



INDEPENDENT TOLL REVIEW

Independent Toll Review

Interim Report

March 2024

Acknowledgement of Country

The Independent Toll Review acknowledges the traditional custodians of the land on which we work and live.

We pay our respects to Elders past and present and celebrate the diversity of Aboriginal people and their ongoing cultures and connections to the lands and waters of New South Wales.

Many of the transport routes we use today - from rail lines, to roads, to water crossings - follow the traditional Songlines, trade routes and ceremonial paths in Country that our nation's First Peoples followed for tens of thousands of years.

The Independent Toll Review is committed to honouring Aboriginal peoples' cultural and spiritual connections to the lands, waters and seas and their rich contribution to society.

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Executive Summary

The broad significance of tolls

Tolls cost motorists in Sydney around \$2.5 billion each year. For ordinary motorists, tolls can be a significant cost at a time when cost of living pressures are a worry. For businesses, especially smaller businesses, tolls can also be a concern, particularly if competitive pressures prevent these costs from being fully passed on to customers.

More generally, tolls have an important role in the life of the people of Sydney. They affect where they live and work and the communities in which they live. They are affected by, and themselves affect, demographic, economic and social changes.

Besides reflecting and affecting land settlement patterns they affect property values and patterns of public transport use.

They affect how quickly, safely and comfortably people travel. They also have an impact on people who are not driving on toll roads, relieving, or in some cases, adding to congestion, and they affect carbon emissions and the environment. They are also heavily used by trucks to carry freight around the metropolitan area and thereby contribute to costs in the business sector.

Toll roads are part of a wider system of roads and public transport.

This report is about tolls in the Sydney metropolitan area. There are 13 toll roads in Sydney, including two¹ operated by the State Government. The remaining 11² are operated by private concessionaires³. This makes Sydney the most tolled city in Australia. The city location of the toll roads makes their economic and social impact large.

Tolls have been developed for each of the thirteen toll roads separately without regard to any overall system linking them.

There is no unified system of tolling.

Tolls differ. Some are charged on the basis of distance travelled, with varying charges per kilometre for different roads; others charge an access fee; yet others charge a combination of an access fee and a distance related charge. Some roads have caps on the tolls charged. Over time, tolls are escalated by set rates, but the escalation rates again vary between roads.

Regarding the Sydney Harbour Bridge and the Sydney Harbour Tunnel, only southbound motorists pay tolls. On the Eastern Distributor only those travelling north pay.

The myriad of arrangements reflect a mixture of economic, commercial and political considerations that were brought to bear in determining the toll for each tollway.

An important theme of this report is the need to have a coordinated network pricing system based on simpler principles than at present. This will enhance the efficiency and fairness of tolls and help motorists to have a better understanding of the cost of their trips.

¹ Sydney Harbour Bridge and Sydney Harbour Tunnel

² WestConnex M4, WestConnex M4-M8 Link (including Rozelle Interchange), WestConnex M8, WestConnex M5 East, Westlink M7, Hills M2, Lane Cove Tunnel (including Military Road E-Ramps), Eastern Distributor, M5 South-West, Cross City Tunnel and NorthConnex

³ There are 10 concession agreements covering these 11 roads. One concession agreement covers both the WestConnex M5 East and WestConnex M8.

Most toll roads are leased from Government and operated by private 'concessionaires'. Transurban has a minimum 50 per cent ownership of each of the privately operated toll roads.

The system is based on each tollway having its own individual contract, each long lasting although of different durations. The contracts are tightly written. In theory they can be changed by agreement between the Government and the concessionaires, but in practice it is considered unlikely all parties involved will agree to genuine reform of tolls and if they did this is likely to involve significant cost to the public.

There are also competition law restrictions about agreements, not to mention substantive competition policy issues. There are significant contractual rights if the arrangements are changed by law.

Problems with toll setting

There are numerous concerns about the structure and level of tolls identified in this report. These problems essentially stem from the way tolls have been set under individual concession agreements at different times over the past three decades or so.

