Transurban

Senate Economics
Reference Committee

Inquiry into toll roads in Australia

Transurban submission

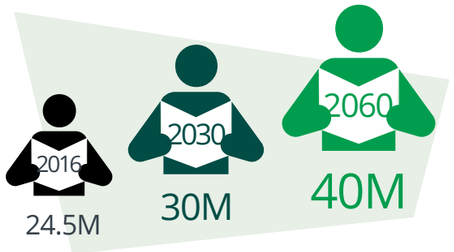
July 2017

Why an integrated approach to transport is the right solution for Australia

Australia's population growth and urbanisation

Australia's population is growing. Australian cities will also grow as more people move to cities for employment.

Population growth forecast



City jobs

80% of jobs are located in cities.

50% job growth within 10km of CBD

Population growth areas are on the city fringe

50% population growth beyond 20km of CBD

In our largest cities less than 10% of jobs can be reached within a 45 minute journey.

Australia's biggest challenge

Across Australia, transport demand is out pacing supply, and Australia is facing a future of congestion and constraint.

Freight demand is growing

86% freight increase by 2031

Congestion costs are set to increase dramatically

Road congestion already costing $13,700,000,000

Congestion levels on city roads are already high

Australia has an

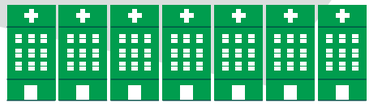
Increased public transport demand across capital cities means more services will experience peak-hour crush loadings

89% public transport demand increase

Private investment into transport infrastructure allows governments to reprioritise spending

For example, $6.8 billion investment into toll road projects frees up enough funds for

7 children's hospitals



The solution: integrated, multi-modal transport networks

Active transport, rail and roads are highly complementary. The world's best transport networks draw upon these modes to provide communities with equitable access to convenient, cost-effective public transport, roads and active transport.

14% trips to work*

Public transport network strengths

Are efficient for urban commuters travelling directly to employment hubs. They can:

- carry thousands of passengers
- operate well in densely populated corridors, point-to-point
- distribute demand across the network
- include buses that utilise the road network.

80% trips to work*

Road network strengths

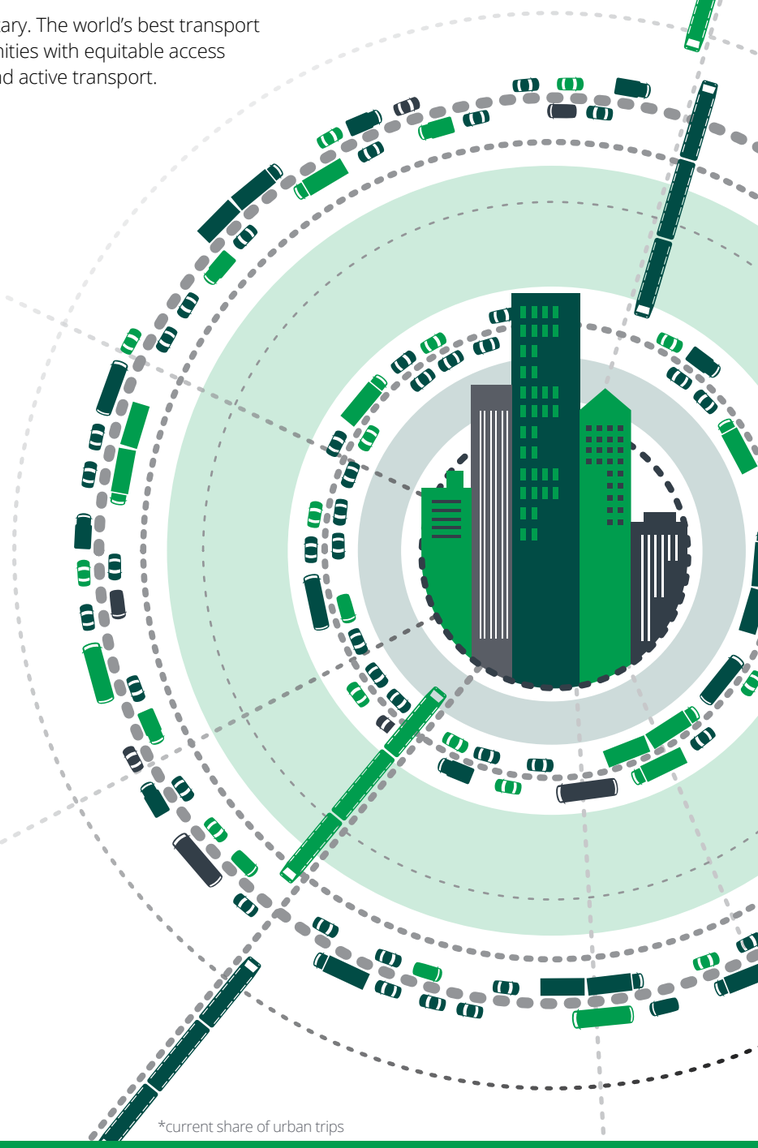
Efficient and effective for people, freight and service-delivery trips such as:

- orbital trips that move around the perimeter of a city
- cross-city trips that start on one side of the city and end on the other side
- multi-purpose trips involving multiple destinations.

6% trips to work*

Active transport strengths

Efficient for short distances and encourages community health and wellbeing.



*current share of urban trips

Shift the debate

Treating road and rail projects as mutually exclusive is counter-productive. This approach means we are missing opportunities to explore the benefits of combining road, rail, active transport and technology to deliver truly integrated, multi-modal transport networks.

Investment in both road and rail projects will help create cities with better connected, cohesive and accessible networks.

To achieve this, we must shift the debate from the ideological to the practical. We must focus on how we fund and deliver all the transport infrastructure Australia needs.

Contents

Terms of Reference

	SECTION WHERE ADDRESSED
Financial arrangements of existing and proposed private toll roads, and transparency, accountability and equity aspects of these arrangements	2
Interaction of commercial considerations of private toll road operators with federal and state transport and infrastructure policy	3
Any other related matters	1

Executive summary

Collaboration between the public and private sectors is a hallmark of successful infrastructure investment programs. Successive Federal and State Governments have acknowledged these partnerships as a vital component of delivering their transport agendas and have engaged with the private sector to accelerate the delivery of road projects via user-pays toll roads as one component of their broader multi-modal transport strategies.

Governments' ability to work with the private sector in a transparent and effective way to deliver city-shaping infrastructure is critical to the prosperity of Australia's cities and states; and for decades, Australia has championed a public private partnership (PPP) model that is the envy of the world.

With populations in Sydney, Brisbane and Melbourne forecast to double by 2060[1]; our already strained roads and public transport will reach breaking point. These are our busiest and most congested cities with aggregated congestion costs around $16.5 billion annually[2] and forecast to increase to $53 billion per year by 2031[3].

For our major urban centres to cope with this increasing demand, we need well-developed, integrated, multi-modal transport networks. This requires sustained and substantial investment across road, rail and active transport infrastructure and services. It is not simply a matter of choosing one mode of transport over another. To promote such an approach ignores the complex needs of our communities and transport networks, and will lead to inadequacies in how our cities are developed that will be felt by future generations.

It is clear that there is a significant transport infrastructure delivery task ahead. The overarching objective for stretched government balance sheets should be to deliver the most effective infrastructure using finite resources.

Significant private investment in infrastructure has broadened Australia's investment scope beyond what was achievable through government balance sheets alone, and in doing so, brought forward the benefits of these roads to the motorists and communities. The toll-road sector has exemplified the success of the PPP model, with the private sector contributing more than $34 billion to new projects in Australia over the past three decades.

This investment has delivered billions of dollars in economic benefits to Australia's largest cities through the efficient movement of people, goods and services. KPMG has estimated that over a 10-year period the toll road networks of Melbourne, Sydney and Brisbane have delivered more than $52 billion in direct economic, social and environmental benefits.[4]

These benefits mean travel-time savings, reliability gains and reduced vehicle-operating costs for households and commercial operators. The flow-on benefits of this included more than $37 billion in increased gross domestic product, which in turn flowed through to $15 billion in additional tax receipts to Australian governments over the 10-year period.[5]

There are also environmental benefits from demonstrated reductions in vehicle emissions from more efficient movements on the network and social benefits such as noise reduction and safety improvements. While improved access to economic centres has generated city-wide benefits with thousands of additional jobs created through increased activities.[6]

By any measure, the benefits from private sector investment into transport infrastructure have been significant and, importantly, this contribution has relieved pressure on public funding. Transurban's own project pipeline provides a ready example as it will remove $6.8 billion from government balance sheets, enabling governments to reprioritise their spending into other priority areas such as education, health and public transport.

The benefits, which flow from private sector partnerships, are demonstrated through a number of recent projects. The NorthConnex project in Sydney is frequently cited by governments and independent bodies such as Infrastructure Australia as an example of the private sector partnering with government to bring a much needed road project forward by a decade. Through the NorthConnex procurement process, time frames were significantly expedited and design and project scope was enhanced all at significantly less cost to the public.

An important enabler in accessing private sector expertise and innovation has been the introduction of market-led proposal (MLP) processes by state governments, which provide a clear and transparent set of guidelines for appraising private sector proposals.

Australians' toll road costs

93% of our consumer account customers pay ≤$100 per month

68% of our consumer account customers pay ≤$20 per month

54% of our consumer account customers pay ≤$10 per month

0.3% of our consumer account customers spend ≥$500 per month, the majority are commercial operators

Through these processes, Transurban has progressed two major construction projects (NorthConnex in Sydney and the West Gate Tunnel in Melbourne) and three upgrades to existing motorways, which are all focused on relieving urban congestion through the delivery of quality road infrastructure solutions. In all of our project proposals, we look for ways to address broader policy considerations such as providing active transport corridors, and urban green spaces, and reducing vehicle emissions at the ground level, while avoiding the need for the compulsory acquisition of homes.

Both of the major projects proposed by Transurban had their genesis in historic transport masterplans. They have now been progressed by governments as they respond to key population growth areas and provide better connections for freight, effectively removing tens of thousands of trucks from suburban streets each day.

As a long-term owner-operator of toll roads in Australia, we believe these projects are vital to the liveability and productivity of the cities we operate in and we have worked hard over many years to help make these a reality.

Central to the rigorous, multi-year appraisal of proposals is ensuring projects provide value for money for the community, determined, in part, from an open-book policy between the potential proponent and government.

The MLP process balances governments' ability to obtain this level of transparency to inform its accurate and thorough assessment of the benefits and costs of a project with the private sector's requirement to protect its intellectual property.

Supporting Australian businesses in the adequate protection of commercially sensitive information is imperative to ensure that governments can continue to run market-led proposal processes for the delivery of major infrastructure.

It is well documented that there is more than $2.3 trillion in capital available through Australian superannuation funds[7] looking for long-term investments. Adjustments to the process that serve to limit the safeguarding of sensitive information, may diminish the attractiveness of investment in Australian infrastructure, therefore delaying governments' ability to deliver on their infrastructure priorities. It could also have other unintended consequences such as contravening the ASIC guidance regarding the disclosure of prospective financial information for publicly-listed companies.

Any slowdown of projects would have macroeconomic impacts as cities face significant increases in population and debilitating congestion levels.

Governments' ability to continue to work with the private sector to deliver major infrastructure projects will be critical to Australia's continued economic prosperity in the years and decades ahead.

Recommendations

Continue to work with the private sector: Australia has one of the most developed markets for private sector participation in infrastructure in the world and Transurban commends the sophistication of the government departments that have created the effective models that facilitate this engagement. With Australia's global competitiveness as well as the productivity and liveability of our cities depending in large part on the effectiveness of our transport networks, government should continue to seek out private capital and expertise in the delivery of transport infrastructure projects.

Integrated transport planning: State and Territory Governments should continue to communicate integrated transport plans for each capital city, in a way the public understands. These plans should consider technology, regulatory and physical infrastructure solutions—so that the community can understand how individual projects across all modes of transport fit into long-term plans for their community.

Infrastructure pipeline: All governments should continue to pursue the development and publishing of a confirmed pipeline of quality projects, responding to genuine need, that have multi-partisan support. This pipeline should signal where challenges are known but solutions are being considered, so that government can continue to incorporate innovation from the private sector, academia and the community into their consideration of ideas.

Timeliness of reviews: Australian governments (through the Council of Australian Governments) should consider including recommended time frames for independent agencies (such as the Auditor-General) to review engagements with the private sector in order to enable continual improvement to the process.

Improve community understanding of processes: In the past five years, there have been a range of inquiries within the infrastructure sector, including:

- the Productivity Commission Inquiry into public infrastructure
- the Harper Competition Review
- Infrastructure Australia's Audits and Plan
- State legislative committee reviews and this current inquiry.

These inquiries provide opportunity to confirm that current infrastructure development and delivery processes provide adequate clarity on accountabilities, deliver value for money and uphold the public interest. They also provide opportunities to communicate with the public on these processes.

Governments as well as developers, owners, financiers and operators have a responsibility to advocate the successes and respond to identified learnings of these reviews.

About Transurban

20+
years delivering projects in Australia

2000+
employees and contractors working to build a better Australia

$9B
project pipeline, removing pressure from government budgets

5+
major projects underway creating ~17,500 jobs

70%
of investors are Australian who share in our business's success

Transurban has expanded both nationally and internationally to become a leading developer, operator and long-term concessionaire of toll roads. Our company was established in Melbourne in 1996 with the creation of CityLink.

Our company vision is "to strengthen communities through transport" and we partner with governments to deliver and manage key road infrastructure, and develop innovative and effective transport solutions that meet the long-term needs of growing cities.

Within Australia, we operate 13 toll roads in Sydney, Melbourne and Brisbane. In the USA, we operate two toll roads in the Greater Washington area. With almost two million trips recorded every workday, our Australian roads are among the country's busiest commuter and freight corridors.

To achieve our aim of providing smarter, safer and more sustainable ways for people to travel, we understand we must take an integrated perspective of the transport networks within which we operate.

Our long-term concessions with governments create a strong incentive for us to be proactive in how we manage our roads, and to ensure these public private partnerships meet the needs of the community both today and in the future. We do this through investing in smart motorway technologies that enhance the safety and efficiency of transport networks and using traffic data to understand the friction points on the road network where extra capacity may need to be created.

We strive to ensure our projects leave a positive legacy for the communities they serve and we are always looking for ways to deliver on the three pillars of our sustainability strategy:

- be good neighbours
- use less
- think long term.

As an Australian-owned and operated company listed on the Australian Securities Exchange, Transurban represents one of the most significant infrastructure investment opportunities available to Australians. Seventy per cent of our security holders are Australian superannuation funds and individual security holders. Our largest shareholder, UniSuper, manages the retirement savings of 400,000 education sector workers. These people, like all our investors, share in the success of our business.

We directly employ more than 2,000 people across Australia, and we foster an engaged and diverse workforce that can make a significant and lasting contribution to the cities and communities in which we operate.

HIGHLIGHTS FOR FY17
Dow Jones Sustainability Index (DJSI) World Leadership listing
DJSI Asia Pacific Leadership Index recognition for 11th year
Awarded DJSI Industry Mover Sustainability Award 2017
Top 10 rating for Employee Awareness and Support by the Australian Centre for Corporate Social Responsibility
Rated as "Leading" for sustainability reporting by the Australian Council of Superannuation Investors for the 9th year
NorthConnex project rated as "Leading" by Infrastructure Sustainability Council of Australia (ISCA)
CityLink Tulla Widening Project rated as "Excellent" by ISCA
Logan Enhancement Project rated as "Excellent" by ISCA
FTSE4Good Index member for 13th year
Signatory to the Voluntary Tax Transparency Code
Workplace Gender Equality Agency citation for the third year
2016 Award for the Best Action for Supporting Diversity in the ITS workforce
Top 20 rating (internationally) for gender equality by Equileap

Section 1:
Public private partnerships in Australia—demonstrating value

Working with the private sector has been a clear delineator in governments' success in delivery of its infrastructure agenda.

Governments' ability to work with the private sector to deliver city-shaping infrastructure is critical to the prosperity of Australia's cities and states; and for decades Australia has championed a public private partnership (PPP) model that is the envy of the world.

During the past 10 years, PPPs have generated $52 billion[8] in infrastructure investment (refer to Figure 1).

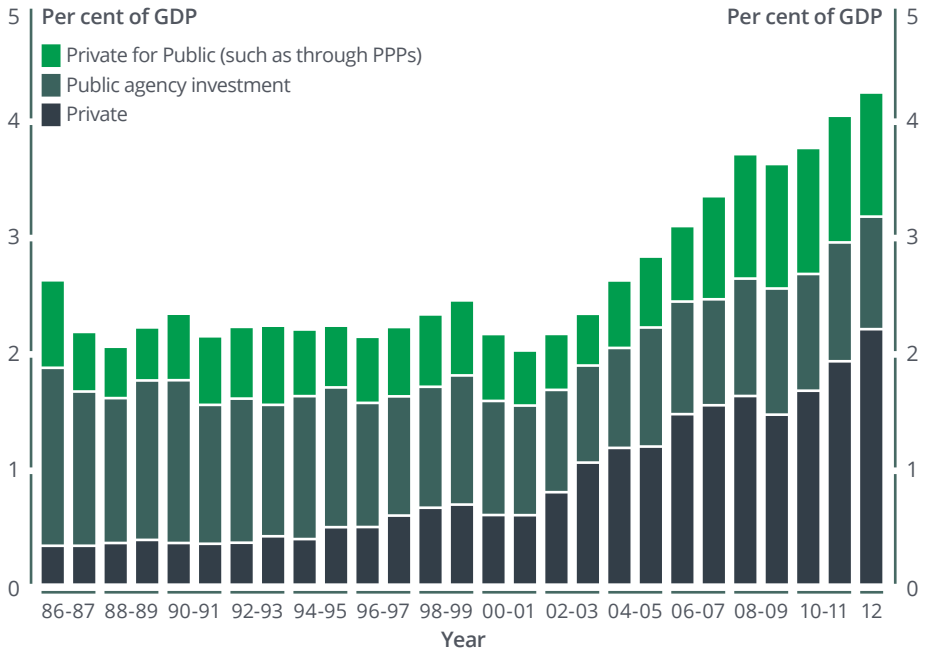
These partnerships have been vital in providing critical infrastructure that has underpinned the nation's prosperity and the living standards Australians have enjoyed.

Private sector participation in road projects has allowed governments and communities to benefit from the delivery of essential infrastructure without risk or financial burden for the government.

"If we are to achieve all the goals we have in public work we need to have public-private partnerships. Nobody can do it on their own, we need the private sector."

Former Prime Minister John Howard
(at the opening of Westlink M7 in 2005)

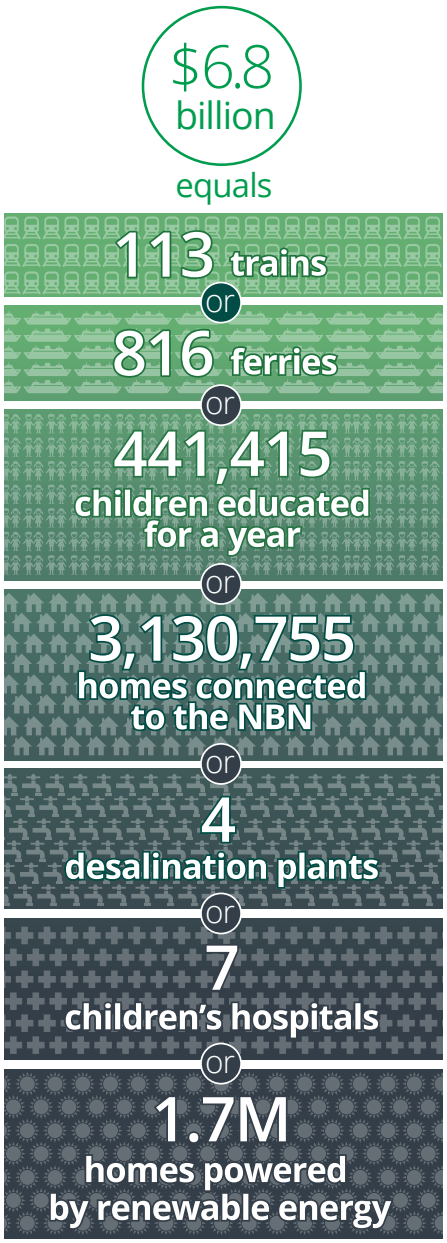
Figure 1: Total infrastructure investment in Australia



Source: ABS cat. no. 5204.0, 8762.0 and Business Council of Australia (BCA).
Substantial increase in infrastructure spend has been supported by greater contributions from the private sector.

