Transurban

Inquiry into progress under the National Road Safety Strategy 2011-2020

Transurban submission
March 2018

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9 March 2018

Associate Professor Jeremy Woolley and Dr John Crozier
Co-Chairs

National Road Safety Strategy Inquiry
Department of Infrastructure, Regional Development and Cities
GOP BOX 594, Canberra, ACT 2601

Dear Mr Woolley and Dr Crozier

RE: Inquiry into the Progress under the National Road Safety Strategy 2011-2020

Transurban is pleased to provide a submission in response to Inquiry into Progress under the National Road Safety Strategy 2011-2020.

Transurban is a leading infrastructure provider and we operate 15 tolled motorways across Australia and the United States. We are also progressing a number of significant road infrastructure projects including NorthConnex in NSW and the West Gate Tunnel Project in Melbourne.

Ensuring the safety of our employees and customers is Transurban's highest priority. Our road safety strategy is based on the Safe System approach, which recognises human fallibility and vulnerability, and establishes road safety as a shared responsibility.

A recent analysis of injury crashes found there were significantly fewer crashes on Transurban's assets when compared to like roads.

Consistent with the Safe System approach, we believe road infrastructure can support and enable positive safety outcomes and that motorways are uniquely placed to address some of the safety challenges faced by our community. Given our motorways are highly managed, they provide an ideal environment for trialling and testing innovative measures such as connected and autonomous vehicle (CAV) technology.

We see opportunity to make significant gains in road safety through the adoption of in-vehicle technologies and ensuring standards that govern the design, construction, maintenance and operation of road networks are responsive to new and effective measures and technologies.

With more than five million customers, we have the opportunity to partner with government agencies to educate the motoring public on existing evidence-based vehicle and road safety measures.

Transurban welcomes further discussion with the Advisory Group on matters included in this submission. To arrange a meeting please contact Alison Crosweller, Government Relations Manager on 02 9254 5293 or 0438 450 564 or acrosweller@transurban.com.

Yours sincerely,

Tony Adams,
Group Executive, Project Delivery

ABOUT TRANSURBAN

Transurban is a leading developer, operator and long-term concessionaire of urban toll road networks in Australia and the United States of America. Transurban owns and operates 15 motorway assets, comprising more than 1,300 lane kilometres* of toll roads, bridges and tunnels across Sydney, Melbourne, Brisbane and the Greater Washington Area.

We have built a track record of partnering with governments to successfully deliver and manage critical road infrastructure, and are recognised for developing innovative and effective transport solutions to meet the needs of growing cities.

The NorthConnex tunnel project in northern Sydney is an example of how we have taken a proactive approach to address one of the city's most notorious transport bottlenecks with an innovative design that caters for future traffic growth.

We are currently working with the NSW Government to construct the $3 billion tunnel, which will link the M1 Pacific Motorway at Wahroonga to the M2 Motorway at West Pennant Hills. This will bring the community significant benefits in terms of travel-time savings and reliability as well as completing the new national freight route linking the east coast of Australia.

At the time of assessment in 2017, the Infrastructure Sustainability Council of Australia named NorthConnex as the nation's highest-rated road project-to-date. The recognition exemplifies our commitment to achieving industry-leading outcomes in all aspects of sustainability, including safety.

Transurban's vision is to strengthen communities through transport. To achieve this we take a big picture view of our roads and transport networks to provide smarter, safer, and more sustainable ways for people to travel.

Our long-term concessions with governments create a strong incentive for us to actively manage these roads well and safely with a view to not only meet today's needs, but the future needs of communities – this is achieved through monitoring and reporting obligations, and community safety and other standards.

We focus on providing a healthy and safe environment for our employees, contactors, customers and the community, while minimising impacts to the natural environment.

Our strong track record in safety contributed to Transurban being included in the 2017 Dow Jones Sustainability Index (DJSI) world leadership listing and awarded the Industry Mover Sustainability Award for the Transportation and Transportation Infrastructure sector. Within the Occupation Health and Safety component of the DJSI survey, Transurban was rated in the top two per cent of transport and transport infrastructure companies in the world.