Public Private Partnerships

Private finance has been used to construct and operate most of the toll roads under Public Private Partnership agreements between governments and the concessionaires. In return the private concessionaires have been able to collect tolls from users of the roads according to amounts specified by toll schedules in their concession agreements. These schedules specify base tolls as well as escalation rates over the length of the concession agreements, generally between 30-40 years.

It is widely accepted that Governments can borrow more cheaply than private sector organisations, but that the latter may have stronger incentives and scope to perform necessary road design, construction, operation and maintenance tasks efficiently. Any new road should be justified on the basis that the community benefits to be obtained outweigh any associated costs. The use of private finance in preference to Government funding of roads should in turn be based on value for money considerations (generally assessed by comparing public and private costs with the aid of a Public Sector Comparator). However, governments have often perceived that they have not had the capacity to fund new road projects and have therefore placed significant emphasis on private sector finance.

No cost or limited cost to governments

A reluctance to support major motorway projects with government borrowings has also in the past often meant that the great majority of funding for these roads has had to come from the private sector and ultimately from tolls. The desire to have roads funded at no or little cost to government has meant that more of the funding burden has fallen on the users of roads via tolls, even when the broader community has obtained substantial benefits from a road.

Absence of competitive bidding to provide the lowest tolls under concession agreements

Competitive bidding processes have been used to determine who the concessionaires would be for the individual roads. Competitive processes have not, however, operated in the determination of tolls. Rather tolls have been determined administratively by governments and bidders have framed their bids around the advice on tolls given to them. Other criteria, such as reputation, past experience and design innovation, have determined the bidding outcomes.

Tolls have been set administratively by governments with little opportunity for future amendment

Since tolls have been set administratively rather than by competitive market forces, the likelihood that they have not always been set appropriately becomes a real one.

The concession agreements specify the basis for setting tolls over the life of the concession agreements. An inappropriate toll base or escalation rate, for example taking account of changes in demand or technology over time, could not be readily corrected.

Toll setting was more focused on financial concerns than on economic management of the roads

The approach to setting tolls has been influenced more by the perceived need to cover the concessionaire's financing costs than by the need to manage traffic on the roads. It has also not had a strong regard to principles of efficiency and fairness in setting individual tolls.

Tolls can influence demand and their structure and level can be altered to modify traffic flows over time. One concession agreement (NorthConnex) contemplates that the concessionaire may wish to set time of day (peak/off peak) tolls. But the application of this approach to pricing would depend on whether the concessionaire wished to implement it and requires Government approval.

It is only in recent years that an attempt has been made to develop for future roads a more uniform approach to setting tolls based on a common set of principles. However, there remains in place a wide diversity in the way tolls are set under the different concessions.

Lack of transparency on key elements of toll determinations

Another major problem with the toll setting process has been its lack of transparency. While much information has generally been made available about proposed new roads from a planning perspective, it has not included the detail needed to assure the public that tolls have been set appropriately. In particular, the Base Case Financial Model (BCFM) information related to the tolls has not been made available to the public and concessionaires have not been required to disclose data on actual rates of return realised on individual road investments. Further, assessments of user willingness to pay, including Value of Travel Time Savings surveys, have not been subject to public review before decisions about tolls have been taken.

The allocation of traffic risk to concession holders adds to the level of tolls

A significant aspect of the concession agreements is the allocation of risk between government and concession holders. Particularly important here is the allocation of traffic risk. The income of concessionaires will depend on the volume of traffic which uses the road and pays tolls. This can be uncertain, especially at the time of construction of the road. Higher tolls will need to be set if concessionaires take on this risk rather than governments.

Most of the concession agreements have, in fact, allocated the traffic risk to the concessionaires, and this will be reflected in higher tolls.

Rates of return for concession holders have been generous

Most of the concession agreements date from the 1990s and 2000s, and their built-in rates of return have reflected the higher costs of capital prevailing at the times the agreements were concluded. These rates can be regarded as generous compared to rates which would be considered should apply today.