Figure 2: Private sector contribution

Transurban and its partners' current financial contribution to infrastructure projects in Australia.



Freeing up government balance sheets

Public private partnerships in road projects, where the private sector takes the patronage risk, allow governments to deliver essential infrastructure to their communities, while keeping the public balance sheet free for other priorities.

Since the delivery of the Sydney Harbour Tunnel, Australians have benefitted from almost $75 billion worth of infrastructure delivered through PPPs[9] (refer to Figure 3).

The toll-road sector has exemplified this achievement where PPPs have delivered more than 15 motorway, bridge and tunnel projects and numerous upgrade projects to date. The private sector has contributed more than $34 billion to these projects during the past three decades.

Transurban's current Australian development pipeline represents approximately $9 billion. This pipeline includes the funding of five critical infrastructure projects in NSW, Victoria and Queensland. Transurban and its partners will fund $6.8 billion of this pipeline with the remainder coming from governments (refer to Figure 2).

With government budgets' under pressure, our investment in these projects means they can focus their own spending on taxpayers' expressed priority demands for health, education and public transport infrastructure and services.

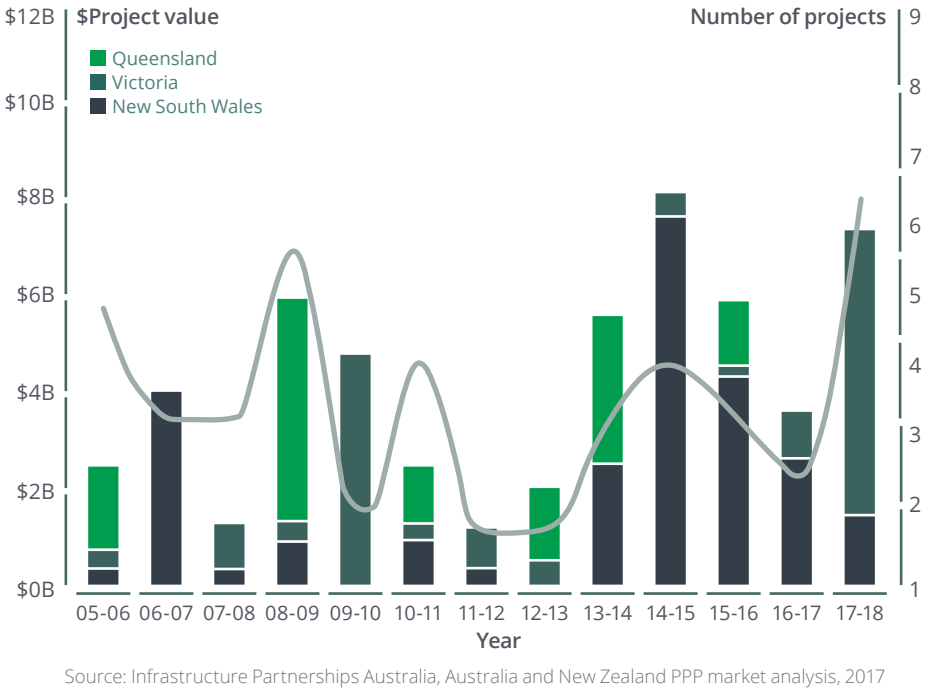
The PPP procurement model provides the private sector with the flexibility to continually enhance the existing road network throughout each project's concession period. Importantly, this model also provides clear motivation for the private sector to ensure the roads it operates continue to deliver value to road users.

In NSW, Transurban and its partners have invested approximately $1 billion to enhance the Hills M2 and M5 West motorways during the past five years.

We are currently undertaking the Logan Enhancement Project in Queensland, which will increase the motorway's capacity, improve travel times and safety through the addition and realignment of lanes and ramps. The $512 million project is being delivered at no cost or risk to government.

Similarly, Transurban has partnered with the Victorian and Federal Governments in the $1.28 billion CityLink Tulla Widening Project, which will increase lane capacity and provide other improvements along one of Melbourne's busiest freight and commuter corridors. Transurban is funding $1 billion of the project cost and, as the operator for CityLink, we are working to minimise disruptions for motorists during construction.

Figure 3: Public Private Partnerships by year



Source: Infrastructure Partnerships Australia, Australia and New Zealand PPP market analysis, 2017

Australia's transport funding future

Australia is facing the demands of a growing and increasingly urbanised population. At the same time, our major road-funding source, namely fuel excise, is diminishing as we move to more fuel efficient and electric vehicles. While transitioning the national fleet to these type of vehicles is an important step towards a more sustainable future that will help protect the environment, at the same time this move underpins the imminent expiry of Australia's fuel-sale-based funding stream.

Fuel excise currently contributes 57 per cent of Australia's total road-related revenue.[10] However, this revenue source has been decreasing steadily for years (refer to Figure 4). Despite growth in vehicle kilometres travelled, revenue raised from fuel excise in 2015 was less than in 2001, in real terms[11]. The expected uptake of electric vehicles will likely further reduce fuel excise revenue. Recent CSIRO modelling highlighted this adoption as the key factor in reducing fuel excise revenue.[12]

The ongoing decline of fuel excise will present further challenges to government budgets. Australia's backlog of infrastructure projects has been estimated at up to $800 billion[13], increasing the urgency of creating a more sustainable funding approach.

A road user charging system that replaced all current charges such as fuel excise, registration and associated costs has been recommended by a range of bodies including the Productivity Commission and Infrastructure Australia.

Such a system offers a sustainable funding solution and a direct link between use and the cost of constructing, maintaining and operating road infrastructure.

Introducing a road pricing system would also help to address inherent inequities in the current system. Applying a standard rate per litre of fuel consumed means that vehicles taking the same journey are charged differently, depending on their fuel efficiency. Motorists with less fuel-efficient and typically older model vehicles are effectively being charged at a higher rate than those with more fuel-efficient (or electric) and typically newer vehicles for equivalent use of the road network, raising equity concerns for the whole community.

Additionally, to compensate for reductions in funding from fuel excise, state governments have progressively increased vehicle registration and licence fees.[14] With charges generally set at fixed rates, existing licence fees also present equity challenges, with infrequent and low-demand motorists subsidising frequent, high-demand motorists.

In 2016, Transurban completed Australia's first practical study to examine drivers' preferences and awareness when it comes to road funding in Australia. The results of the almost 18-month long study indicate a user-pays system could work in Australia and could generate a sustainable funding source to meet our future infrastructure needs.

Furthermore, the study demonstrated the flexibility a user-pays system could offer in enabling a wide range of price signal options to help manage demand. Most importantly, direct feedback from the study's 1,635 participants suggest Australians are open to discussing user-pays as a viable alternative to the current system and provide a number of valuable insights on what is important to them in the design of any replacement system.

The introduction of any new system would need to provide protections for vulnerable and disadvantaged community members; and consider differences between geographical zones; and urban and regional road users.

The success of road-funding reform would be heavily dependent on an effective and integrated transport planning approach that takes into account charging options for roads as well as access to genuine and affordable transport alternatives.

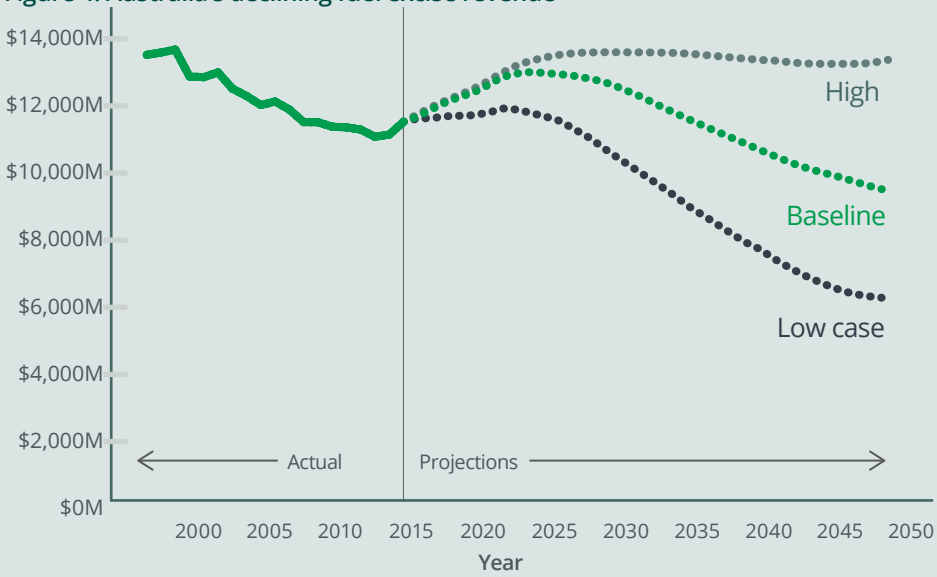
Beyond the availability of public transport alternatives, wider societal factors such as standard work hours, school operating hours and retail opening hours also influence the amount of choice road users have in when and how they drive.

In November 2016, the Commonwealth Government announced a study into the challenges and limitations of the current system to be headed by an independent expert. Transurban, as well as the broader transport and infrastructure sector, has welcomed this commitment and look forward to participating in the review process.

We believe the introduction of a road charging system would lessen the pressures and politics that can come from scarcity of funding and allows Australia to plan ahead for the next half century. Furthermore, it will encourage more efficient use of infrastructure and lessen the long-term investment burden.

More information on Transurban's Road Usage Study is available at changedconditionsahead.com/

Figure 4: Australia's declining fuel excise revenue



Source: Transurban analysis; Bureau of Infrastructure, Transport and Regional Economics, Australia Infrastructure Yearbook 2015; CSIRO (Report for the NTC), Projecting future roads transport revenues 2015–2050, May 2015

"A road pricing inquiry is a sensible step to examine the options but it must address the issues of fairness and environmental impact."

Senator Janet Rice, Senator for Victoria
November 2016

International toll road comparisons

The development of Australia's toll road networks has been carefully considered by government and the private sector to ensure they provide value to the community and benefits to motorists and freight operators.

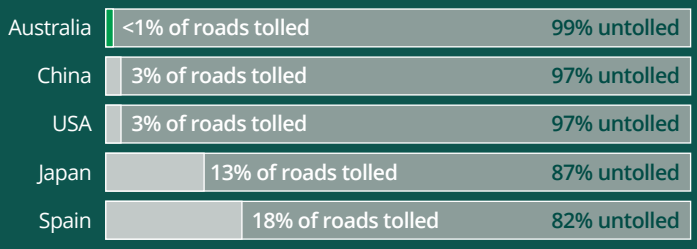
Across Australia, toll roads collectively comprise approximately 240 kilometres of the 50,000-kilometre motorway network. This is just 0.5 per cent of the motorways that passenger and freight vehicles travel on every day.[15]

At a state level, across the eastern seaboard, the tolled motorways of NSW, Queensland and Victoria comprise less than one per cent of the broader motorway network.

Interestingly, the proportion of toll roads in Australia is significantly lower than in other developed countries.

In Spain, Japan, the United States of America and China, toll roads make up far more of the broader motorway network than in Australia (refer to Figure 5). Notably, in Spain almost 20 per cent of motorways are tolled roads.

Figure 5: Toll road network as a percentage of broader motorway network

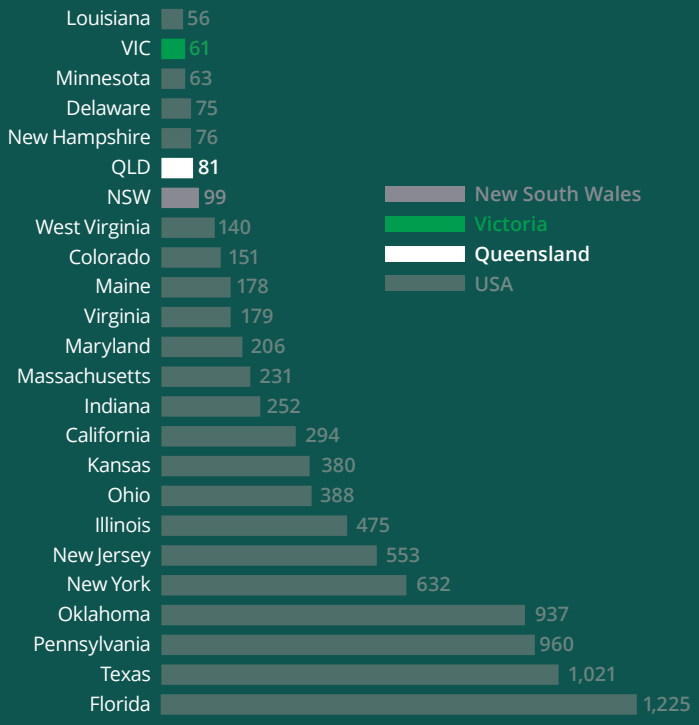


Source: Transurban analysis based on government data

Australia also has fewer kilometres of toll roads at a national and state level than other developed countries.

Figure 6 compares the total tolled kilometres across the Australian states of Victoria, Queensland and NSW with a range of US states.[16]

Figure 6: Total tolled kilometres across Australian and American states.



Source: US Department of Transportation, Federal Highway Administration, Highway Statistics, 2015; Bureau of Infrastructure, Transport and Regional Economics, Yearbook, 2016

Transferring risk from government

The injection of private capital and expertise has also allowed governments and communities to benefit from the delivery of essential infrastructure projects—while freeing governments and, ultimately taxpayers, from taking on risk.

Private sector involvement in new projects transfers the construction and patronage risk away from governments. Both these risks are significant, especially in a sector that has experienced failures. Australian examples of road project failures are well known, including projects where patronage has not reached expected levels.

The failures of projects such as the Cross City Tunnel and Lane Cove Tunnel (New South Wales) and Clem7 and AirportlinkM7 (Queensland) hold lessons for both investors and governments. However, the outcome of these projects does demonstrate the value governments gain when their risk is transferred through a PPP model (refer to Figure 7).

Private investors lost equity when their projects failed to meet their patronage forecasts – but the use of PPPs protects taxpayers from the impact of overly optimistic patronage forecasts. While private investors bore the risk—and the losses—taxpayers benefitted with delivery of and access to improved networks and new, world-class roads and tunnels.

Transurban believes private-sector operators with stewardship of the roads they build and manage are best placed to estimate network traffic, to understand operations and maintenance costs and to bear the project risk. Private sector operators have a vested interest in ensuring their projects are an ongoing success—continually offering value to customers, government partners and investors.

Research shows that the discipline, project governance and risk arrangements instilled through a PPP arrangement improves a project's cost and time performance over traditionally procured projects.

A study undertaken by the University of Melbourne and the Allen Consulting Group found that non-PPP projects had cost overruns of 14.7 per cent compared with only 1.2 per cent for PPPs.[17] Time performance was even better for PPPs. Using a value-weighted average, non-PPP projects were delivered 23.5 per cent behind time—and PPPs were delivered 3.2 per cent ahead of their construction schedule.

This study also found evidence suggesting PPPs were more transparent than traditionally procured projects, as they provided more publicly available data.

Bringing projects to communities sooner

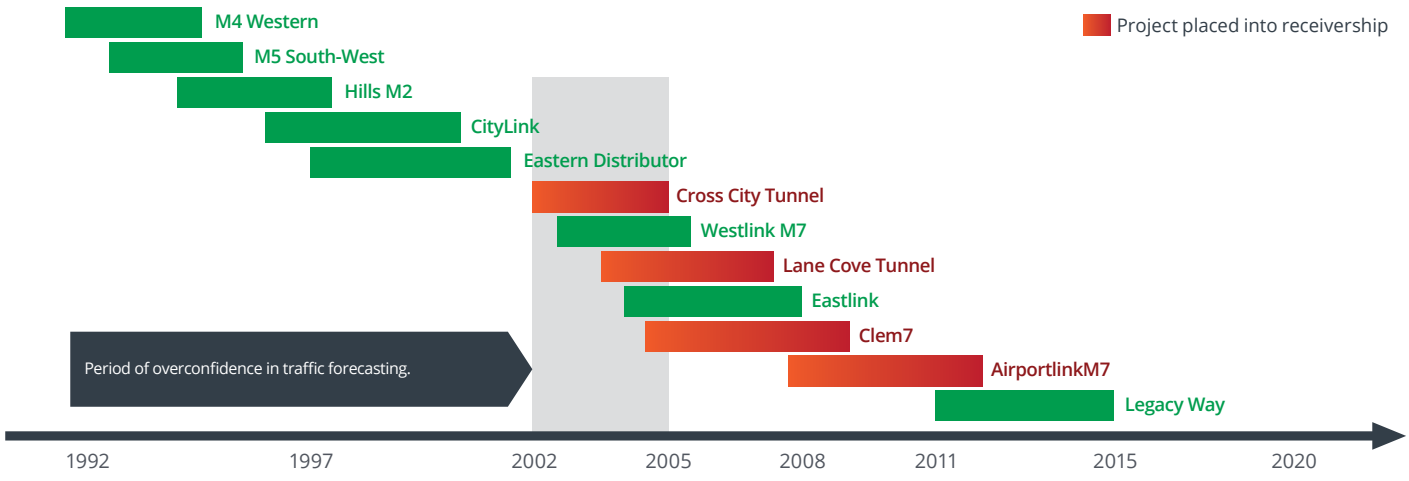
Public private partnerships are a powerful tool for incentivising the private sector to achieve the best outcomes for its government partners, communities, customers and investors. The private sector has proven itself as a strong force for driving efficiency and innovation in design, construction and operations and for its comprehensive community and stakeholder engagement programs.

Private sector investment has accelerated essential infrastructure projects by years—and sometimes by decades—enabling governments to deliver value and benefits to the community sooner than would otherwise be possible.

For example, the NSW Government's 2012 State Infrastructure Strategy had scheduled the development of the M1-M2 link (now NorthConnex) for 10-20 years in the future. Transurban's unsolicited proposal to the NSW Government in 2012, potentially brought this project forward by more than a decade. It is now scheduled for completion in 2019 and will be delivered at a significantly lower cost than the original government proposal.

With the flexibility afforded by the unsolicited proposal procurement process, NorthConnex's bid process was accelerated: tenders were submitted in December 2013 and the preferred design-build contractor was selected in March 2014. The project's flexible procurement process also produced a practical design solution that will meet the growing transport needs of Sydney's northern suburbs.

Figure 7: Most major greenfield projects were funded as demand-risk PPPs



Enhanced project scope

Through PPPs, the government sets the task and lets the private sector provide the solution.

Transurban takes a holistic view of the operation and development of the broader road network in ways that create value for governments and communities and benefit road users.

Often this results in a project scope that incorporates resolving bottlenecks or accessibility issues in neighbouring parts of the network, which provides the community with an enhanced travelling experience.

Transurban also looks at broader government policy considerations that could be addressed through the project.