**Excludes projects currently under construction*

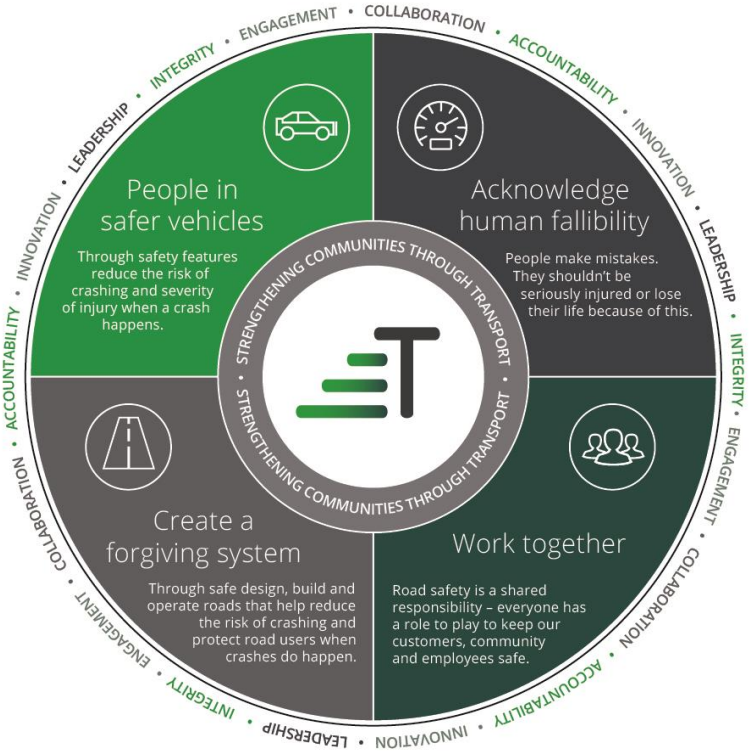
RESPONSE TO INQUIRY

In responding to the Terms of Reference (ToR) we wish to highlight the role Transurban plays in supporting the National Road Safety Strategy's objective to reduce harm by building a national culture of road safety, and put forward key priorities for consideration as part of the Inquiry.

As a toll road developer and operator we oversee 1.9 million trips on our networks in Victoria, New South Wales and Queensland every day. Transurban strives for injury and fatality-free roads. Our road safety strategy (Figure 1) is modelled on the Safe System approach, which takes a holistic view of the road transport system and the interactions among roads and roadsides, travel speeds, vehicles and road users.[1]

Within our road safety strategy we have developed road safety action plans for each region we operate in that respond to localised safety issues. These plans align with the four safe system pillars, with the fifth pillar (post-crash response) addressed through our road operations and incident response models. Plans are developed to respond to and address locally identified road safety issues.

Figure 1 – Transurban Safety Strategy



Transurban's road safety key performance indicator measures the injury rate per 100 million vehicle kilometres travelled on our roads. A recent analysis of crashes on Transurban's roads by Monash University Accident Research Centre found that there were significantly fewer crashes on Transurban's assets, with NSW's rate 80 per cent lower, Victoria's 81 per cent lower and Queensland's 53 per cent lower than 'like' roads in their respective jurisdictions.

Motorways are uniquely placed to provide a controlled environment for safe system measures and technologies to be tested. Transurban's motorways are fitted with cameras and monitoring systems that enable on-road trial data to be recorded and analysed. Use of technology along the motorway allow conditions such as speed limits and lane closures to be controlled, with rapid incident response in place to ensure safe management of incidents.

We are committed to the continuous improvement in safety outcomes on our roads. Transurban is keen to continue working with industry and government partners to research, develop and operationalise Safe System aligned infrastructure.

[1] National Road Safety Strategy 2017, The Safe System approach, accessed 19 January 2018, < http://roadsafety.gov.au/nrss/safe-system.aspx>

Industry collaboration

Transurban works with our customers, partners and the community to identify and address road safety risks. Examples of our collaborative approach include participation in the Victorian Vulnerable Road Users and Construction Trucks Steering Committee and our partnership with the Neuroscience Research Australia (NeuRA) to create the Transurban Road Safety Centre and involvement in the Austroads Tunnel Task Force.

