE Strategy, where road safety 'leadership and capability is embedded in the business.'

The learning objectives of the program for our technical employees are to:

1. Describe the Safe System principles and understand the key attributes of each Safe System pillar.
2. Describe how the Safe System aligns with Transurban's mission, strategy and values.
3. Demonstrate the importance of the Safe System approach to their role at Transurban.
4. Apply Safe System concepts to various Transurban contexts.
5. Use information on the Safe System such as guidelines, frameworks and tools and technical training opportunities for employees.

**d) *Opportunities to embed road trauma prevention across Australian Government portfolios and agencies***

The National Road Safety Strategy and its action plans aim to eliminate fatal and serious injury crashes, which impact the performance of all government portfolios and agencies.

It is imperative those responsible for strategic delivery have the highest level of capability in understanding and applying the Safe System approach and to support and influence the embedding of the strategy across government. Ensuring these employees have access to the highest levels of professional development and to decision makers across government will be required to ensure the end goal of Vision Zero is achieved.

Including the strategy in employee inductions and requiring consultation across government to review and develop related policies will support the embedding of trauma prevention into departmental portfolios. Establishing performance targets and reporting on delivery against the SDGs will support the capability of government department and agency employees to contribute to the health and safety of our community.

**e) *Opportunities to reduce road trauma in the workplace, working with Work Health and Safety agencies and employers across Australia, including a focus on heavy vehicles and the gig economy***

Transurban works collaboratively with state partners, police agencies and the media to address risky and unsafe behaviours on our roads and on the broader network. Our 8.9 million customers collectively take two million daily trips on our roads, allowing us to raise awareness and develop campaigns for behaviour change through our data and on-road technologies. Opportunities include deterring speeding and addressing other common issues observed on our network such as over-height vehicles, distracted drivers, and use of emergency lanes. Our targeted road safety messages are promoted through our customer communications, social media and mainstream media, and via on-road channels such as Variable Message Signs.

It is also critical that we manage the risk to the employees and contractors who provide incident response or perform maintenance, road works, intelligent transport systems (ITS) and construction on our network. We are at the forefront in traffic management requirements, established through procurement utilising tools such as:

- Safe System assessments and road safety audits
- innovation in traffic management and road worker safety, including our investigation into self-deploying [robotic traffic cones](#) as well as [automated truck mounted attenuators](#)

- participation in industry working groups to share data, expertise and support the development of interventions that will eliminate injury risk to road workers and create an environment for safe driver behaviour.

Transurban has a strong history of investigating and trialling new and innovative measures to enhance road safety and network performance, including connected and autonomous vehicle technology, speed harmonisation and work zone safety. We reiterate our support for speed management and enforcement technologies that have been demonstrated to effectively improve safety on the broader network, reduce crashes and contribute to the elimination of serious injuries and fatalities.

Within this submission we have discussed the safety measures for construction trucks on Transurban projects. These measures were based on the Construction Logistics and Community Safety (CLOCS) scheme developed and implemented by Transport for London, which aimed to promote collaboration between the construction industry and the public.

This issue was a priority action in the previous National Road Safety Strategy and continues to be progressed by the National Road Safety Partnership Program, of which Transurban is a supporter, for implementation in Australia.

Other examples of Transurban supporting the heavy vehicle industry to upgrade safety include:

- Contractor requirement for heavy vehicles on the WestConnex project to be no older than seven years as newer vehicles support driver behaviour in terms of fatigue management, speed compliance and visibility of other road users.
- Trialling Hi-View Lens with our incident response vehicle and project vehicles. This aftermarket device aims to support driver visibility of vulnerable road users and prevent side-swiping incidents.
- Trialling new technologies such as proximity sensors for people, plant and equipment, and LED lighting to define operating zones.
- Responding to the draft NHVR Heavy Vehicle Safety Strategy 2021-2025.

In recent years, Transurban has worked with state partners and food delivery/ride-share services to respond to food delivery riders illegally using our motorways and tunnels, placing themselves and other road users at risk. Most recently, we have been involved in the SafeWork NSW industry roundtable and guidance for the industry, which is the first regulated response to addressing the significant safety risks of these workers.

Road safety is a key pillar of Transurban's business.

We hope our response to this Inquiry established by the Joint Select Committee on Road Safety demonstrates our commitment in helping Australia progress towards our collective goal of Vision Zero.