Transurban took this approach in developing the West Gate Tunnel Project proposal. Through reviewing strategic road-option alignments identified in government policies, we were able to propose a second river crossing that had a lower impact, including no acquisitions of homes, either for permanent structures or for construction purposes. The project has also been designed to minimise impacts on public open space, sensitive ecological areas and community and recreational facilities.

We also look at ways a project could incorporate technology solutions to enhance network safety and efficiency. Smart motorway technologies use real-time information to evaluate traffic conditions and actively manage demand on the asset.

This kind of system was installed as part of the M1 (Monash, CityLink and Westgate) Upgrade in Melbourne in 2011, which created an integrated traffic management network along the 75-kilometre corridor shared by VicRoads and CityLink, and has allowed 20 per cent more cars to travel on each lane in that corridor. That is equivalent to adding more than half a lane to the motorway through technology alone. The installation of smart motorway technologies has also significantly enhanced road safety by reducing traffic incidents by up to 20 per cent.

We have also proposed enhanced project scopes that "future proof" the motorway at the design stage, which delay the need for costly upgrade projects for as long as possible. For example, NorthConnex will deliver twin, nine-kilometre tunnels, consisting of two traffic lanes with a shoulder, but with scope to widen to a three-traffic-lane tunnel if future traffic growth requires it.

Additionally, we also look at what other kinds of infrastructure the project could deliver for the community. These have included the creation of urban green spaces or encouraging active mobility through walking and cycling paths—such as the 14 kilometres of new and upgraded paths that will be delivered as part of the West Gate Tunnel Project. Section Three of this submission further outlines additional benefits of toll road projects for governments, road users and communities.

Other benefits from private sector involvement in toll road projects

Technology investment

On our foundation asset, CityLink in Melbourne, Transurban pioneered the implementation of one of the first fully-electronic tolling systems in the world, minimising congestion by removing the need for motorists to stop at toll booths.

As we acquired interests in a number of Sydney toll roads, this method was extended across the portfolio both to greenfield developments and in progressive conversion of existing toll roads in the network. Electronic tolling was already installed across the Brisbane toll roads we acquired in 2014.

Across all of our networks, we continue to actively manage our assets by investing in technology such as lane-use management systems and ramp metering to improve traffic throughput, travel speeds, reliability and safety for drivers. On our US Express Lanes assets (refer Appendix 4), we have introduced dynamic tolling to manage traffic flow and customers are realising travel-time savings of up to 40 minutes a day.

Smart motorway technologies have the potential to further improve efficiency and safety across urban motorway networks. These technologies also have given us the ability to collect more roadside and mobile data, which is used to inform operational effectiveness.

We combine data from our roadside systems with GPS data from TomTom to monitor traffic volumes, travel times and speeds on our roads and across the broader road network. Comparing the data month-on-month and year-on-year, provides a holistic view of how the network is performing and how motorists use our roads. We can detect friction points and identify potential areas for enhancement that will improve congestion on other areas of the road network.

Data analytics such as this provide better understanding and allow for better decisions, clearer priorities and the ability for real-time management of the broader road network. The outcome could be a new road project, an asset upgrade, an investment in a technology solution or changes to traffic management as decided by government.

Safety

Road accidents cause serious injury to people, resulting in a significant personal, social and economic burden to families and the community.

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

The serious injury rate per 100 million vehicle kilometres travelled on Transurban's roads is estimated to be up to 80 per cent below comparable state averages on the broader network.

In what is considered a leading form of measurement on road networks, we track our road safety performance using a Road Injury Crash Index (RICI), measuring the frequency of serious road injury crashes on our roads.

In FY16, the RICI across all Transurban assets was 4.58 injury crashes per 100 million vehicle kilometres travelled, which makes for a significant contribution to community safety.

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 incidents.

Some of the key ways in which we seek to manage and improve road safety include:

- effective road design and traffic management
- road safety audits
- monitoring of road safety statistics including crashes, breakdowns and other on-road incidents
- implementing improvements based on information gathered
- promoting public awareness of road safety issues and education campaigns.

Reliable network—incident clearance

Rapid and effective response to any incidents on our roads is fundamental to ensuring and minimising traffic disruptions, which can affect the broader network.

Transurban's in-house response teams operate well below the target response time for clearing incidents on Sydney roads with accident clearance times on the motorways 30 per cent quicker than the NSW Government's Traffic Management Centre target clearance times.

In Melbourne, a new fleet of rapid response vehicles and associated changes to the practices of our responders have reduced clearance times by more than 50 per cent and improved safety for our customers and staff.

Transurban Road Safety Centre

As a part of our commitment to road safety we have partnered with Neuroscience Research Australia (NeuRA) to launch the Transurban Road Safety Centre.

NeuRA is one of the world's leading centres of neuroscience research and the new centre combines world-class research with state-of-the-art facilities and equipment to study practical injury prevention strategies.

The centre includes a new road safety test site equipped with a test sled capable of reaching speeds consistent with those experienced in real life crashes.

This partnership will deliver a number of key pieces of research with the first being focused on improving safety for older drivers. With an ageing population in Australia, drivers over the age of 70 currently account for over 14 per cent of driver fatalities, making research into this area an important focus.

Additional research will also be undertaken into the safety of motorcyclists, which represent 22 per cent of serious causalities on Australian roads, as well as into the safety of young adults travelling in the rear seat and their relationship to seatbelts.

We hope our ongoing partnership with NeuRA will lead to improvements in safety standards for all motorists across Australia.

Helping government prepare urban road networks for an automated future

The automotive industry is confident that we are just 5 to 10 years away from driverless vehicles being on the market. The arrival of new vehicle technologies will rapidly change the way Australians use the road network and it is vital that government and industry work together to ensure road infrastructure is ready to meet this demand.

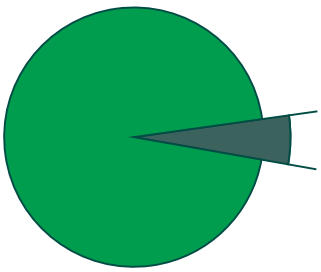
To this end, in late 2016 Transurban, in partnership with the Victorian Government (and with support from RACV), announced an extensive trial of connected and automated vehicles along the Monash-CityLink-Tullamarine corridor in Melbourne. This three-phased program of on-road, real-world trials will explore the interactions between road infrastructure and a range of automated vehicle technologies under motorway conditions.

Commencing in mid-2017, the first phase of the program will collect insights into how a selection of vehicles with automated features use urban road networks and interact with the motorway environment including tunnels, road works, congestion, variable road signs and line markings.

In parallel, the program will also investigate community expectations of the impacts from these technologies through a variety of research tools.

These two streams of work will help develop an understanding of how to prepare road infrastructure, operations, regulations and the community for the integration of new vehicle technologies into our transport system.

Figure 8: The majority of customers have tolling arrangements in place



95%

of customers have arrangements in place

5%

of customers have no payment arrangement and require additional services/ enhancements

4%	Resolved without proceeding to enforcement
<1%	Progressed to infringement process

Customer service excellence

Transurban is a customer-focused business with a commitment to excellence the community would expect from a top 20 ASX-listed company.

We have more than five million customers and four retail brands across Australia, including Transurban Linkt (formerly Roam Express) and Roam in New South Wales, go via in Queensland, and CityLink in Victoria.

Our customers and their experience of our service on and off the road drives our customer service program and all of our service activities and initiatives reflect our core customer promises to:

Make it easy	**Show we care**	**Add value**
Everything we do will be easy to use and understand	We will listen, be transparent and flexible	We will create meaningful experiences for our customers

Delivering on these promises is the daily focus for our 800 dedicated customer service and customer experience team members and each day they manage around:

- 60,000 visits to our websites
- 11,000 customer calls
- 400 live web chats
- 4,000 retail outlet partners.

Our customer satisfaction levels are consistently high across all of our retail tolling brands (see Figure 9) and we are committed to continuously improving the products and service we offer our customers. Transurban's complaint handling framework has been independently certified as compliant with Australian and International Standards by the Customer Service Institute of Australia (CSIA).

Our Voice of the Customer Program is designed to understand customer sentiment across all channels and informs a continuous improvement program. Through this program we receive more than 15,000 responses each month, which help us to enhance our customer service performance.

Payment of tolls

Across Sydney, Melbourne and Brisbane an average of 95 per cent of customers travel on toll roads with a valid arrangement for payment of tolls.

If there is no valid arrangement in place, then a toll invoice will be issued. The issuing of toll notices and the resulting enforcement processes if the toll remains unpaid are regulated through the contractual agreements in place with state governments.

More than 90 per cent of infringement recoveries are retained by the state authority. Transurban does not make profit and rarely recovers costs through this mechanism. Unlike a phone or electricity service, we can not suspend supply of the service if a debt remains unpaid. The infringement process is the last and least preferred option available to us.

Prior to an infringement process commencing, we proactively contact customers across a range of communication channels to help them pay their toll notices and resolve any outstanding payment issues they may be experiencing. Less than one per cent of transactions result in an infringement process (refer to Figure 8).

We are continuously working to make it easy for travellers to have a valid arrangement, pay on time and avoid additional fees through a broad range of initiatives including:

- **providing more ways to pay**—including online, over the phone, via a mobile app or in person at one of the participating outlets in Australia
- **new product choices**—designed to meet the different needs of frequent and casual users
- **preventing avoidable fees** with a range of account options
- **offering a financial hardship policy** for customers experiencing payment difficulties
- **proactively contacting customers via a range of channels** (SMS, email, phone and post) if we identify an account in low or negative balance or non-payment for travel
- **offering additional customer initiatives**—such as our First Time Forgiveness Program
- **working with our stakeholders**—including government partners, to identify opportunities to improve customers' experience.

As part of our focus on providing customers with exceptional standards of service that respond to their changing needs, in May 2017 we upgraded Roam Express to Transurban Linkt. The new brand includes a range of service offerings customers tell us they prefer. These include a new tagless account option that has been designed for casual users; simplified fees for customers to improve their experience; and a mobile app for iOS and Android phones—allowing customers to manage their accounts on the go. All of these measures are designed to make it simpler for customers to manage their tolls and accounts, and to help them avoid fees and charges.

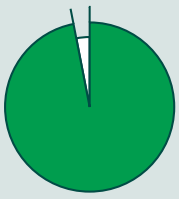
Assisting customers with payment difficulties

To assist customers having difficulty with toll debts, Transurban has had a Hardship Policy in place for more than a decade. In the current climate of increasing cost of living pressures, Transurban is exploring what more can be done to assist people with good reason to receive targeted assistance.

We are focused on continual improvement of customer assistance, including the recent appointment of a Customer and Communities Advocate to add greater internal focus on our customer assistance efforts, and more external engagement to inform and educate the community on how tolling debts are best avoided.

Figure 9: Customer service performance (FY17)

First call resolution



Overall
97%

CityLink	97.4%
Roam	97.7%
Transurban Linkt	96.7%
go via	96.8%

Grading of service—target 70%

Percentage of calls answered within 30 seconds.

Overall
83%

CityLink	83.7%
Roam	88.8%
Transurban Linkt	89.8%
go via	79.8%

Customer satisfaction (out of 5)

Overall 4.1 stars*

CityLink	4/5
Roam	4.1/5
Transurban Linkt	3.8/5
go via	4.1/5

*Weighted average based on volume

Section 2:
Engaging with the private sector in the delivery of major projects

State and local governments across Australia have established rigorous processes for accessing private sector innovation and expertise in project delivery in a way that drives value for the community. The market-led proposal (MLP) processes, also called the unsolicited proposal process in NSW, currently in place exemplify this engagement.

"We're making the process more transparent, protecting the community's interest and providing certainty to parties who approach the government with job-creating ideas."

Hon Tim Pallas MP, Victorian Treasurer
February 2015

"The government can receive unsolicited proposals at any time and has a thorough process in place to assess such proposals."

Hon Mike Baird MP, former NSW Premier
September 2016

"Market-led proposals allow the government and the private sector to work together to deliver Queensland's next-generation infrastructure projects."

Hon Anastacia Palaszczuk MP, QLD Premier
September 2015

"The new guidelines will detail clear processes with the highest level of probity and any unsolicited proposals will be subject to extensive value for money assessments."

Hon Peter Ryan MP, former Victorian Deputy Premier and Minister for State Development
February 2014

Transurban has delivered, maintained and operated major infrastructure projects in Victoria, NSW and Queensland, and has developed significant expertise in designing projects that meet the needs of both communities and governments. Our customers are our communities, and we place great emphasis on listening to their needs and feedback around major infrastructure projects.

We are also highly aware that responsive projects—projects designed to meet community and government needs—continue to generate value for all stakeholders—community, government and shareholders—over the long term.

This awareness extends to our development of ideas and solutions, including proposals to build new motorways, or upgrade existing motorways, which governments have identified as essential to the future prosperity of their city, the state or to the nation.

Through state and local governments' MLP processes, Transurban and many other private organisations from across multiple sectors, have developed and proposed ideas to governments—such as the development of the "Wynyard Place" Brookfield Office Properties Development and the partial long-term lease of Ausgrid in Sydney. Governments, in turn, appraise these proposals through clear guidelines that are publicly available.

Process rigour

In the three states in which Transurban operates, Victoria, NSW and Queensland, state (and some local) governments have established guidelines for processing of MLPs. Transurban is currently progressing road projects in each of these states (refer to Figure 11).

The process for reviewing and responding to MLPs is so rigorous that very few proposals have progressed to the delivery stage, with many being declined by government or referred to alternate government processes (refer to Figure 10). For example, Transurban has submitted three proposals under the unsolicited proposal process, which were not progressed.

Each of the projects we have proposed that have progressed through the MLP process, have been developed and negotiated with government over multiple years.

Figure 10: Total number of market-led proposals at key stages of the process by state (as at July 2017)

	VIC	NSW	QLD
Proposals received	No data published	150	140
Projects progressed to detailed proposal stage	8	9	6
Proposals progressed to contractual close	2*	5	1

**An additional three proposals are in final negotiations*

Transparency in the market-led proposals process

Market-led proposal frameworks are designed to encourage the private sector to approach governments with innovative ideas such as infrastructure and service delivery solutions. Governments assess these proposals via clearly defined, multi-stage processes. A key criterion of a MLP is that the proponent must show uniqueness. All assessment processes are detailed in publicly available guidelines.

Proposal-assessment guidelines provide for the treatment of commercial-in-confidence information and for the appropriate treatment of intellectual property. These guidelines allow for the free exchange of information between the government and the organisation making the proposal. Proponents provide commercially sensitive information with the understanding and assurance this information will be handled in accordance with the proposal guidelines. This is a fundamental tenet of the MLP process.

Additional layer of process rigour

State governments who use MLPs also comply with national PPP guidelines endorsed by the Council of Australian Governments.

Australian jurisdictions have established guidelines and methodologies for the assessment, planning, procurement and delivery of infrastructure.

These guidelines ensure some level of consistency across all Australian jurisdictions and provide information to industry and the community on the processes and considerations of relevant government agencies when planning and delivering infrastructure including:

- value for money
- public interest
- risk and commercial matters and accountabilities.

Regardless of the procurement method, ordinary planning and environmental approval processes are required in accordance with the relevant legislation.

The guidelines specify what information will be made available to the public, and when this information will be shared with the public. Figure 12 summarises the key decision points within the Victoria, NSW and Queensland proposal review processes. This illustration also details the proposal and evaluation information made publicly available at relevant decision points.

All MLP processes provide alternative pathways for proposals that do not meet the assessment criteria. If the assessment committee sees merit in a proposal that does not meet the MLP assessment criteria, the committee may refer the proposal to another government agency. Referred agencies may then offer these proposals to the market for delivery.

Figure 11: Transurban's project proposals currently being progressed (as at July 2017)

PROJECT	GOVERNMENT	PROPOSED	STATUS
NorthConnex	NSW State Government	2012	Under construction
CityLink Tulla Widening Project	VIC State Government	2012	Under construction
West Gate Tunnel Project	VIC State Government	2015	Stage Four
Logan Enhancement Project	QLD State Government	2015	Under construction
Inner City Bypass Upgrade Project	Brisbane City Council	2015	Under construction

Assessing value for money for the community

Ensuring a project provides value for taxpayers is a key component of the MLP assessment process. Market-led proposal guidelines outline the assessment criteria and governance structures to ensure projects are evaluated against, and will deliver results that are in the best interests of the state. Key MLP evaluation criteria generally include an assessment of the proposal's:

- value for money
- alignment with government objectives and plans
- unique attributes.

Assessment processes include both qualitative and quantitative assessment methodologies, and generally include:

- benchmarking exercises to identify public sector equivalents and realistic alternatives
- reviews of individual drivers such as benefits, scope, innovation, timelines and risk allocation
- analysis of the costs and benefits
- value-for-money and cost-reasonableness assessments via open-book, full-access reviews and independent reviews of proposal costs.

During the MLP assessment process, a probity adviser may be appointed to provide an independent assessment. Probity advisers are responsible for scrutinising procurement processes to ensure they:

- are conducted with integrity
- are transparent
- adhere to the relevant procurement guidelines.

Probity advisers are appointed through established procurement approaches, with appointments based on merit and expertise in the area. Probity advisers work independently of government project teams and provide government teams with detailed reports summarising their findings at the end of the procurement process.

Governments' independent assessment processes

In March 2012, in accordance with the NSW Government's Unsolicited Proposals—Guide for Submission and Assessment, the NorthConnex proposal was measured against the NSW Government's three-stage assessment framework. An initial agreement to progress the proposal was reached in 2013.

In 2017, the NSW Auditor General independently assessed NorthConnex as a value-for-money project for Australian taxpayers, road users and the NSW Government.

The Auditor General found that a robust—and independently verified—process was used to estimate the project's initial scope and budget.

The Auditor General also found the impact of toll concessions were consistent with the objectives detailed in the NSW Government's 2012 NSW Long Term Master Plan. Further, the toll concession calculations were found to be based on the best available independent traffic data.

The Auditor General recommended that the unsolicited proposal guidelines should be updated to include guidance on time frames for reviews and reports required within the framework.

The Victorian process has also been through independent reviews. In 2014, the Victorian Auditor-General's office (VAGO) published an audit on the Impact of Increased Scrutiny of High Value High Risk Projects, which recommended that high-value unsolicited proposals should be covered by the government's High Value, High Risk (HVHR) process. This recommendation was adopted and the market led proposal material updated to incorporate the HVHR process within the review and progression processes for private sector proposals.