Victorian Vulnerable Road Users and Construction Trucks Steering Committee

In mid-2016, VicRoads identified an emerging issue regarding the safety of vulnerable road users (VRUs), particularly pedestrians and cyclists. The increase in construction trucks moving in urban settings is the result of the significant infrastructure expansion in the Melbourne metropolitan area.

VicRoads convened the Committee comprising representatives from Melbourne Metro Rail Authority (MMRA), Level Crossing Removal Authority (LXRA), Transurban and the Transport Accident Commission (TAC). More recently, a representative from the North East Link Authority, a planned road development linking Springvale Road to the M80 in Melbourne, has also attended the meeting. The Committee's aim is to increase the standards for construction-truck-related activities to reduce the risk of serious injuries to VRUs.

The first action of the Committee was a forum in December 2016 where representatives from industry, government agencies and other key stakeholders discussed the issues. Many of the participants represent major construction projects in Victoria, which will rely on heavy vehicle movements over years of project delivery. Four working groups were established to explore the following topics:

- public engagement
- truck standards
- route selection
- traffic management.

The working groups meet regularly to understand the opportunities to improve standards, guidelines, policies, and communication activities with relevant audiences/stakeholders that can contribute to achieving the aim of the Committee.

During its monthly meetings, the Committee identified an industry accreditation program that could be adopted in Australia - the Construction Logistics and Community Safety (CLOCS) scheme, which was developed in the United Kingdom by Transport for London.

CLOCS promotes collaboration between the construction industry and the public. The successful scheme works across industry to improve vehicle safety, ensure road safety is considered equal to work place health and safety, implement a common standard for managing work-related safety, and encourage wider adoption of best practice across the sector.

Using CLOCs as a model, the Committee is currently consulting with relevant stakeholders to develop a proposal for a state or nation-wide scheme modelled on CLOCS and the Safe System approach. As part of the development process the Committee has engaged with Sydney Metro (and other state and national bodies) to ensure industry standards are developed consistently across Australia.

The Committee and the work it is doing to progress industry-wide adoption of the Safe System approach through the leverage provided by major projects is a ready example of a coordinated and targeted way to increase heavy vehicle safety. We see the value of this approach being developed further nationally and encourage the Advisory Group to consider this as part of the Inquiry.

Transurban Road Safety Centre and Neuroscience Research Australia

An ongoing commitment to road safety has led Transurban to form a three-year partnership with NeuRA to establish the Transurban Road Safety Centre (Centre) — a dedicated world-class research facility.

The Centre was officially opened by the Hon. Brad Hazzard MP, NSW Minister for Health and Minister for Medical Research. The joint venture brings together research, business and government into a partnership aimed at working together to reduce injury suffered on our roads.

Housed at NeuRA's Headquarters in Randwick (in Sydney), the Centre is focused on research into practical injury prevention strategies. The facilities include a new state-of-the-art crash test sled capable of reaching speeds consistent with those experienced in real-life crashes.

The facilities provide researchers with the opportunity to study a number of growing trends on Australian roads. These include:

- aged driver and passenger safety, including the use of accessories such as seatbelt covers and cushions
- motorcyclist safety and motorcycle design, and
- rear seat occupant safety and restraint systems.

Through focused research on in-vehicle occupant protection the Centre seeks to reduce fatalities and the severity of injury on our roads.

NeuRA has a proven track record of translating research into action. In 2010, seven years of research by NeuRA's child injury research team led to an update in national child restraint standards, which have since been adopted by state and territory governments.

The research involved studying children treated for car accident injuries at two major Australian children's hospitals over a five year period. The study found there was very strong evidence that Australian forward-facing restraints provide excellent protection to children even in high severity crashes.[2]

Partnerships between research and industry are critical to allow research findings and recommendations to be applied to real world, every day environments. Transurban encourages the Advisory Group to consider the role Federal, state and territory governments can play in facilitating research partnerships with industry.