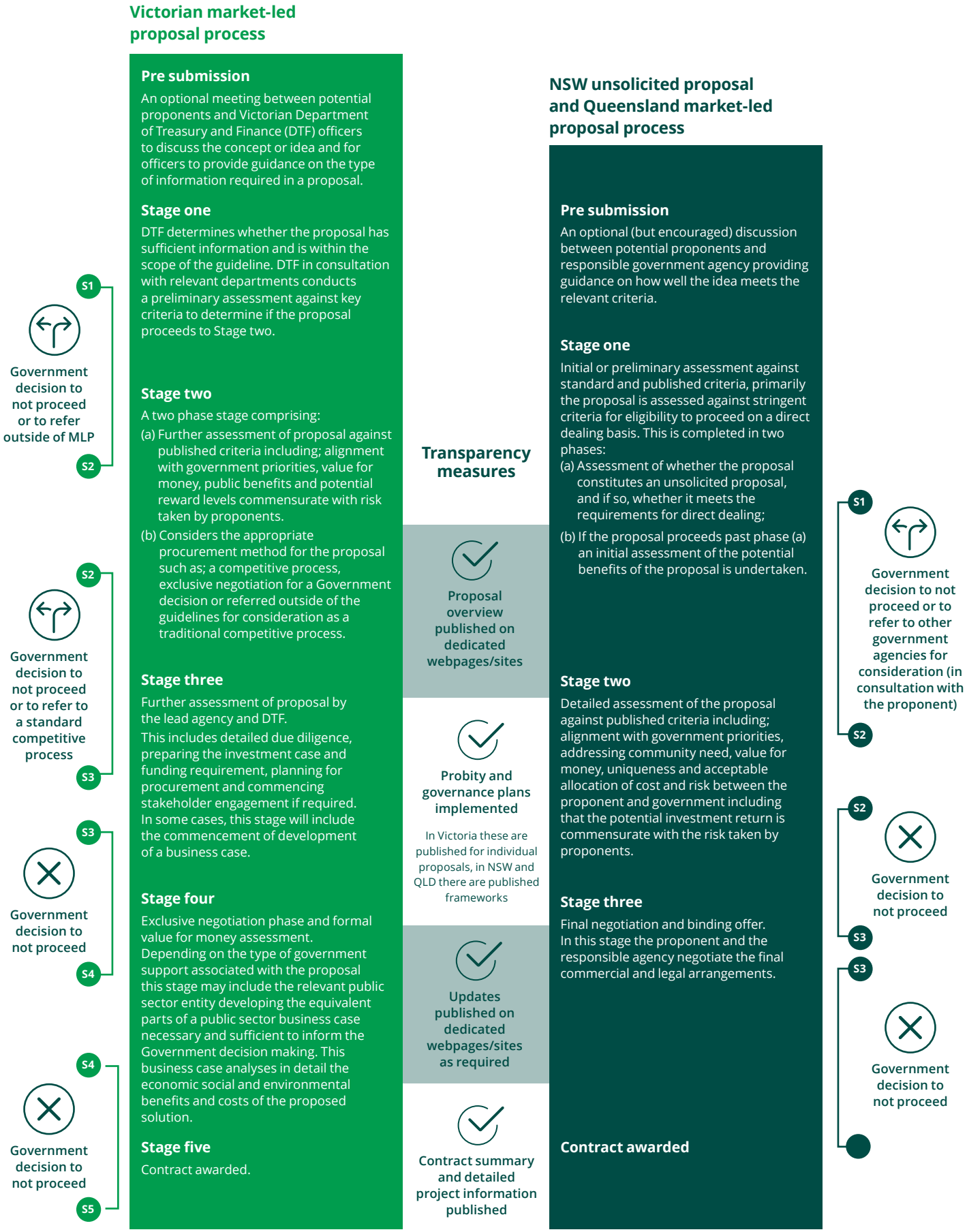
In August 2015, the Victorian Auditor-General's office released an audit entitled, Applying the High Value High Risk Process to Unsolicited Proposals, which examined the application of this updated approach to two unsolicited proposals already in development one of which was the CityLink Tulla Widening project.

VAGO found that the additional scrutiny of the HVHR process had "partly or fully assured the project costs, time lines, risks, governance, project management and procurement" for the CityLink Tulla Widening project. However, the audit also made recommendations in regards to assurance about the deliverability of the proposal's benefits, assessment of alternative funding options and adequacy of engagement with stakeholders regarding the likely impacts.

The Victorian Department of Treasury and Finance (DTF) introduced revised guidelines in November 2015 comprehensively responding to this feedback, including the requirement for relevant agencies to analyse costs and benefits of the project, independent of the proposals.

The subsequent October 2016 audit has confirmed that DTF and the Department of Economic Development, Jobs, Transport & Resources have "commenced appropriate actions to address all of the recommendations" but also indicated VAGO was as yet unable to assess the consistency of application of the revised guidelines as no projects had, as yet, proceeded to the final negotiation stage under the revised guidelines.

Figure 12: Key decision points and transparency measures within the Victoria, NSW and Queensland proposal review processes



Source: Transurban analysis based on publicly available information

Why commercial-in-confidence arrangements are essential

Private sector companies operate in a commercially competitive environment where cost-sensitive information such as return expectations and projected profits, if shared, could give competitors (potentially including overseas corporations) an unfair advantage or could impede the competitiveness of future procurement processes. The MLP process, like all private sector engagement processes, safeguards private sector companies from exposing sensitive information—a mechanism that allows private sector companies to come forward with innovative ideas for fast-tracking solutions to long-term problems.

While commercial-in-confidence information is not shared with the general public, a critical component of all MLP guidelines is the principle of open-book evaluation and negotiation with the state government or city council.

The relevant state government must be satisfied with a proposal's value for money and risk allocation and is therefore granted access to all necessary information. However, information provided under the principle of open-book evaluation and negotiation—for example, intellectual property and commercial-in-confidence material—is treated in adherence with the MLP guidelines and is not made publicly available.

A ready example lies in the financial models, which are agreed between the potential proponent and the government in every project negotiation. This model forecasts cash flow and returns throughout the concession period. As is standard practice across the infrastructure sector, the model is retained as commercial-in-confidence.

As a publicly-listed company on the ASX, Transurban also has strict reporting requirements. As part of these, we do not make long-term forecasts available to the market—a practice that is consistent with all ASX listed entities and ASIC guidance regarding the disclosure of prospective financial information for publicly-listed companies.

If a public company's financial models or forecasts were made public, it could have a significant impact on that company and its shareholders and would likely lead to a reluctance from public companies to submit proposals to government.

Concession arrangements provide accountability and transparency

Each toll road project is generally governed by its own concession deed, which was negotiated by the relevant state government, the successful private sector bidder and the relevant government departments in accordance with protocols and guidelines set by the government.

Transurban entities hold 13 concession deeds with the Victorian, Queensland and NSW State Governments and the Brisbane City Council.

We partnered with government and others to construct CityLink in Melbourne and the Westlink M7 and NorthConnex in Sydney; and we negotiated these concession terms with government.

In addition, we acquired (in some cases with partners) the M5 South West, Hills M2, Eastern Distributor, Lane Cove Tunnel and Cross City Tunnel in NSW, and the Gateway Motorway, Logan Motorway, Go Between Bridge, Legacy Way, Clem7 and AirportlinkM7 in Queensland once they were fully operational. Hence, for these roads, we inherited the concession terms that were negotiated between the previous owners and government.

These deeds comprehensively detail the exceptionally high standards that we must meet across every aspect of operating and maintaining our roads. Our responsibilities span the life of the agreement and include hand-back provisions detailing the exceptional conditions the roads must be in at end of the concession period.

The deeds also include rigorous reporting obligations, which require us to regularly update our government partners on our performance against key indicators. Financial arrangements are structured around our performance and achieving those indicators.

The standards expected of toll road operators would be among the most rigorous in Australia. It is not unusual for concession deeds to be lengthy with hundreds of pages of performance and reporting provisions. These concession agreements or summaries are publicly available.

Public accountability—the role of stakeholder and community engagement in Transurban's projects

Transurban is committed to best-practice corporate governance, transparency and accountability. We live and work in Australia's major cities and, like everyone else in the community, we want the best quality of life possible. Efficient transport networks are central to that proposition and we work to deliver projects that meet community expectations and address a genuine need. Achieving this underpins the sustainability of our business and helps us deliver financial returns to our investors.

Transparency measures are integral to any MLP process. Aligned with this are the principles of community engagement.

We are proud of the ways we incorporate feedback we hear from the community and other key stakeholders into our projects. The feedback we collect via our community engagement programs help us to develop and plan our projects.

Feedback we collect via our community engagement programs is recognisably evident in the West Gate Tunnel Project design. This process is integral to our own assessment of the project's alignment with the genuine needs of the community. It also informs our ability to propose project enhancements that will deliver additional value for the transport network over the longer term.

More detail about the project's community engagement program is provided on page 23.

Case Study

Developing the West Gate Tunnel Project

The West Gate Tunnel project proposes a new freeway designed to relieve traffic pressure on the Monash/CityLink/West Gate Freeway (the M1 corridor—the main connecting route between Melbourne's east and west); reduce the city's reliance on the West Gate Bridge—by providing a second river crossing; provide a direct freight link to the Port of Melbourne; and remove significant volumes of trucks from residential areas.

The project will deliver $11 billion in economic benefits, improve access to jobs, education and services for people living in the city's west, and more reliable travel times will help lower transport and operating costs, improving productivity for business and supporting Victoria's economic stability and growth.

The Department of Economic Development, Jobs, Transport and Resources (DEDJTR) prepared a business case to test the merits of the project, which found the project had merit and would bring significant value to Melbourne, Victoria and Australia.

In December 2015, the Victorian Government released the project's business case and announced the West Gate Tunnel Project (then known as the Western Distributor project) would progress to Stage 4 of the MLP process.

As with all major infrastructure projects the West Gate Tunnel project works are subject to the Environment Effects Act 1978. In accordance with this Act, an Environmental Effects Statement (EES) for the project was required.

Following extensive consultation during 2015 and early 2016, a Reference Design for the project was released and, following a competitive tender process for the design and construction of the project, CPB Contractors John Holland Joint Venture was selected in early 2017. This design is now subject to the EES process and related project approvals expected in late 2017.

Developing the project design

The West Gate Tunnel Project design was developed in collaboration and consultation with a wide range of experts, advisers and with the community. This intensive process included:

- creating a project development framework with objectives focused on meeting Melbourne's needs in alignment with long-term transport policy for integrated rail, public and active transport options and projects
- assessing corridor alignment, strategic intervention and road options—a process that confirmed a new western connection along a southern corridor (including crossing the Maribyrnong River) would deliver maximum benefits now and into the future
- developing an indicative project design to inform the design and construction procurement process, including identifying, evaluating and refining design options and engineering solutions, resolving constructability issues and considering risks, benefits and impacts
- preparing and publishing the business case
- extensive consultation with approvals agencies, local authorities, other key stakeholders and communities potentially affected by the project
- preparing an Environmental Effects Statement to assess the effects of the tendered design.

Best practice community engagement

From the release of the initial West Gate Tunnel Project proposal in April 2015, community and stakeholder feedback has been actively sought and has played an important part in the development of the project.

The engagement program follows five phases over more than two years, aligned with key milestones in the planning, design and construction states of the project. Key principles of responsiveness, transparency, openness, inclusivity and accountability were adopted for the West Gate Tunnel Project and underpinned the engagement approach.

The carefully-planned and phased project has enabled one of the most extensive engagement programs undertaken on a Victorian infrastructure project, with engagement underway for more than two years before the exhibition of the EES.

Figure 13 provides an overview of our engagement activities and the project's extensive interactions with community and stakeholders.

Local priorities embedded in the project's design

Input from communities, stakeholders, industry and government stakeholders has been used in many ways at each stage of the project's development to inform assessments and decision making.

Local priorities are now our priorities—and they are embedded—as mandatory elements—within the project's design.

Based on feedback from the community, a number of enhancements were made to the project including:

- designing a longer tunnel, moving the westbound exit further away from existing homes
- separated express lanes to and from the West Gate Bridge enhancing safety
- an improved city access design with simplified connections and reducing the number of Moonee Ponds Creek crossings
- adding more than 14 km of new and upgraded cycling and walking paths, including a 2.5 km veloway above Footscray Road
- improving pedestrian and cycling connections between communities along the West Gate Freeway
- creating almost nine hectares of new community open space including parkland and wetlands—and the planting of more than 17,000 trees and nearly 1 million plants
- celebrating Aboriginal heritage and the maritime history of Melbourne's west within the project's world-class architecture, urban and landscape design
- reducing noise, protecting privacy and allowing natural light for residents by introducing a new, project-specific noise standard and high-quality noise walls.

Figure 13: The community and stakeholder engagement program in numbers (as at May 2017)

Feedback responses

4,500+ comments and submissions to project team

Face-to-face engagement

5,700+ people engaged

95+ community engagement sessions, door knocks and information displays

320+ stakeholder meetings, briefings and workshops with over 200 businesses and organisations

13 meetings with the Community Liaison Group comprising key stakeholders from local government and community representative groups

Email subscribers

Up to 1,400 email subscribers receiving 20 emai updates throughout 2015, 2016 and 2017

Local advertisements

160+ ads in local newspapers

400+ radio ads

Community line and emails answered

1,500+ emails, phone calls, submissions and letters to the project team

Online

1,000+ responses to online engagement tools including interactive maps, surveys, 'ask a question' and discussion forums

240,000+ visits to the online portal and project website

20,000+ brochure downloads

4,690 Facebook friends

500+ Twitter followers

52,000 addressed letters sent

45,000+ project updates distributed six times

Equity in commercial arrangements

Toll roads are multi-billion dollar assets built by the government and private sector for public use. These public private partnerships free up taxpayer funds for other purposes including public transport.

The funds for building toll road assets come from private sector borrowings. Repayments on those borrowings, along with all operating and asset maintenance costs, are expected to be met through income generated over the life of the project.

Toll roads are "long life" infrastructure so the cost of debt arranged to build these assets can be spread over a long period; however, it should be noted that there is no income at all generated by these infrastructure projects until after a construction period that can take a number of years. In the meantime, the interest on debt accumulates.

At the time of setting the terms of toll road agreements with the private sector, government considers a range of factors such as:

- the length of the concession period
- the expected traffic and the expected value of time savings for the average user of the road
- the initial toll price and the tolling schedule over the life of the concession—which is the tolling adjustment allowed by the operator
- the contribution the government will make versus the contribution that the private sector will make and recoup over the life of the concession.

These factors are interdependent—that is, the lower the initial toll rate and/or future toll escalation rate, the longer the concession agreement length, and/or the higher the contribution required from government. Beyond these factors, government could consider a reduced project scope. These factors are discussed further in the following sections.

If the private sector was not involved in the delivery of toll road projects, the burden would be on the government to deliver this infrastructure at great expense to the public, as previously discussed. However this approach also has unintended and adverse impacts beyond increased pressure on government balance sheets.

Public sector delivery of road projects increases the public's perception that the provision of road infrastructure is a "free" service that comes at no additional expense to commuters. Conversely, public transport passengers are charged a fare to use bus, train, tram and ferry services. This effectively sends a pricing signal that impacts mode neutrality and undermines the concepts of equitable access to transport. For example, people are incentivised to take their car to work over the train as that is the service they perceive as free of charge and thus most advantageous to them.

As part of integrated transport planning, governments should consider the appropriate pricing signal that meets their transport policy objectives.

Setting toll prices

Tolls are the price users pay to travel on the toll road networks. It is a fee-for-service arrangement, where those who benefit from the value provided by the toll road network in terms of travel time savings and travel time reliability, pay for this benefit. That is attractive to all those taxpayers who would otherwise have to pay their share of the added tax burden needed to build such road networks which they might never use themselves.

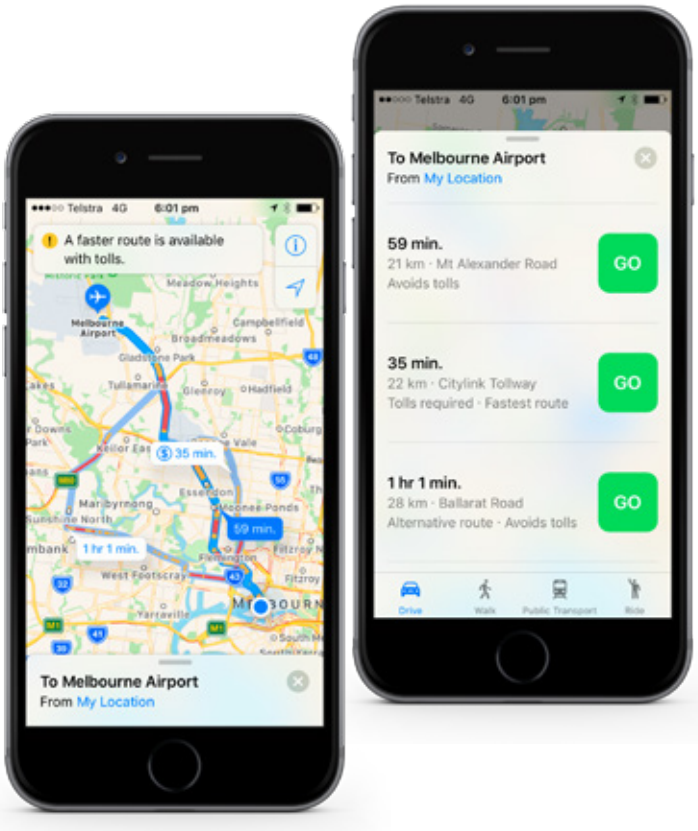
Those who do not use tolled motorways, do not pay tolls. Drivers can always choose an untolled alternate route. Advancements in mobile mapping technology is making this choice more convenient for motorists (refer to Figure 14).

In setting toll prices, governments look at the benefit motorists can gain on the road (in the form of travel time savings and reliability) and weigh this against time value of money considerations in order to understand the value proposition for motorists.

This value proposition is critical in determining appropriate pricing levels. For example, if tolls are set too high, not enough users will use the road to maximise the project benefits. If tolls are set too low or are not escalated at a high enough rate, government may face the prospect of a large funding gap – that may need to be met through increased taxes.

The government selects a regime that will best meet the objectives of funding the project and provides a value-for-money toll proposition that is attractive to motorists.

Figure 14: Advancements in mobile mapping technology make choices more convenient for motorists*



*iPhone Maps Application

Increasing toll prices

Toll prices are adjusted periodically under the terms of the relevant concession deed—on the road networks operated by Transurban this occurs quarterly for roads in NSW and Victoria, and annually in Queensland. These schedules are heavily regulated by government through the concession deeds for each road.

Toll price increases essentially smooth the costs of constructing, operating and maintaining the toll road over the full life of the concession period.

An agreed tolling escalation schedule underpins governments' confidence in the sustainability of a project while creating a protection for public users that toll prices cannot escalate outside of the arrangements agreed by government.

The escalation scheduled is based on the increasing value of time savings over the life of an asset. Governments make a judgement call about the future time value of money (likely based on past experience) and choose an indexation that reflects this.

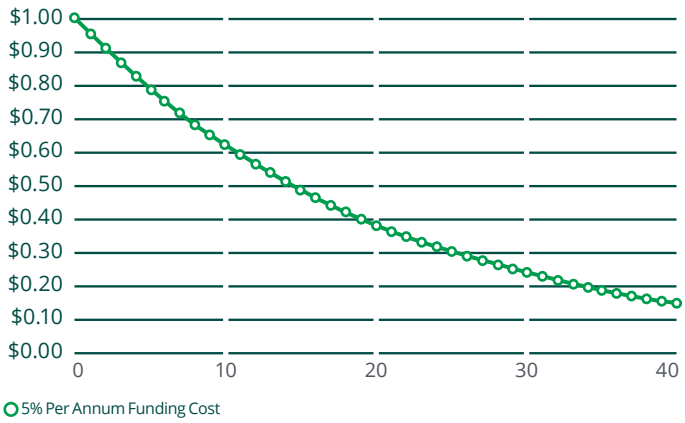
The rate of escalation is important. If tolls are escalated at a lower rate, the resulting funding gap would need to be made up through government contributions, longer concessions or higher initial tolls.

However, it should be noted that higher initial tolls may not be fair to users of the motorway in the early years of a concession. In the early years, users gain lower travel times savings and have less ability to pay the higher tolls than motorists who use the road later in its life. During this period, traffic volumes are still ramping up and the travel time savings are not as large as in later years, when population and employment growth lead to increased congestion and larger time savings for motorists who choose the motorway over untolled alternatives.

"Building and maintaining Australia's infrastructure is a responsibility shared between all three levels of government and the private sector."

Hon Paul Fletcher MP,
Minister for Urban Infrastructure
July 2017

Figure 15: Current worth of one dollar received over a 40-year concession period



Length of concession period

To create a commercially sustainable project that is attractive to the private sector, the capital and ongoing operational and maintenance costs of the project need to be able to be recouped. Therefore, the lower the initial toll charge and/or future toll escalation rate, the longer the concession agreement length and/or the higher the contribution required from government.

However, there is a limit to how much value longer concession terms can contribute to the funding mix. The impact of time value of money means the longer-dated the cash flow, the lower it is valued in today's dollars (refer to Figure 15).

Changes to existing toll roads

The existing owner of a toll road (as the holder of the exclusive concession for that toll road) can negotiate or, in some cases, be directed by the government to upgrade/ improve that existing road. This has occurred several times in Australia and is commonplace overseas. This is an excellent way for government to enable improved services for road users through the existing owner investing further in the toll road. These upgrades improve road capacity and are undertaken off government balance sheets with the design, construction and delivery risk taken by the toll road owner.

Over the past 10 years, Transurban (and our partners) have delivered or are delivering approximately $4.5 billion in improvements to the roads we operate through undertaking upgrade projects. These have significantly enhanced capacity and safety across the motorway corridors, resulting in improved travel times and traffic flows across the broader road networks.

These upgrade projects were negotiated and agreed with the relevant state government as a substitute for direct capital contributions by governments. Doing so has in effect expanded the pool of value sources available to state governments.

This has enabled major road enhancement projects to be undertaken and brought the delivery of NorthConnex forward by more than a decade, benefitting the community sooner than originally planned. These projects are detailed below.

NorthConnex

Transurban partnered with Westlink M7 major shareholders to lodge a successful unsolicited proposal to build a "missing link" in Sydney's orbital network via a nine-kilometre twin tunnel linking the M1 Pacific Motorway at Wahroonga with the Hills M2 Motorway at West Pennant Hills. The project achieved bipartisan support with the federal Gillard Labor Government and the O'Farrell Coalition State Government progressing Transurban's proposal and each allocating $405 million towards it in their respective 2013 Budgets. Following the federal election in September 2013, the Abbott Coalition Government and Baird Coalition Government confirmed the project and named it "NorthConnex".

The remainder of the cost is funded by Transurban and Westlink M7 shareholders. The funding mix includes:

- tolling on NorthConnex once it has opened, which will be consistent with toll charges on the Hills M2 Motorway main toll point
- changes to the tolling for large vehicles on Westlink M7 Motorway and Lane Cove Tunnel
- concession extensions on Westlink M7, Hills M2 Motorway and Lane Cove Tunnel.

The NorthConnex project is on schedule to be completed in late 2019.

West Gate Tunnel

The proposal for this project is in Stage 4 of the Victorian Government's MLP process and the financial arrangements have not been finalised. However, Transurban proposed that the $5.5 billion project cost to be funded by each of the following:

- tolling arrangements for the projects
- an extension to the concession period for CityLink
- government contribution.

The need for a project that connects Melbourne's western suburbs with the city centre has been acknowledged by both major political parties, industry bodies and independent experts. More detail is provided on pages 34 and 35.

CityLink Tulla Widening

Following a MLP, the Victorian State and Federal Governments partnered with Transurban to deliver a $1.28 billion major upgrade project for the CityLink-Tullamarine corridor in Melbourne. This proposal was originally progressed under the Napthine Coalition State Government and, following the state election in November 2014, was taken over by the Andrews Labor State Government.

As part of the project, the Federal and State governments are investing $273 million into works required on the Tullamarine corridor through to the Melbourne airport.

The funding mix for the remainder of the project costs includes:

- one year concession extension on CityLink
- increased truck tolls
- an additional year in which the annual toll price increase will occur at the greater of 4.5 per cent or CPI.

The project is scheduled for completion in 2018.

Logan Enhancement Project

The Queensland State Government partnered with Transurban Queensland (and our partners) following our MLP to deliver a $512 million upgrade to the Logan Motorway and Gateway Extension. The project will enhance safety through addressing merge alignments; provide additional access points by creating new ramps; and increase capacity by adding lanes at key points on the motorway. The project is being delivered at no financial cost to government and will be funded through truck toll increases on the Logan and Gateway Motorways.

The project is scheduled to be completed mid-2019.

Inner City Bypass

Following an Innovative Proposals Policy, the Brisbane City Council has partnered with Transurban Queensland (and our partners) to deliver a $60 million upgrade to one of the city's most important road connectors, the Inner City Bypass, which links the AirportlinkM7, Clem7 and Legacy Way tunnels and major arterial roads. Now at 90 per cent capacity, over the next 12 months, additional lanes will be added to the Inner City Bypass relieving congestion and enhancing journeys between the city and western suburbs. Brisbane's bus service also benefits from the project through the addition of a new ramp which connects directly with the Inner Northern Busway and a new priority bus lane. The project will be funded through increased tolls on Clem7, the Go Between Bridge and Legacy Way.

The project is scheduled to be completed in mid-2018.

Regulatory environment

The tolling sector is heavily regulated in Australia through concession agreements with government. As noted earlier, toll charges and increases are set under each concession deed by government in the initial contract stage of a project. Each toll road is governed by its own concession deed, the terms of which (including pricing) are based on the particular features of that project, and independently of any other toll road.

Private toll road operators, including Transurban, are not monopoly service providers. Any analogy between toll roads and infrastructure that is classified as a natural monopoly is economically flawed, as noted by the NSW Government in Transport for NSW's submission to the NSW Legislative Council's Inquiry into Road Tolling.

Motorists are able to choose whether they use a toll road or bypass it by using alternative non-tolled roads. That decision will be made by motorists depending on what they believe will deliver them the most value in the circumstances surrounding their travel needs from time to time.

The operator of a natural monopoly, absent continuing regulatory oversight through independent regulation, would be free and able to impose profitably significant and non-transitory increases in price for the services provided. In contrast, toll road operators have no inherent pricing power. It is critical to re-emphasise that the pricing of journeys is determined in the initial contract stage, taking into account toll prices, escalation rates and projected revenues, and is governed by individual concession deeds. Unlike any natural monopoly, there is no review or re-setting of tolls on a periodic basis as recognised by the NSW Government when it observed that the role of the Independent Pricing and Regulatory Tribunal should not be extended to cover toll road pricing.

As has been acknowledged by the Australian Competition and Consumer Commission (ACCC) in a number of previous merger assessments, each toll road operates as a separate, discrete and independent business that must be operated strictly in accordance with the terms of its concession deed.

This is evidenced, in practical terms, by the relevant toll road concessionaire:

- having no pricing power—prices are set by governments in the initial contract stage
- operating a toll road that constitutes the supply of a service within a distinct geographic area by reference to a particular origin and destination with no capacity to influence alternative routes or modes of transport, and
- operating a toll road that is not influenced or affected by pricing on any other toll road (eg the northern corridor M2 Motorway does not 'compete' against the southern corridor M5 or Eastern Distributor for patronage).

We note the Harper Competition Policy Review 2015 did not raise any concerns about competition in the toll road industry, rather it focused strongly on road pricing reform, which Transurban supports (refer to the discussion on page 11).

"User funding is an important component of the project and this is supported by Infrastructure Australia, because it can provide stronger incentives for good project selection and a sustainable funding source.

NorthConnex also highlights the use of changes in existing road concessions as a funding mechanism."

Infrastructure Australia
May 2015

Figure 16: Regulatory environment across industry sectors

	CONCESSION DEEDS	INDEPENDENT REGULATION	LIGHT-HANDED MONITORING
EXAMPLE INDUSTRIES	Toll roads	Utilities including electricity, water, gas and telecommunications	Airports, railway and some ports
PRICING FREEDOMS	Australian tolls fixed from date of concession with defined escalation. Other charges are set out in concession deeds, legislation or agreed with government (cost recovery)	Prices reset periodically (around every five years) to allow agreed return hurdles to be met based upon a regulated asset base	Price monitoring by the ACCC. Commercial arrangements with users renegotiated periodically
CUSTOMER CHOICE	Road users have alternatives including non-tolled roads and other modes of transport	Choice at retailer level but monopolies around distribution infrastructure	Limited alternatives for consumers and users (airlines, shipping lines)
ENFORCEMENT PROCESS (FOR NON-PAYMENT)	Last resort is courts and traffic infringement process similar to parking and other traffic infringements	Utility is disconnected or service is denied	Services denied

Competition

Toll road concessions, whether through direct tender for greenfield concessions or through secondary sales of brownfield assets, are highly sought after and there has always been significant competition to acquire these assets.

Market interest in toll road concessions has been demonstrated by recent transactions both in Australia and internationally. Infrastructure Partnerships Australia's recent Perpetual Infrastructure Investment Report (2016) highlighted roads as "the single most attractive infrastructure asset class by investors."

Development of new toll roads

In considering the construction of a new road project, state governments have multiple delivery options available, and these can be adopted to best deliver value for money based on the specific circumstances. The construction of road projects are always tendered competitively.

Transurban from time-to-time participates in or leads consortiums in this competitive market place. Figure 17 provides a non-exhaustive list of road projects that have been delivered in Australia. This list shows 17 projects that have been delivered by 15 different consortia, comprising more than 35 corporate entities. This list does not include the consortia and entities whose project bids were not successful or the D&C contractors who bid on those works.

While we (and our partners) have been awarded three major road development projects over the past 20 years, there have been a significant number of instances where we were not selected as the preferred bidder in a competitive process or did not participate, such as in the initial processes for Clem7, AirportlinkM7, Peninsula Link, Eastlink, East West Link, Lane Cove Tunnel, Cross City Tunnel, the Toowoomba Second Range Crossing and Legacy Way. Each bidding process for a toll road concession is a discrete, competitive exercise delivering its own independent tension.

The sheer number of companies participating in the development of road projects in Australia points to the significant competition for quality projects. It also demonstrates a willingness from the private sector to partner with governments to assist in the delivery of their long-term strategy and policy objectives by progressing key transport projects. In any case, the government always has the option to deliver the roads themselves.

Competition for the design and construction works on road projects also remains intense, and recent tenders for WestConnex and NorthConnex in NSW; the Gateway Upgrade North, Logan Enhancement Projects and Inner City Bypass Upgrade in Queensland; and West Gate Tunnel Project in Melbourne were highly competitive.

Acquisition of toll roads

If toll roads are developed by government for sale to the private sector at a later date (such as potentially the WestConnex project) or on-sold in secondary markets, then the private sector participates in a formal competitive sale process to secure the concession rights for the toll road. Sale processes for toll roads attract significant private sector interest and are highly competitive, which results in significant capital recycling that governments can reinvest into other transport or social infrastructure projects.

These sale processes are subject to scrutiny by the ACCC as well as Foreign Investment Review Board and the Australian Taxation Office (as required). The rights acquired by the successful bidder are documented in a written concession deed, including the tolling regime set out by government.

The development of tolls roads in Australia's capital cities is an example of genuine partnerships between many levels of government and the private sector. The long-term nature of toll-roads, and the consistency of the regulatory environment, continues to attract Australian and international investment—particularly from superannuation and pension funds. The following 23 entities currently hold direct (equity) investments in toll roads across Sydney, Melbourne and Brisbane. This list does not include holdings via listed entities or PPP road projects that are not tolled.

- AMP Capital
- APG Infrastructure Pool 2011
- ATP (Denmark)
- Australian Super
- Canada Pension Plan Investment Board
- CP2
- Hastings Funds Management
- IFM Investors
- Kumagai Gumi
- KTCU—the Korean Teachers Credit Union
- Leader Investment Corporation
- NSW Government
- NPS National Pension Service
- NZ Super Fund
- Olbia Pty Limited
- QIC Global Infrastructure
- QSuper
- Tawreed (UAE)
- TIAA—Teachers Insurance and Annuity Association
- Transfield Holdings
- Transurban
- UniSuper
- USS—Universities Superannuation Scheme

Sources: Transurban analysis based on publicly available information

Figure 17: A range of private sector groups have been involved in Australia's road projects (list not exhaustive)

PROJECT	OPENING DATE	DELIVERING CONSORTIUM
M5 South West Motorway	1992	Sydney Roads Group (Macquarie Infrastructure Group)
Sydney Harbour Tunnel	1992	Sydney Harbour Tunnel Company (Transfield Pty Ltd and Kumagai Gumi)
Hills M2	1997	Hills Motorway Group (AMP, Colonial First State and Macquarie Infrastructure)
Eastern Distributor	1999	Sydney Roads Group (Macquarie Infrastructure Group)
CityLink	1999	Transurban
Cross City Tunnel	2005	Cross City Motorways (Bilfinger Berger, Deutsche Bank, Cheung Kong Infrastructure Holdings)
Westlink M7	2005	WestLink Motorway Ltd Consortium (Macquarie, Macquarie Infrastructure, Transurban, Leightons, Abigroup)
Lane Cove Tunnel	2007	Connector Motorways Group (Leighton Holdings, Mirvac Group and Cheung Kong Infrastructure Holdings)
Eastlink	2008	ConnectEast Group (Thiess and John Holland)
Go Between Bridge	2010	The Hale Street Link Alliance (Bouygues Travaux Publics, Macmahon Holdings, Seymour Whyte Holdings and Hyder Consulting)
Clem7	2010	RiverCity Motorways (Leighton, Baulderstone Hornibrook, Bilfinger Berger and ABN AMRO Australia)
AirportlinkM7	2012	BrisConnections (Macquarie Group / Thiess / John Holland)
Peninsula Link	2013	Southern Way (Abigroup, LendLease Infrastructure Services, Bilfinger)
Legacy Way	2015	Transcity (BMD Constructions, Ghella, Acciona)
NorthConnex	Under construction	Transurban-led consortium (with QIC, CPPIB)
Toowoomba Second Range Crossing	Under construction	Nexus (Plenary Group, Cintra, Acciona, Ferrovial and Broadspectrum)
East West Link	N/A	East West Connect Consortium (Capella Capital, Lend Lease, Acciona and Bouygues)

Supporting an integrated network

In all of the projects we seek to progress, Transurban, and our government partners, consider other transport projects, that could be developed alongside, integrated with or facilitated by the new road connection, as well as future-proofing for urban renewal sites. For example, the West Gate Tunnel Project proposal does not preclude future port or rail opportunities and complements enhancements to public transport in the future, including the connection of a tram line between the cities of Melbourne and Maribyrnong.

Contrary to a common misconception, the contractual arrangements for a number of road projects expressly contemplate complementary modes of transport coexisting in the same corridors. For instance, the WestlinkM7 concession agreement includes specific arrangements for public transport (such as light rail or a busway) to occupy the central median—should this be required or desired in the future.

Section 3:
Alignment with government priorities

Helping government deliver on long-term transport master plans.

At Transurban, we strive to be the partner of choice in a highly competitive environment and this underpins how we think about day-to-day road operations, customer service and project delivery across our urban road networks. To this end, Transurban responds to existing government policy in ways that provide quality and effective solutions to the transport tasks government sets and the transport challenges communities face.

The toll road projects proposed and progressed by Transurban and our partners had their genesis in governments' long-term master plans, some of which date back more than 50 years. These forward-looking plans recognised the need to provide Sydney, Melbourne and Brisbane with motorway-grade, free flowing road networks that connected economic and residential growth areas.

Most of the toll roads that now exist are the result of successive governments from both major parties delivering on the vision outlined in these types of plans (refer to Figures 18, 19 and 20).

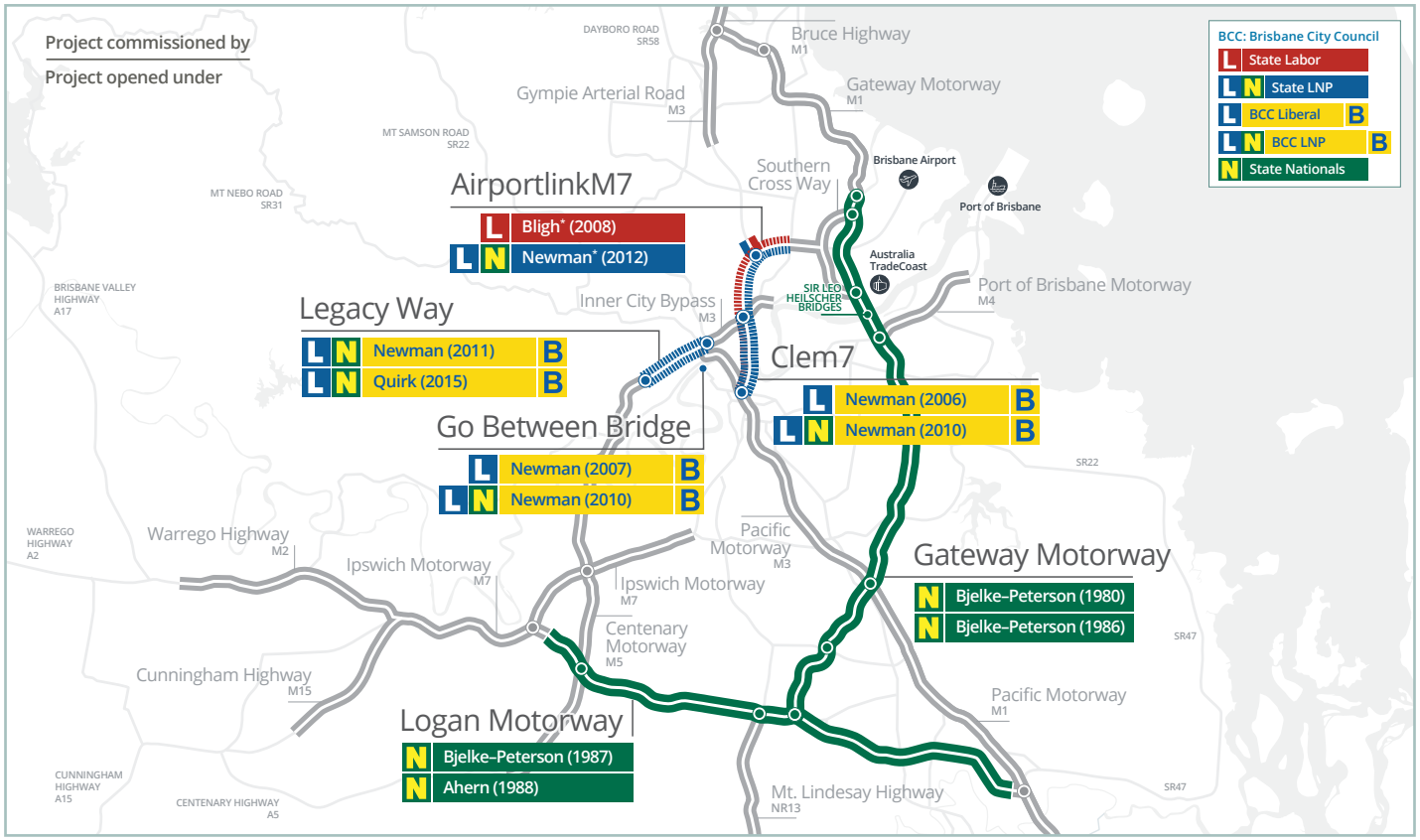
The significant utilisation of toll road networks across Australia today illustrate the success of these projects in transporting people and freight around our major urban centres.

Brisbane

In Queensland, state and local governments have generally followed the Wilbur Smith "Brisbane Transportation Study" published in 1965. The Wilbur Smith plan proposed a "ring-radial" freeway system for Brisbane, which included the majority of the road projects that have since been delivered.

More recently, the Brisbane City Council's TransApex Plan was another step towards a better-connected Brisbane. Under the plan, which was launched in 2004, four of the five tunnels and bridges have been built under PPP agreements, with only the remaining East West Link yet to progress.

Figure 18: Development of Brisbane's toll road network—a bipartisan achievement



*The AirportlinkM7 was commenced under BCC's TransApex plan and delivered by the State Government.