[22] NeuRA 2010, NeuRA researchers contribute to new child restraint legislation, Media release 5 May 2010, available < https://www.neura.edu.au/news/neura-researchers-contribute-new-child-restraint-legislation/>

Pictured: Associate Professor Julie Brown in the NeuRA crash lab

Safe roads

Safe roads are a cornerstone of the National Road Safety Strategy, with roads and roadsides to be designed and maintained to reduce the risk of crashes occurring and to lessen the severity of injury if a crash does occur. The strategy recognises that safe roads seek to prevent unintended use through design and encourage safe behaviour by users.[3]

At Transurban we embed safe thinking into every decision we make. From network planning, through to infrastructure delivery and operations we innovate to produce improved safety outcomes.

Network design

Transurban's roads have been designed to provide safe and efficient road networks for light and heavy vehicles travelling in and around Melbourne, Sydney, and Brisbane.

When vehicles travel on local and arterial roads they may need to interact with vulnerable road users such as cyclists and pedestrians, while responding to sudden or unexpected traffic movements. Motorways can provide a more controlled and safer driving environment for vehicles when compared with local or arterial roads. For example, in NSW non-urban country roads, local residential and neighbourhood streets, and intersections account for up to 75 per cent of all deaths and serious injuries.[4] And between 2005 and 2015, NSW hospital records of serious injuries were matched with police reports on traffic incidents in

[3] Australian Transport Council 2011, National Road Safety Strategy 2011-2020

[4] NSW Government, Transport for NSW, Centre for Road Safety 2017, Draft Road Safety Plan 2021

a study which found that three per cent of all serious injuries occurred on a motorway/freeway and 18 per cent on state highways compared to 79 per cent on unclassified local roads and other classified, lower order roads.[5]

At Transurban our commitment to safety extends well beyond the design and delivery of a motorway. We are constantly looking for ways to improve the safety of our roads, and partner with industry to ensure our actions provide network-wide benefits.

Safety assessments

Transurban is exploring use of the Austroads Safe System Assessment Framework as part of our efforts to embed the Safe System approach within our business.

The Safe System assessment framework has been developed to support the National Road Safety Strategy action for road authorities at all government levels to ensure that Safe System principles are applied to all new road projects, including road upgrades. The framework considers key crash types that lead to fatal and serious crash outcomes, as well as the risks associated with these crashes (exposure, likelihood and severity).[6]

Another way to ensure the quality of road infrastructure and investment is through the Australian Road Assessment Program (AusRAP).The Australian Automobile Association (AAA) oversees AusRAP – an initiative that star rates roads and produces maps showing the risk of road crashes that cause fatalities and serious injuries. The initiative also identifies potential improvements that could be made to reduce the likelihood of crashes. The aim of AusRAP is to provide a nationally consistent safety rating for roads.

In the National Road Safety Strategy 2015-17 Action Plan, reporting on infrastructure-related road safety risk, including risk maps for key routes in each state and territory is identified as a key target.

Transurban is currently planning AusRAP assessments on our assets scheduled for completion by June 2018, along with ongoing safety assessments across our road network, operations and major projects. We would be pleased to partner with state governments on an ongoing program to ensure the learnings and any identified benefits can contribute to the safety of the broader road network.

Case study – Cleveland Street off-ramp, New South Wales

The Transurban Traffic Network Optimisation Team recognises that when something is inefficient, it is also often unsafe. The team constantly monitors the safety and travel reliability of our motorways. We work with our government partners in each state to look for ways to improve traffic flow, efficiency and safety.

The Cleveland Street off-ramp is located on the Eastern Distributor in NSW. Prior to the off-ramp being permanently closed in February 2018 motorists would regularly queue at the Cleveland Street intersection and spill back onto the motorway mainline.

This queuing caused unsafe, erratic and last minute manoeuvres by motorists. It also created turbulence in the traffic flow, often reducing the busy inner-city motorway down to one lane and causing delays throughout the inner city suburbs of Waterloo and Surry Hills.