Sydney

Planning for what is now the Sydney orbital road corridor began as early as 1962 under the "County of Cumberland scheme" (CCS). The plan has been largely completed due to the delivery of privately financed toll roads.

In 2002, the NSW and Commonwealth Governments jointly funded the F3 to Sydney Orbital Link Study to investigate options for a new National Highway connection between the F3 and the then future Sydney orbital (now known as Westlink M7). Completed in 2004, the study concluded that the preferred option was a corridor connecting the F3 at Wahroonga to the M2 at its interchange with Pennant Hills Road.

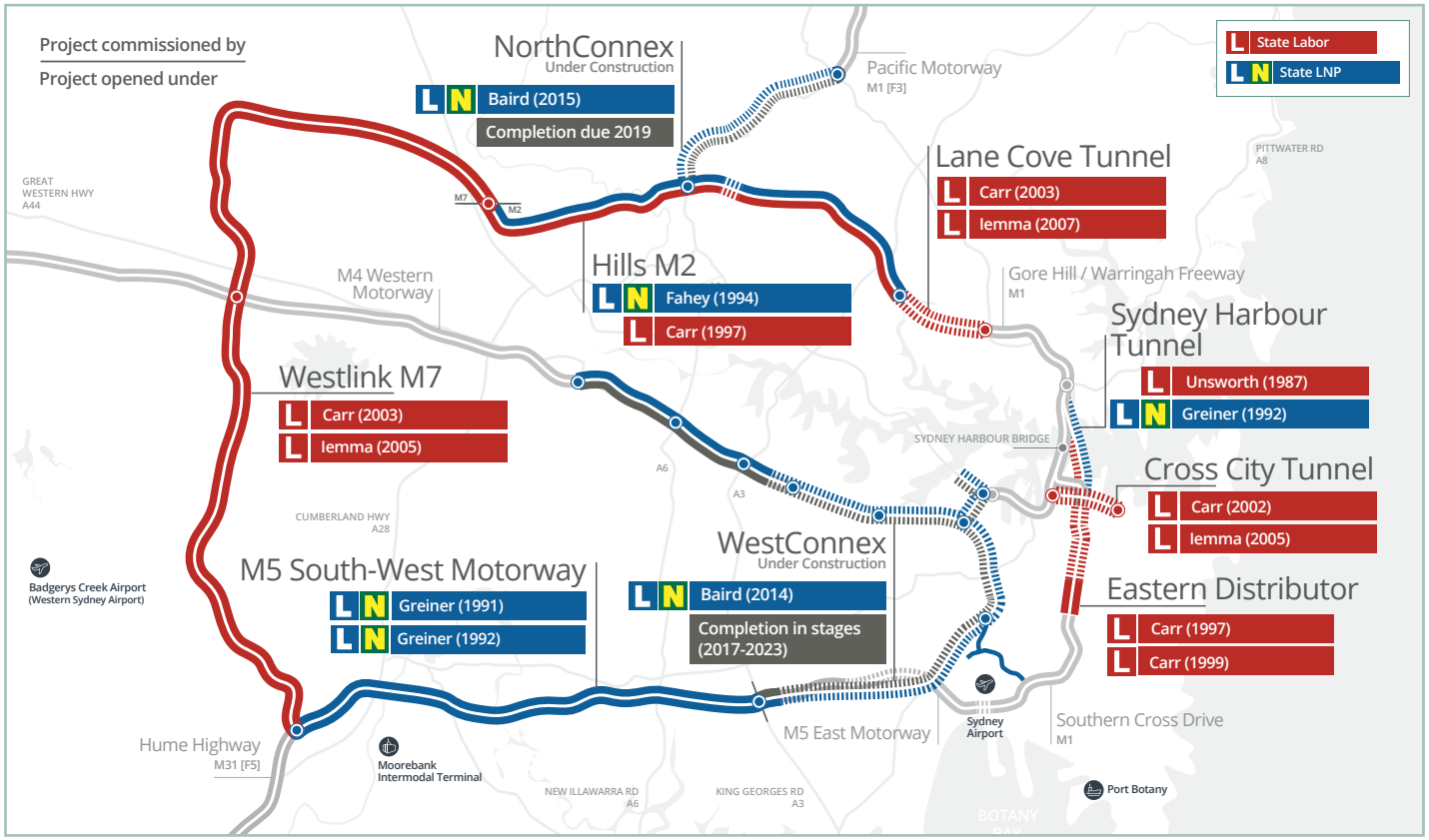
The Pearlman Review in 2007 reviewed analysis from the 2004 study and agreed with its preferred alignment and recommended that a connection between the F3 and M2 be progressed immediately with planning to be considered for a connection between the M1 and M7 (bypassing the majority of the Sydney region), to be delivered in the very long -term future.

The 2012 NSW State Infrastructure Strategy (SIS) included the connection to the Sydney orbital from both the F3 and the F6 as missing links. The F3–M2 missing link was proposed by Transurban in 2012 as an unsolicited proposal and is now being delivered, as NorthConnex.

Another missing link identified in the SIS and the NSW Government's *Long Term Transport Master Plan* WestConnex is now also under development. The 33-kilometre motorway, which includes capacity improvements on existing roads and new sections of motorway that are designed to better link Sydney's west with key places of business, is now being delivered across multiple stages.

Sydney's northern beaches continues to be a challenge across all levels of government. The Spit Bridge and Military Road remain in gridlock and frustrates thousands of motorists each day. A solution to the problem has taken many forms and has been discussed over many years. The recently announced Western Harbour Tunnel and Beaches Link is the next step in unlocking Sydney's north and continued growth.

Figure 19: Development of Sydney's toll road network—a bipartisan achievement



Melbourne

The cornerstone of Melbourne's road network planning was the *Melbourne Transportation Plan*, which was released by Henry Bolte's Government in 1969. Over the next fifty years, governments have progressively delivered versions of the freeway and rail components it outlined.

More recently, in 2008, a comprehensive transportation assessment was undertaken by Sir Rod Eddington AO. The *East West Needs Assessment* recognised the importance of supporting the key population growth centres in Melbourne's west, noting the city's significant east-west divide led to reduced employment opportunities for the western suburbs.

The assessment highlighted that Melbourne's west will face considerable pressures due to its due to its limited transport connections with the CBD and inner- and middle- eastern suburbs and the port.

It also forecasted a 50 per cent growth in freight being moved around Melbourne and to and from the city's ports and airports by 2020 and highlighted that one of the most urgent needs for the city was to provide a connection between the inner west and the port, alleviating reliance on the West Gate Bridge.

Over the past two decades, successive governments, including the Kennett, Brumby, Baillieu and Andrews governments have supported the need for an alternative to the West Gate Bridge and better access to the Port of Melbourne.

In 2015, Transurban submitted a proposal to the Victorian Government under the MLP process. Our proposal was for a tunnel project that responded to the congestion challenges first discussed in 1999 by the Kennett government and later detailed in the Eddington's assessment.

The West Gate Tunnel Project directly responds to a number of findings identified in the assessment, including:

- transport issues are more pressing in the west
- Melbourne is over-reliant on the West Gate Bridge
- the freight task is growing rapidly.

The project addresses these through providing greater connectivity for the western suburbs with areas of the greatest employment growth, and providing a second river crossing and a direct freight link to the port.

Melbourne is Australia's fastest growing capital city, and its population is growing by more than 100,000 people every year.[18] Forward projections indicate that half of Melbourne's population growth to 2050 will be in the west and north, however, only 30 per cent of jobs growth will be in these areas.[19]

By 2046, an estimated 283,000 people will be living in Melbourne's west but only an additional 93,000 jobs will be created in the region. Over the same period, the central Melbourne sub-region is expected to experience a similar increase in population to the west (267,000) but jobs will grow by up to 480,000.[20] This will make it harder for workers to find jobs locally and mean that more people will need to travel to the city from the west and north to access jobs in the central city.

The improved travel times provided by the West Gate Tunnel Project will increase accessibility to jobs for western suburb residents.

Decreasing travel times between the western suburbs and the central city and inner north means people living in the western suburbs would have access to up to an additional 250,000 jobs within a 45 minute commute (the benchmark for commuting trips).[21]

The progression of an alternate crossing to Melbourne's west

1 March 2007

"It is vital to the future economic prosperity of Victoria that we fully assess the options for personal, business, freight and public transport travel between Melbourne's eastern and western suburbs."

—Hon Steve Bracks AC, Premier of Victoria

2 April 2008

"Doing nothing is not an option. The cost of improving these transport connections is substantial—but the cost of inaction is far greater."

—Sir Rod Eddington AO

17 September 2009

"If something happens along it [the West Gate Bridge]—especially given it serves the Port of Melbourne—the entire metropolis grinds to a halt."

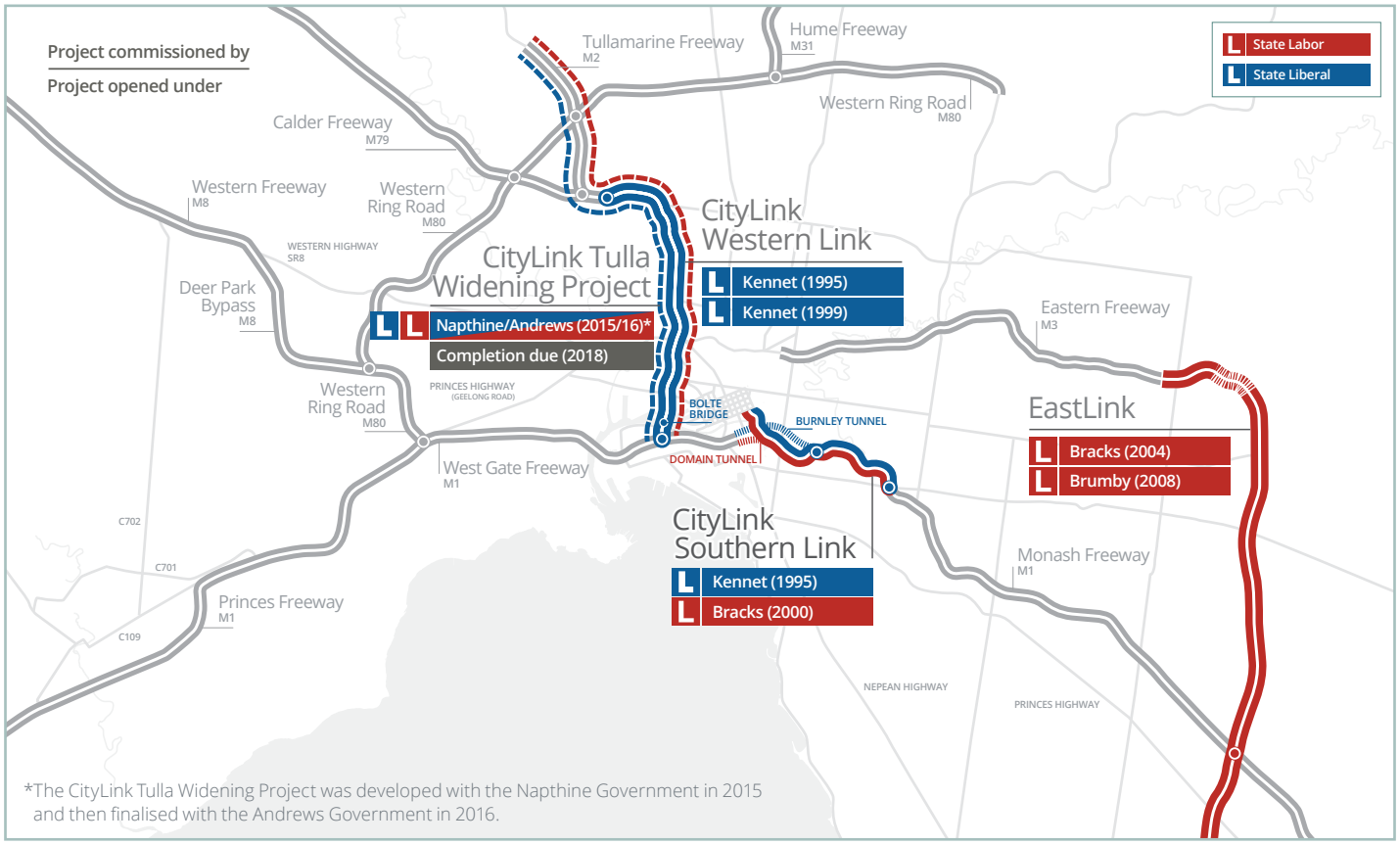
—Brian Negus, RACV General Manager Public Policy

13 September 2014

"The only thing the western suburbs needs is a second crossing ... That's what's needed to ... get the trucks off the Westgate, and provide an alternative to the West Gate Bridge."

—Hon Dr Denis Napthine MP, Premier of Victoria

Figure 20: Development of Melbourne's toll road network—a bipartisan achievement



1 March 2007

"...[T]ogether we need to address the fundamental problem bedevilling Melbourne which is the choke point on the Westgate..."

—Prime Minister Tony Abbott

30 April 2015

"Building a direct link to the Port of Melbourne and a tunnel alternative to the West Gate Bridge would cut travel times for workers and businesses across Victoria."

—Hon Daniel Andrews MP, Premier of Victoria

24 November 2015

"There is an immediacy and an urgency in the need to build a second river crossing, because we often see accidents or hold-ups on the West Gate Bridge. They grind the traffic to a halt."

—Hon Ryan Smith MP, Member of the Victorian Legislative Assembly

8 December 2015

"We're getting on with the Western Distributor [West Gate Tunnel Project] to provide an alternative to the West Gate Bridge, slash congestion on the M1 from the west to the south east and create thousands of new jobs."

—Hon Daniel Andrews MP, Premier of Victoria

Independent support for increasing private sector participation in infrastructure projects

Australia's preeminent industry and regulatory bodies have publicly advocated for greater private sector participation in the delivery of major infrastructure projects and services, noting that this collaboration is essential to successful infrastructure investment programs.

Infrastructure Australia in its plan (released in February 2016), recommended governments seek greater private sector involvement in infrastructure services in order to improve outcomes for consumers, improve the efficiency of Australia's infrastructure networks and support productivity growth.

The plan identified that experience across local and global markets had shown that greater private sector involvement, when properly regulated and incentivised, could make infrastructure services more efficient, lower cost and more flexible; thus providing better outcomes for users and taxpayers alike.

Similarly the Productivity Commission has discussed the significant efficiency gains that are achievable from well-designed and executed PPP arrangements. It also identified risks that could impact the realisation of these potential gains including poor project selection; short-term considerations impacting project decisions; or if complex arrangements were inadequately documented.

The report recommended the best way to prevent these risks was to utilise high-quality analysis of the project by pertinent experts employed by the government and by carefully designing the contracts so that risks were transferred efficiently, transparently and credibly to the private sector, with incentives that align the private and public interests.

Infrastructure NSW and Infrastructure Victoria have also acknowledged the benefits of private sector involvement in the delivery of infrastructure in particular through its ability to deliver better value infrastructure at a lower cost, and with better time performance and greater innovation.

These groups have also highlighted the importance of ensuring a sustainable funding source for infrastructure projects and maintenance, with the Productivity Commission noting the importance of recognising that "regardless of who plans and builds the infrastructure, the cost will have to be paid either directly by users and other beneficiaries; or indirectly by taxes."

"There is a fundamental equity aspect to the public provision of infrastructure that makes it a natural place for good government to meet its commitment to its citizens. But it is not essential that government does all of this in-house."

Peter Harris, Productivity Commission Chair
2014

Owner-operator model aligns with government priorities

Since our founding in 1996, Transurban has worked with governments to help realise these long-standing projects, and in many cases, our involvement has accelerated their delivery.

We constantly look for innovative transport solutions to improve the efficiency of our road networks. Traffic congestion and the performance of the wider road network impact our ability to deliver on our value proposition for our customers, government partners, shareholders and the broader community. Efficient transport networks are central to this proposition.

A free-flowing transport network underpins the liveability and productivity of our major cities, enhancing the prosperity and quality of life of its residents. The more productive and efficient a city's transport network, the more valuable our road assets become, which in turn benefit our shareholders who are mainly Australians.

In this way, we believe the interests of our stakeholders are aligned and we are incentivised to get the best outcomes for these groups.

Furthermore, we believe that a project, whether funded by the government or the private sector, must provide a public service and improve the community in which it serves. When assessing new projects to relieve congestion, we look at a range of considerations across:

- project design
- traffic forecast
- the potential for further development through technology investments
- operational considerations.

At the centre of our analysis is assessing whether the project addresses a genuine transport need for communities and road users (refer to Figure 21). Doing so also underpins the commercial sustainability of the project. The challenge we set ourselves is to bring these projects and the benefits they will bring for the community into reality sooner.

Figure 21: Project considerations

The project must deliver value for the community and help government progress its transport priorities

Benefits from toll road projects

Australia's toll roads are critical to the movement of freight and passengers, and underpins economic growth and social connectivity.

By applying the right policy framework, long-term planning and judicious use of private sector expertise, Australia's toll road projects have addressed genuine accessibility needs, reduced travel times, improved travel-time reliability and created a smoother flow of traffic across the entire road network. By enhancing access and transport connections, toll roads have also supported the development of growth corridors and the establishment of new commercial precincts and communities.

We consider the positive impacts from toll road projects to be far-reaching, and contribute to the economic efficiency, social wellbeing and environmental health of the cities they serve.

Economic benefits

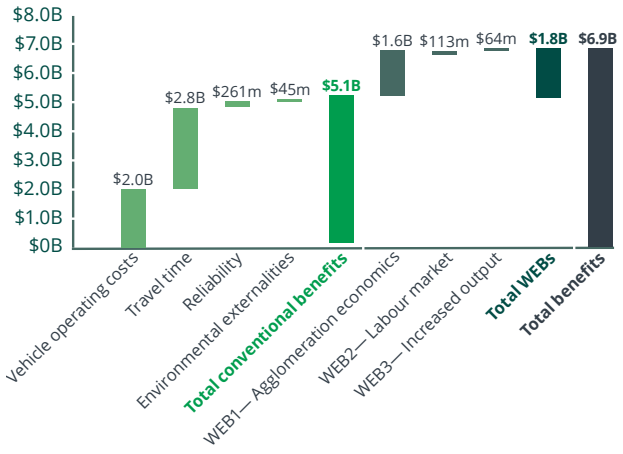
KPMG has estimated that the toll-road sector has contributed $52 billion in economic, social and environmental benefits and increased gross domestic product (GDP) by $37 billion over 10 years (refer to Figure 23[22]). These benefits are derived by toll-road users due to reduced travel times, reduced vehicle operating costs and improved travel-time reliability. Additionally, the toll-road network has significantly improved access to economic centres.

Overall, the annual economic benefit of toll roads in Australia has been estimated at $7 billion (refer to Figure 22), which can be interpreted as the direct loss in benefit associated with delaying the delivery of these toll roads by every single year.[23] Approximately $24 billion of the total benefits is estimated to be productivity enhancing.

The economic impact of road infrastructure cannot be underestimated. For example, the West Gate Tunnel Project will deliver an $11 billion boost to the Victorian economy, which will directly impact the living standards of Victorians. The Logan Enhancement Project will provide $1.2 billion in economic benefits to Queensland.

The increased economic activity supported by Australia's toll road projects has, in turn, improved State and Commonwealth tax receipts by $15 billion (over 10 years, in present value terms), sufficient to fund the delivery of eight new major hospitals or 1,250 secondary colleges.[24]

Figure 23: Annual benefits (2014)



Source: KPMG analysis

Figure 23: Economic contribution

Australia's toll roads have directly contributed

$52 billion

in social, environmental and economic benefits over 10 years

$28B

Direct benefit to households / welfare improvement

Australian households have directly benefitted from personal travel-time savings, reliability gains and vehicle operating cost savings

+

$336M

Direct environmental benefits

In reduced environmental emissions

+

$23.8B

Direct benefit to business/ productivity improvement

Australian businesses have directly benefitted from travel-time savings, reliability gains, vehicle operating cost savings and wider economic benefits

Economy-wide, total impact (direct and flow-on) of direct productivity improvements

5,600 jobs
every year

$1,571
increase in GDP per person

$37.1 billion
increase in GDP

$15 billion
increase in State & Commonwealth tax receipts

*All $ values are reported in present value terms using Infrastructure Australia recommended real discount rate of 7 per cent, which equates to a nominal discount rate of 9.7 per cent.

Source: KPMG, 2015

Business & freight users

Australia's existing toll roads (over a 10-year period)*

$5.6B vehicle operating cost savings

$4.3B travel-time savings

$0.5B travel-time reliability benefits

West Gate Tunnel Project

Direct access to the port

Up to 13 mins saved between Princes Fwy and Appleton Dock

NorthConnex Project

21 traffic lights along Pennant Hills Road avoided

Up to 15 mins saved in 2019

Up to 25 mins saved in 2029

CityLink-Tulla Widening Project

30% increase in lane capacity

Up to 17 mins saved in peak periods, airport to CBD

*KPMG analysis

Benefits for freight operators

Australia's urban toll road networks comprise motorways that have been purpose built to support the freight industry. The design of toll roads incorporates special features, such as suitable pavement depth and grades, tunnel ventilation and break-down bays to accommodate heavy vehicles, which increase the overall project cost. For instance, more gradual inclines are required for trucks, which lengthens the required amount of tunnelling, and this is demonstrated in the design of the NorthConnex tunnel. For the WestLink M7, a continuously reinforced concrete pavement was constructed at significant cost.

However, this investment has underpinned the development of essential freight corridors for Australia that today carry the bulk of the urban freight task and act as a feeder and distributor of other transport modes (including rail, sea and air), providing Australia's capital cities with a more integrated transport system.

These networks provide considerable benefits for heavy vehicles in terms of increased safety, reduced fuel consumption, greater travel-time reliability, smoother travel and less wear and tear on the vehicle, which all contribute to overall operational costs savings.

The benefits to business and freight users have been estimated to be $10.5 billion (over 10 years). This includes $500 million in travel-time reliability benefits, $4.3 billion in travel-time savings and $5.6 billion in vehicle operating costs savings, which results in material financial outcomes for freight operators.

For freight operators, reduced travel time can result in lower costs associated with fuel and wages. Travel on the toll road network also improves safety by reducing the number of times trucks have to stop for traffic lights. The Transport and Infrastructure Council publishes values of time and operational cost savings for freight. This has indicated that in urban traffic conditions one hour saved is worth $44 for a heavy rigid truck, $73 for an articulated truck and $97 for a B-Double to the operator (refer to Figure 24).

For example, a truck travelling southbound across Sydney's western suburbs towards Ingleburn using suburban arterial roads can take over an hour (64 minutes) during morning peak.

Alternatively, the same truck choosing the M7 would take 27 minutes (refer to case study one). This represents potential time savings of up to 37 minutes and in dollar terms this translates to time and cost savings ranging from $27 for a rigid truck to $60 for a B-Double.

Toll charges for freight vehicles are intended to capture the provision made to accommodate these vehicles on the motorway. The specific tolling mechanism is called a "large vehicle multiplier" as large vehicles using the toll road networks of Brisbane, Melbourne and Sydney pay between two-to-three times the car toll depending on the road.

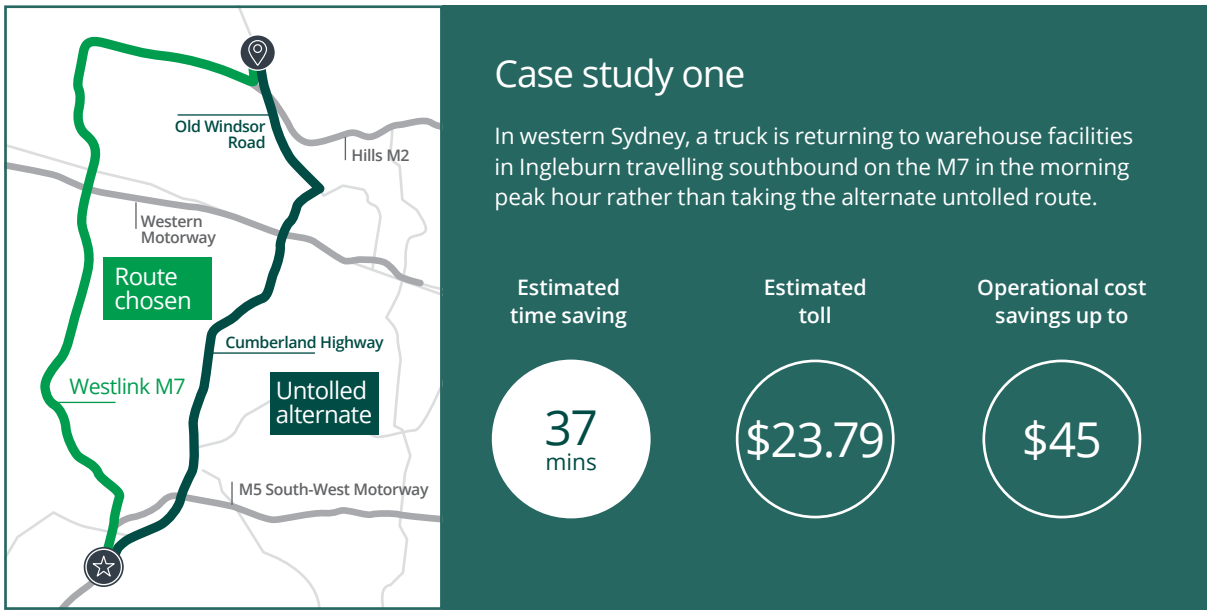
The higher tolls for large vehicles in part reflects the greater value they derive from the time savings and other benefits provided by the tolled network. The higher tolls for large vehicles also reflect the greater impact they have on the road infrastructure. However, the current tolls charged for large vehicles do not accurately reflect these costs.

The wear-and-tear to road pavement caused by one fully-loaded B-Double truck is 32,000 times more than a small car and more than four times the road space.[25] Comparatively, the tolling charges for these vehicles are currently set at two to three times the car toll charge.

Figure 24: Value of travel time on urban roads for freight operators

		Total hourly operation cost in 2017
Rigid trucks		
	Light commercial—2 axle / 4 tyre	$38.47
	Medium—2 axle / 6 tyre	$41.61
	Heavy—3 axle	$43.86
Articulated trucks		
	4 axle	$61.42
	5 axle	$70.08
	6 axle	$73.22
Combination vehicles		
	B-Double	$97.17

Source: Occupant and freight payload value as at June 2013, ATAP Parameter Values. Indexed in accordance with guidance material.



Personal users

Australia's existing toll roads (over a 10-year period)*

$16.8B travel-time savings

$9.5B vehicle operating costs

$1.5B travel-time reliability benefits

West Gate Tunnel Project

Up to 60% extra motorway river crossing capacity

Up to 20 mins travel-time savings

NorthConnex Project

Up to 15 mins saved in 2019

Up to 21 traffic lights along Pennant Hills Rd avoided

96 hrs hours/year saved by Central Coast commuters

CityLink-Tulla Widening Project

30% increase in lane capacity

Up to 17 mins saved between airport and CBD

Up to 20% reduction in serious crashes

Logan Enhancement Project

Up to 90% reduction in travel times**

59% reduction in accidents

* KPMG analysis

**From Wembley Road to the Logan Motorway eastbound in peak.

Personal user benefits

Central to the value that toll roads offer users is travel-time savings. This is the amount of time users save by choosing the tolled route over untolled alternatives. Travel time reliability is also important to road users who regularly depend on the road network.

Toll-road projects are designed to create efficient routes that reduce travel times for users while optimising safety. Transurban's existing toll road networks in Sydney, Brisbane and Melbourne offer ongoing value for users with significant travel-time savings provided across all of our road assets.

Analysis of data generated by our sophisticated on-road intelligent transport systems combined with traffic data, shows that on average workdays, motorists are collectively saving hundreds of thousands of hours by using toll road networks. Specifically, Sydney motorists are saving 160,000 hours; Brisbane motorists 70,000 hours; and Melbourne motorists more than 84,000 hours (refer to Figure 24).

These travel-time savings translate into direct benefits for households. KPMG estimates that these amount to $16.8 billion for individuals over a 10-year period.

Reduced travel times also benefit users of public transport services, specifically users of metropolitan bus services. For example, after a successful trial that saw a significant increase in passenger numbers, five Brisbane bus services have been redirected to travel along the Transurban operated Legacy Way. The trial of the morning peak P443 Moggill to the City via Legacy Way service reduced operating costs and reduced passenger travel times by up to 13 minutes.

The improved travel times led to a 40 per cent increase in patronage on the trial morning peak service. Consequently, five morning peak bus services have now been redirected through the Legacy Way tunnel. In Queensland, TransLink public transport services have free access to Transurban's toll roads.

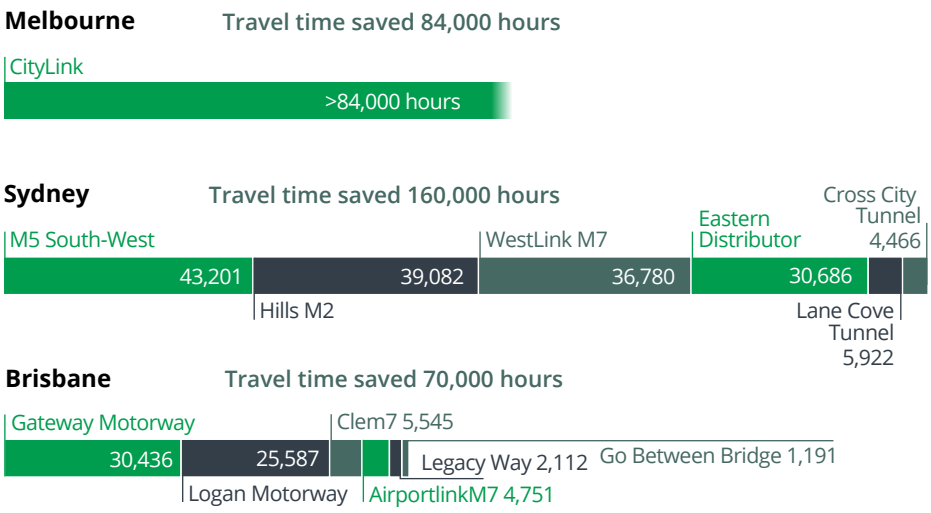
As Australia's urban population grows, so does demand for our roads. To ensure service levels remain high, we undertake major projects in partnership with state governments and others. The business case for these projects is underpinned by the travel time saving they will deliver.

For example, the NorthConnex project in northern Sydney is expected to provide up to 15 minutes of travel-time savings, as motorists will be able to avoid 21 sets of traffic lights on the alternate route between the Hills M2 and the M1 Pacific Highway.

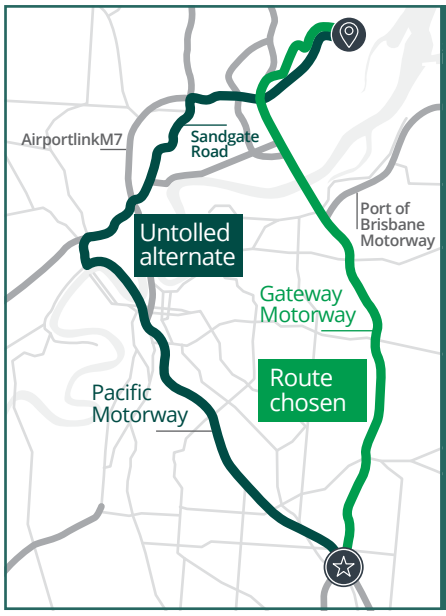
Similarly the West Gate Tunnel Project will improve capacity across the Maribyrnong and Yarra Rivers with up to an extra 60 per cent motorway river crossing capacity. The project will also significantly reduce peak period travel times across the city's western road corridor by up to 20 minutes.

While these projects are still progressing, our experience in delivering projects has shown that the value they will bring to communities is quantifiable. For example, we completed the $400 million M5 West Widening in south-west Sydney in December 2014. This project increased the motorway's capacity by 50 per cent, adding a third lane in each direction. Since its completion motorists have benefitted from up to 25 minutes in travel-time savings. For the average workday commuter this amounts to an extra four hours a week that could be better spent with family, community and sporting involvement, or other recreational pursuits.

Figure 24: Travel time saved daily from choosing toll roads



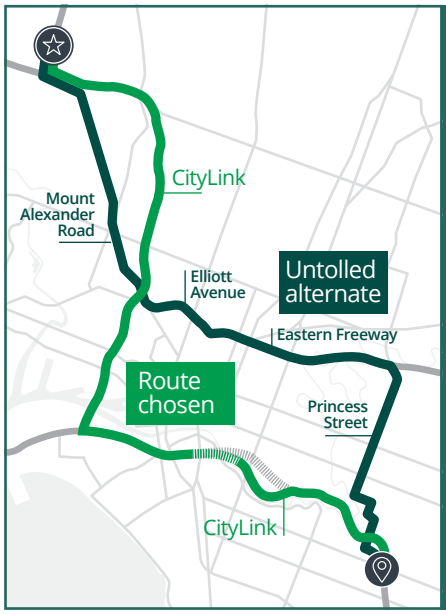
Average workday time savings (May 2017)



Case study two

A working parent living in Eight Mile Plains, in Brisbane's south is running late to pick up their children from a child care centre, which charges $1 per minute in late fees and takes the Gateway Motorway.

Estimated time saving	Estimated toll	Saving in late fees
30 mins	$4.47	$30



Case study three

A businessperson living in eastern Melbourne has a 9.00am flight to catch and asks the taxi driver to take CityLink.

Estimated time saving	Estimated toll	Extra time spent with family
45 mins	$9.05	45 mins

Community benefits

Australia's existing toll road networks*

5,600 jobs created directly and indirectly from existing road networks

West Gate Tunnel Project

6,000 jobs

9,300 trucks off local streets

>14km of new cycle and walking paths including a 2.5km veloway

~9ha new urban green space

NorthConnex Project

8,700 jobs

5,000 trucks/day off Pennant Hills Road

$10M invested into training

300 people trained at Skilling Hub

90 trainees and apprentices employed

CityLink-Tulla Widening Project

1,400 jobs

~3,000 trucks off local roads

Logan Enhancement Project

1,300 jobs

* KPMG analysis

Community benefits

Our corporate vision is "to strengthen communities through transport" and this guides all of our projects and initiatives. The major projects we are progressing will provide more efficient and safer transport networks to improve travel times and reliability and meet the growing transport needs of our cities. The benefits for communities include a better and more direct motorway connection, employment opportunities and new community amenities.

Creating jobs and skilling the workforce

The KPMG modelling shows Australia's toll road networks directly and indirectly support 5,600 jobs per year across Australia.[26] Additionally, construction and upgrade projects create thousands of employment opportunities across the design, construction and operation phases.

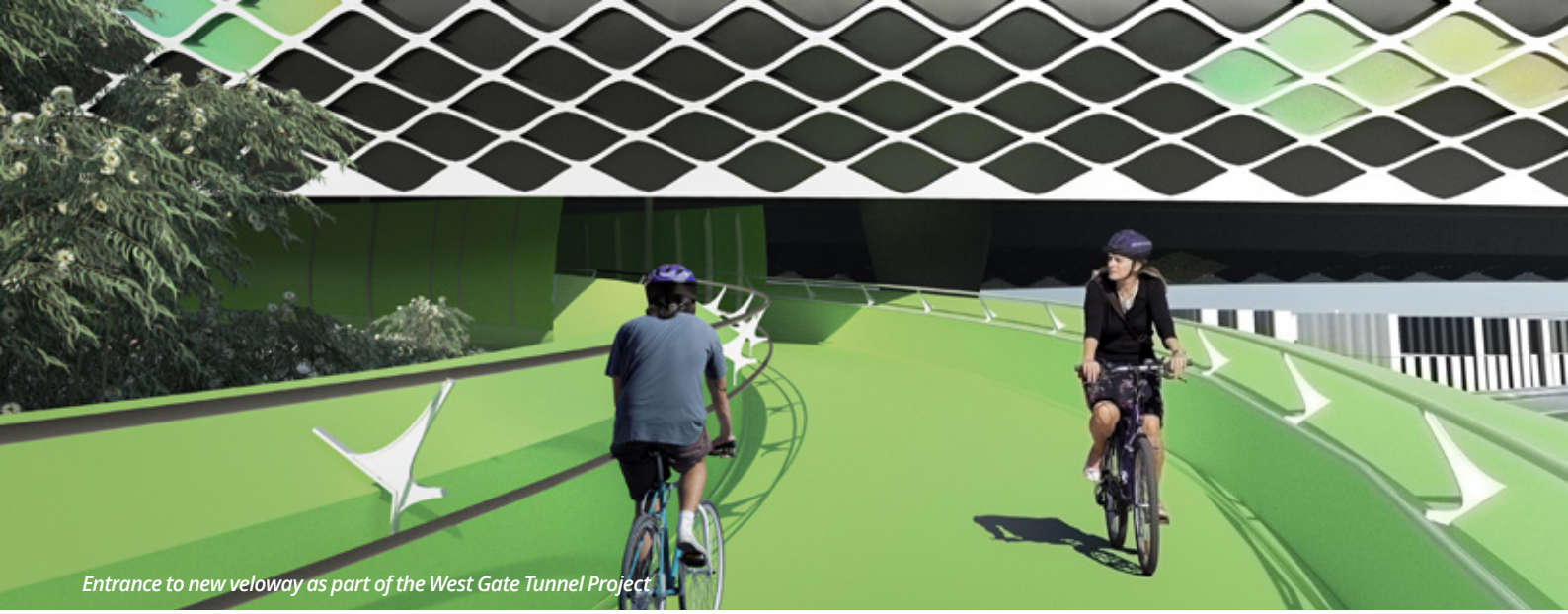
The NorthConnex project will have created approximately 8,700 jobs by the time it is completed. The West Gate Tunnel and Citylink Tulla Widening will collective create almost 7,500 jobs for Melbourne, and the Logan Enhancement Program will create 1,300 employment opportunities for Queenslanders.

Skilling NSW

The high levels of infrastructure investment in NSW and the specialised nature of tunnelling have led to skills shortages. The NorthConnex project delivery team has met this challenge through a $10 million investment in training, including a "NorthConnex Hub" classroom and training facility.

This dedicated facility is designed to provide training and certification in high-demand skill areas for 300 employees working on the project.

Up to 90 trainees and apprentices as well as other employees are being trained in courses including civil construction, mobile plant operation, emergency and crisis management, financial acumen, leadership and cultural heritage awareness.



Entrance to new veloway as part of the West Gate Tunnel Project

Benefits for residents

With the delivery of a motorway project, communities benefit as users of an improved transport network with improved access to employment, education, services and social opportunities. They also benefit as residents of safer and more liveable suburban streets.

A key benefit of the West Gate Tunnel Project is the removal of 9,300 trucks daily from local streets in Melbourne's inner west, improving safety and amenity, making them more attractive places to live. Similarly, the NorthConnex Project will remove 5,000 trucks from Pennant Hills Road, which is a significant outcome for the two school zones previously impacted by these vehicle movements.

Removing this kind of traffic also relieves congestion on suburban streets, improving noise levels and air quality for residents.