Working with the NSW Roads and Maritime Services (RMS) we identified the Cleveland Street off-ramp as an area for improvement for the motorway and local streets. In July 2017, Transurban and RMS began a six-month trial, which saw the off-ramp closed 24 hours per day, seven days per week (rather than just the peak periods). In the lead up to the trial, we worked with RMS to undertake thorough traffic modelling, Road Safety Audits and community engagement to ensure the trial went to plan

Since the permanent closure, weekday motorway speeds have improved by five per cent, while weekend journey speeds on local roads have improved by six per cent. Aside from smoother traffic flow and travel reliability, Road Safety Audits have confirmed the closure has also increased safety on the motorway and local streets for the city.

[5] Transport for NSW 2015, Serious Injuries in NSW 2005 to 2015

[6] Austroads 2016, Safe System Assessment Framework, Research Report AP-R509-16

The permanent closure of the Cleveland Street off-ramp is an example of how Transurban has worked successfully with government to improve safety outcomes for the broader network.

Road operations

As a road operator we have sophisticated systems, practices and targets in place to ensure we offer the safest possible experience for drivers on our roads.

Transurban uses a range of intelligent transportation systems (ITS) to ensure the safety and efficiency of our road network. Systems such variable speed signs allow Transurban to control the flow of traffic and close off lanes when incidents occur. While technologies such as overheight vehicle detection, overheight vehicle barriers systems, heavy vehicle awareness systems, and automated placard checks are specifically aimed at preventing incidents associated with heavy or overheight vehicles.In addition, traffic control centres monitor road conditions and safety for each asset, while response teams provide rapid response in the event of a crash, traffic disruption or other incident.

Roadside technology

As outlined in the National Road Safety Strategy, speed is highly implicated in a large proportion of serious casualty crashes. It contributes to the number and severity of incidents on Australian roads.

Point-to-point speed camera enforcement is associated with very high rates of compliance. An evaluation undertaken in Norway in 2015 found that average speed camera enforcement reduces deaths by 49 per cent.[7] They work by recording a drivers' average speed between two fixed points to provide a more accurate picture of a driver's speeding behaviour than single fixed speed cameras.

Point-to-point technology is currently being used in Australia along freeways and motorways, though application is limited and can vary between states and territories.

For point-to-point camera technology to work effectively cameras must be secured on large stretches of road, with no entry or exit points, to allow a vehicle to be monitored between two points. Transurban sees opportunity for this technology to be developed and applied over shorter lengths of roads, and fixed to sections of road temporarily such as during construction activity, thereby increasing speed compliance in a range of different driving environments.

Transurban encourages the Advisory Group to consider increasing the use of point-to-point cameras, and investigating new environments to apply the technology as part a 2018-2020 action plan and post-2020 national road safety strategy to discourage speeding behaviour.

Case Study – Incident Response, Victoria

One incident on the road can create heavy congestion across our road network. Our safe clearance model provides incident response focus on the rapid arrival and clearance of incidents to quickly and safely reopen all lanes of the road.

In December 2016 Transurban introduced a new fleet of rapid response vehicles on CityLink to better manage these incidents and clear the road quickly and safely. The purpose-built response vehicles are equipped with special safety features that include vehicles with shock absorbent equipment to help ensure the safety of those involved while we attend to incidents, and state-of-the-art tow trucks to move broken down vehicles off the freeway to a safer location. The control room team continuously monitors CityLink and we have vehicles strategically positioned along the network which means Transurban is able to quickly respond to an incident.

Incident clearance times have reduced by 55 per cent since the new vehicles were introduced, creating a safer environment for motorists and saving drivers caught up in incident-related congestion on CityLink and surrounding arterial roads more than 23,000 hours per week.

[7] Transport for NSW, Centre for Road Safety 2016, Speed Cameras Programs: 2016 Annual Review

Pictured: CityLink Incident Response team

Issues and priorities for consideration

In developing a 2018-2020 action plan and post-2020 national road safety strategy Transurban encourages renewed focus on key actions within the current strategy and action plan and emphasises the importance of an inclusive and responsive approach when seeking to execute road safety actions into the future.