Increasing community amenity

Our major projects have also presented the opportunity to implement some additional enhancements that will benefit the community, such as:

- provision of new urban green spaces and upgrades to existing public spaces
- the creation of extensive walking and cycling paths
- extensive landscaping and tree planting programs.

The West Gate Tunnel Project includes the creation of almost nine hectares of new community open space and over 14 kilometres of new and upgraded walking and cycling paths, creating a continuous link from Werribee to central Melbourne. The project also includes extensive new landscaping and significant improvements to noise barriers and associated community amenity.

To celebrate the Logan Enhancement Project, Transurban Queensland is donating up to $2 million to regenerate a large parcel of land along the Logan Motorway at Heathwood for community use. We are working with various stakeholders, including a number of elected representatives, to ensure the use of the site meets the community's needs.

These are just few examples of the initiatives we undertake to create a lasting legacy for the community.

Environmental benefits

Australia's existing toll roads

$336M Australia's existing toll road networks

West Gate Tunnel Project

>17,000 trees planted

~1M plants and shrubs

NorthConnex Project

26% modelled reduction of Scope 1 and 2 carbon emissions

42% modelled reduction in total project water use

29% modelled reduction in life cycle impact of materials

1st tunnel in Australia to use LED lighting

>1ha of vegetation saved through project design

70% reduction in truck exhaust compared with Pennant Hills Road

CityLink-Tulla Widening Project

150,000 trees and shrubs planted

80,000 trees planted to date

Logan Enhancement Project

15 fauna crossings

14% reduction in CO_2 emissions per vehicle in 2021

Environmental benefits

Toll-road projects that help relieve traffic congestion and improve traffic flow also provide significant environmental benefits.

Our analysis of travel time and fuel efficiency data confirm that using Transurban's routes in free-flow traffic situations produces less greenhouse gas emissions per kilometre than using an alternative route along arterial roads.

An environmental review of the M5 South West Widening Project (delivered in 2014) estimated a 30–40 per cent reduction in customer greenhouse gas emissions as a result of improvement in travel times and improved driving conditions. KPMG modelling estimated that toll roads generated $336 million in environmental benefits over a 10-year period.

We have set targets to achieve Infrastructure Sustainability (Excellent) ratings for our Australian projects and develop these in line with the three pillars of our sustainability strategy:

- Be good neighbours
- Use less
- Think long term.

The NorthConnex project has been independently recognised for its sustainable approach to design, achieving a 'Leading' Infrastructure Sustainability Design rating by the Infrastructure Sustainability Council of Australia (ISCA). To date NorthConnex is one of only six projects, and the only motorway, in Australia to receive this rating. The Logan Enhancement Project achieved an "Excellent" rating by ISCA.

The NorthConnex tunnel incorporates a smoother and flatter gradient than traditional tunnel projects, which, in turn, will allow vehicles to maintain normal travel speed. This means better fuel efficiency, reduced emissions and enhanced safety. The design also incorporates greater internal dimensions —both in height and width. This will enable greater volumes of fresh air to move through the tunnel, thereby increasing the dilution of emissions over its length.

The Transurban project team is exploring opportunities to incorporate more sustainable technology into the design of NorthConnex, which will be the first tunnel in Australia to switch to LED lighting. This will drastically reduce electricity consumption and maintenance impacts during operation.

We also reached agreement with local and state authorities to use excavated material from the NorthConnex tunnel project to help turn a disused quarry into a recreational area. This will reduce the distance trucks need to travel to offload spoil and at the same time help to create valuable green space for the community.

The CityLink Tulla Widening project received an "Excellent" rating from ISCA for its sustainability in design, construction and operation.

As part of the project we are partnering with Landcare Australia and the local community to improve the environmental amenity of two sites located within the Power Street to Bulla Road works section.

The Landcare projects are additional to the project's landscape plans that will see more than 150,000 shrubs and trees planted in the area.

Landcare Australia's environmental team worked closely with local councils and community groups to identify potential sites for rehabilitation.

More detail about this project is on page 45.

The Landcare projects have been funded by Transurban and are supported by CityLink Tulla Widening project partners VicRoads and CPB Contractors.

We are taking a similar approach to achieving sustainable outcomes in the proposed West Gate Tunnel Project. Sustainability principles have been integrated into all aspects of the project's design and specific measures have been identified to improve sustainability performance including:

- integrating resource and energy efficiency into the project's design, and adopting sustainable construction methods to minimise the use of energy and water, reduce waste and minimise greenhouse gas emissions

- incorporating life cycle costs into project design and delivery to reduce operation and maintenance costs of the asset over the longer term
- meeting minimum local content requirements under the Victorian industry Participation Policy
- requiring the project infrastructure to be designed to withstand anticipated climate hazards and to continue to operate under future climate conditions.

It is anticipated that the project would achieve an Infrastructure Sustainability Council of Australia rating of "Excellent" for the design and a rating of "Excellent" for the as built construction.

Our focus on achieving sustainable outcomes extends to the operation of our existing roads, including considering innovative ways disused sites near our roads can be regenerated.

Hornsby Quarry

We embed sustainability considerations into every decision we make, across our network and in the projects we develop.

NorthConnex will excavate around 2.6 million cubic metres of spoil to create its twin tunnels. At the start of construction, the project made a commitment to reuse and recycle any material where possible. In this view, collaborating with the state and federal governments, NorthConnex has partnered with the Hornsby Shire Council to help realise the potential of Hornsby Quarry.

Located within walking distance from the centre of Hornsby, the Hornsby Quarry is an ecological valuable piece of land immersed in history. It is one of the largest volcanic diatreme's in Sydney and home to a rich and diverse community of native Australian fauna and flora. From the early 1900s, the quarry was operated by a private business until 2002, when it became unprofitable and was bought by the Hornsby Shire Council. Sitting unused for more than a decade, the quarry was costing the council thousands of dollars each year in maintenance costs without benefit.

Following an extensive process of review to minimise any environmental impacts and preserve the area's heritage significance, the Hornsby Quarry Road Construction Spoil Management Project was agreed. The initiative involves partially filling the Hornsby Quarry void with up to one million cubic metres of spoil from NorthConnex tunnel sites, and in the process, taking the first step to transform the site into thriving public parkland for the benefit of the entire community.

The Hornsby Quarry project provides benefits for the project and the community. The $31 million investment minimises the overall distances required for transporting the NorthConnex project spoil by around 3.7 million kilometres. This means fewer trucks on other routes transporting spoil to alternative locations and helping to ease congestion on the wider network.

In its current state, the Hornsby Quarry is unsafe for the public and denies community access to the diatreme. Once NorthConnex tunnelling has been completed, the Hornsby Quarry site will be returned back to the council to continue its rehabilitation. These plans are still in development, but the vision is to turn the area into a spectacular new open space for recreation and entertainment. The diatreme will also be open to the public for the first time, providing new learning opportunities for students and budding geologists. To also preserve the site's history, archival recording of the diatreme will be carried out and the records made available to Hornsby Shire Council.

The Hornsby Quarry project is an example of Transurban's commitment to sustainability in action. By partnering with all three levels of government, NorthConnex will leave a lasting legacy in Sydney's north for generations to enjoy for years come.

Conclusion

Despite record investment in transport infrastructure and services from the public and private sectors, demand on Australia's urban transport networks continues to outpace supply. Our growing population and progressive urbanisation have already put significant strain on our transport system – with few signs of relief in the future. As a result, congestion during workday morning and afternoon peaks is extending travel times, reducing journey time predictability and impacting productivity and the commuter experience.

In a world where scarcity of government capital prevails, the overarching objective for stretched government balance sheets should be to deliver the most effective infrastructure using finite resources. To achieve this, governments need to identify sources of capital beyond their own balance sheets and determine where and how they can attract private capital (particularly Australian retirement savings from both the public and private sectors) to increase their available funding pools.

Australian governments have a long history of working with the private sector to deliver infrastructure and bring additional capital to projects. This has enabled collaborations that have brought significant gains to our communities, our cities and our economy.

Governments have established processes that work to balance the need for transparency over project negotiations with the private sector's requirement to safeguard its intellectual property and reporting obligations. Without this balance, government's ability to run future, effective competitive tender processes would be impacted, which could increase costs of infrastructure delivery.

"Our Government doesn't have all the ideas, the funding, or all the know-how on delivering infrastructure—no government does. We are looking to the private sector. We want to hear your ideas. We are receptive to unsolicited proposals."

Hon Darren Chester MP,
Minister for Infrastructure & Transport
February 2017

Recommendations

Continue to work with the private sector: Australia has one of the most developed markets for private sector participation in infrastructure in the world and Transurban commends the sophistication of the government departments that have created the effective models that facilitate this engagement. With Australia's global competitiveness as well as the productivity and liveability of our cities depending in large part on the effectiveness of our transport networks, government should continue to seek out private capital and expertise in the delivery of transport infrastructure projects.

Integrated transport planning: state and territory governments should continue to communicate integrated transport plans for each capital city, in a way the public understands. These plans should consider technology, regulatory and physical infrastructure solutions—so that the community can understand how individual projects across all modes of transport fit into long-term plans for their community.

Infrastructure pipeline: All governments should continue to pursue the development and publishing of a confirmed pipeline of quality projects, responding to genuine need, that have multi-partisan support. This pipeline should signal where challenges are known but solutions are being considered, so that government can continue to incorporate innovation from the private sector, academia and the community into their consideration of ideas.

Timeliness of reviews: Australian governments (through the Council of Australian Governments) should consider including recommended time frames for independent agencies (such as the Auditor-General) to review engagements with the private sector in order to enable continual improvement to the process.

Improve community understanding of processes: In the past five years, there have been a range of inquiries within the infrastructure sector, including:

- the Productivity Commission Inquiry into public infrastructure
- the Harper Competition Review
- Infrastructure Australia's Audits and Plan
- State legislative committee reviews and this current inquiry.

These inquiries provide opportunity to confirm that current infrastructure development and delivery processes provide adequate clarity on accountabilities, deliver value for money and uphold the public interest. They also provide opportunities to communicate with the public on these processes.

Governments as well as developers, owners, financiers and operators have a responsibility to advocate the successes and respond to identified learnings of these reviews.

Appendices

Appendix 1—
Investment in toll road projects delivered through PPPs

NEW SOUTH WALES		
M5 South West Motorway*	$315M	Construction
M5 Western Extension	$65M	Upgrade
Hills M2*	$644M	Construction
M5 Moorebank Avenue Interchange	$32M	Upgrade
Sydney Harbour Tunnel	$750M	Construction
Eastern Distributor*	$680M	Construction
Cross City Tunnel*	$680M	Construction
Westlink M7*	$1.5B	Construction
Lane Cove Tunnel*	$1.1B	Construction
Hills M2 Upgrade*	$550M	Upgrade
M5 West Widening*	$400M	Upgrade
NorthConnex	$2.9B	Construction
M2 Integration Project*	$105M	Upgrade
Lane Cove Road Ramp	$22M	Upgrade
QUEENSLAND		
Gateway Motorway 1986	$140M	Construction
Logan Motorway 1988	$77M	Construction
Clem7	$3B	Construction
Go Between Bridge	320M	Construction
Gateway Upgrade 2011	$2.012B	Upgrade
Legacy Way	$1.5B	Construction
AirportlinkM7	$3.74B	Construction
Logan Enhancement Project, underway	$512M	Upgrade
Inner City Bypass Upgrade, underway	$60M	Upgrade
VICTORIA		
CityLink	$1.8B	Construction
Eastlink	$2.5B	Construction
Tulla-Calder Interchange	$150M	Upgrade
M1 CityLink Upgrade	$1.39B	Upgrade
CityLink-Tulla Widening	$1.28B	Upgrade

*Estimated at time of contract award

Appendix 2—
Adding value to government budgets—Transurban's current project pipeline funding

Victoria

CityLink-Tulla Widening
Total cost $1.28B

West Gate Tunnel
Total cost $5.5B

Financial arrangements to be finalised pending planning approval.

New South Wales

NorthConnex#
Total cost $3B

Queensland

Logan Enhancement Project*
Total cost $512M

Inner City Bypass*
Total cost $60M

Transurban investment | State investment | Federal investment

#Partners: QIC Global Infrastructure 25%, Canada Pension Plan Investment Board Private Investments 25%
*Partners: Tawreed 12.5%, Australian Super 25%

Appendix 3—
Account customers average monthly tolling costs

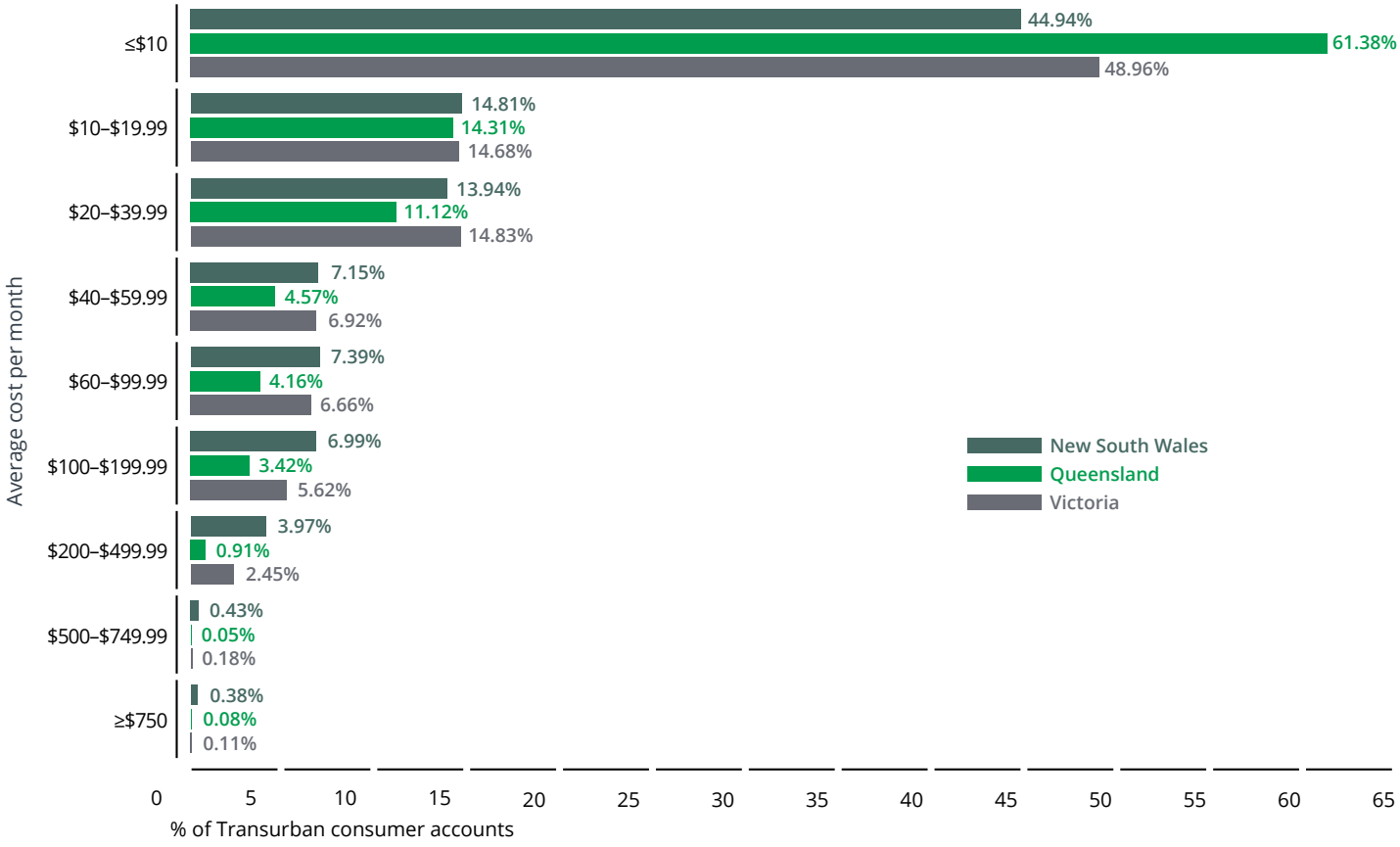
The following analysis is of the average monthly tolling costs of Transurban's consumer account customers across New South Wales, Queensland and Victoria. It outlines the percentage of customers per cost band.

Average cost per month

*Includes commercial use**

	≤$10	$10–$19.99	$20–$39.99	$40–$59.99	$60–$99.99	$100–$199.99	$200–$499.99	$500–$749.99	≥$750
NSW	44.94%	14.81%	13.94%	7.15%	7.39%	6.99%	3.97%	0.43%	0.38%
QLD	61.38%	14.31%	11.12%	4.57%	4.16%	3.42%	0.91%	0.08%	0.05%
VIC	48.96%	14.68%	14.83%	6.92%	6.66%	5.62%	2.45%	0.18%	0.11%
Total	**53.92%**	**14.53%**	**12.90%**	**5.91%**	**5.64%**	**4.83%**	**1.97%**	**0.17%**	**0.12%**

*Analysis indicates that significant proportion of these customers utilise their consumer customer account for commercial use.



Appendix 4—
Best Practice in PPPs

With experience in Australia's effective PPP model, Transurban successfully partnered with the Virginia Government to develop the dynamically-priced 495 and 95 Express Lanes, located outside of Washington DC. This partnership has been lauded for its innovative approach to tackling peak-hour gridlock on two of the country's busiest highways while at the same have addressed policy issues for stakeholders.

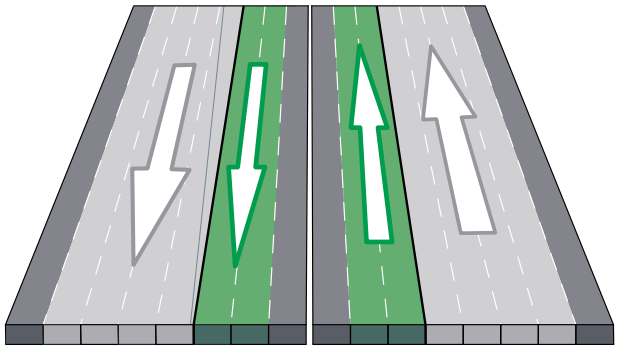
Prior to the Express Lanes projects being operational, the Capital Beltway was ranked in the top three worst commutes with 194 hours of congestion a week. The Virginian Government had planned a traditional highway expansion but was forced to abandon plans after significant public opposition due to residential acquisitions and prohibitive costs. Transurban and its partners proposed an alternative solution under the Public Private Transportation Act—to build four new dynamically tolled Express Lanes next to the eight existing freeway lanes. The proposal largely used the existing footprint, reducing the impact on the local community and transferring the risk to the private sector.

The 495 Express Lanes opened in late 2012 and delivered the area's first major expansion of interstate capacity in over 40 years. The 95 Express Lanes opened late in 2015 and adjoined the 495 Express Lanes to create a network of managed motorways around the busy Washington D.C. area. Based on a sophisticated algorithm, the toll-price increases and decreases depending on traffic density and ensures a minimum average speed of 55 miles per hour and 45 miles per hour for the 95 and 495 Express Lanes respectively. The Express Lanes offer motorists with three choices:

- travel on the regular lanes that run alongside the Express Lanes for free
- pay to use the Express Lanes—where they can rely on minimum speed, or
- car pool or take the bus and get to travel on the Express Lanes for free.

The creation of the Express Lanes has addressed the long-standing gridlock and provided a facility that offers reliable and faster travel times, which are on average 40 per cent higher than in the adjacent general purpose lanes. The lanes encourage car pooling and predictable travel times mean buses can meet their schedules. Travel times have also improved on the regular lanes as commuters take advantage of the new options and capacity.

What are Express Lanes?



General Purpose Lanes | 495 Express Lanes configuration | General Purpose Lanes

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