Technology

Transurban supports a renewed focus on the timely adoption of safety technologies in line with actions in the National Road Safety Action Plan 2015-2017.

Monitoring driver behaviours, including fatigue, attention and speed will contribute to reductions in serious injury crashes involving heavy vehicles. Technologies such as 360 degree vision, blind spot detection and turning warnings (either visual or auditory) alert drivers to their surroundings and other road users, particularly the most vulnerable (pedestrians, cyclist and motorcyclists). Crash avoidance technologies including Auto Emergency Braking, Electronic Stability and Roll Stability Control Programs for commercial vehicle and Lane Departure Warning will also contribute to saving lives and crash costs based on research, analysis and modelling.[8]

These technologies should be mandated where clear evidence demonstrates benefits, and where there is a lack of supporting evidence, evaluated for effectiveness. **As part of the Inquiry Transurban encourages continued focus on industry**

[8] Department of Infrastructure and Regional Development, Bureau of Infrastructure, Transport and Regional Economics 2016, Heavy truck safety: crash analysists and trends, Information sheet 78

adoption of vehicle design measures that reduce injury severity including under run barriers, flat nosed cabins and low height cabins.

Human error is reported to contribute to over 90 per cent of crashes on our roads today.[9] CAV technology will play an important role in increasing road safety for all drivers and vulnerable road users. The automotive industry is confident that we are just five to ten years away from driverless CAVs being on the market with mass adoption as early as 2040. By this time, every vehicle will be internet connected with the potential to collect, share and act on enormous amounts of data. A car will be able to communicate with other cars sharing the road, which means better traffic flow and fewer accidents.

Transurban is working with governments and industry to ensure that our road networks support CAV technology. In Victoria, we are currently running a series of CAV trials in partnership with the Victorian Government and Royal Automobile Club Victoria (RACV). The first phase finished in late 2017 and tested light vehicles with level two automation features along CityLink as well as community attitudes towards CAVs and CAVs adoption. For phase two of the trial, we are exploring trials with more highly automated vehicles, and connected vehicle communications for improved safety. In NSW, Transurban is working with government to explore potential for similar trials to run on the Sydney network.

Transurban encourages the Advisory Group to consider the safety challenges and opportunities that will result from the continued development and integration of CAVs as part of a post-2020 national road strategy.

Adaptability of standards

The National Road Safety Strategy's vision is that no person should be killed or seriously injured on Australia's roads. The strategy acknowledges that in order to meet this vision we, as an industry, need to move beyond current standards and practice, to innovate and find solutions that build a safe road transport system.

National guides and standards have been adopted by road agencies and industry across Australia as reference documents to guide the design, construction, maintenance and operation of road networks in Australia. While existing guides provide a solid foundation for industry, we see opportunity for them to be expanded to:

- reflect and establish compliance with the Safe System approach
- encourage innovation and on-road trials of new and emerging technologies aimed at supporting safe driving behaviours and protecting people in the event of a crash, and
- allow for timely wide-spread adoption of proven safety measures.

In particular, the early development and timely adoption of standards, legislation and guidelines in relation to CAVs will help support meaningful reductions in trauma.

Transurban encourages the Advisory Group to consider how existing federal standards and guidelines can be developed to ensure they remain responsive and conducive to on-going government and industry innovation in road safety.

Management and coordination

Australia and many of its jurisdictions are recognised internationally for managing and coordinating road safety efforts in line with Safe Systems strategic frameworks. There is an opportunity for governments to enhance this critical aspect of the Safe System approach by working to develop industry capability alongside transport and road agencies and departments to ensure road safety truly is a shared responsibility.

Transurban encourages the Advisory Group to consider how industry can be integrated into the management and coordination of a post-2020 national road strategy so as to encourage sharing of research and capability as well as strengthening overall governance and accountability.

[9] Australia and New Zealand Driverless Car Initiative, Driverless car benefits, available <http://advi.org.au/driverless-technology/driverless-car-benefits/>