Tolls set under the concession agreements encourage concessionaires to seek efficiency improvements since the benefit of these improvements can be retained by them. There is no general requirement for efficiency benefits to be shared with users in the form of lower tolls.

Toll escalation means users pay more in the future

Under the concession agreements tolls are escalated over time at least in line with the Consumer Price Index and often above this index when inflation is more modest than it has been in Australia for the past couple of years. Most concessions include 'floor' provisions, which means that the toll price does not decrease, even if Consumer Price Index (CPI) does. This pattern of cost recovery for toll road operators means that governments have been able to avoid, to some degree, criticisms in the short term of high tolls since there is an element of deferral of these to the longer term.

Transurban's dominance

Past governments have allowed Transurban to become the dominant player in the Sydney toll market. The Australian Competition and Consumer Commission (ACCC) has also not opposed Transurban's acquisitions of other concessions, although this approach seems to be changing. Transurban has benefited significantly from its road acquisitions. It has acquired assets which are attractive to investors because of their long-term earning power and protection from inflation. Transurban has been able to retain the efficiencies gained from being able to operate multiple toll roads. It has benefited from being able to develop expertise in toll road operations and spread its risks more widely. Its dominance has given it both market power, especially in bidding for new concessions, and political power, in dealing with governments. It has been able to influence government road planning decisions to its benefit, for example through unsolicited proposals.

The public appears to view Transurban as a monopolist taking advantage of its position to make excessive profits. The Review considers in the early years of a concession excessive profits are less likely to be realised as debt payments are significant, and revenues are building. It is in the later years, when tolls have escalated greatly and traffic has grown significantly, that profitability may be high.

Most motorists think tolls are too high

The Review sought to ascertain through a representative sample of more than 1,500 drivers across the Sydney metropolitan area information on the use of toll roads and attitudes to tolls. The responses were emphatic. The great majority of respondents (87 per cent) considered that tolls were too high (60 per cent strongly agreeing with this proposition). A similar overall proportion thought that the financial burden of tolls had increased over time; and over 70 per cent considered the cost of tolls to be unfair.

The increased number of toll roads has added to concerns about tolls

Sydney now has more toll roads than any other capital city in Australia. Comparisons with overseas cities are difficult as the nature of tolling schemes can vary significantly. For example, the cordon tolling schemes operating in London, Singapore, Stockholm and Milan effectively cover many roads within their cordon areas. The significance of tolls, however, is also not just related to the number of roads covered by tolls or the kilometres these roads cover, it is also related to the level of tolls. Wherever Sydney stands in relation to other cities, it seems clear that concerns about the cost of tolls have grown as the number of toll roads in Sydney has increased.

One manifestation of this has been the tendency for governments to try to soften the impact of tolls by providing various toll relief schemes, such as cash back and caps on individual road tolls and overall spending on tolls.

Leading transport economist Professor David Hensher⁴ has referred to the notion of toll saturation as likely to be applying in Sydney. This hypothesises that as more and more toll roads have been added to the network some motorists may have run up against a toll budget barrier causing them to economise on their use of these roads. Toll saturation is one factor which may have led to an over-estimation of the Value of Travel Time Savings (VTTS) from using toll roads.

The growth of toll roads has no doubt also heightened community concerns about the complexity and variation in the methods of calculating tolls across the various concessions, which have come to make up parts of the total toll road network.

Toll roads and congestion

Sydney has been regarded as the most congested capital city in Australia. It is also relatively high up in the rankings of congested cities in the world. The toll roads should help to relieve congestion across the metropolitan area. This assumes that they attract traffic away from congested ancillary and local roads. However, if tolls are set too high, they may deter use of the tolled road and this effect may be muted.

Analysis conducted by the Review has highlighted a dichotomy between the toll roads and the major non-toll roads in Sydney. Overall, the toll roads, even at their busiest time in the morning peak hour in 2022, were found to move relatively freely with limited delays and only a few persistent congestion hot spots. However, the untolled roads were more crowded and congested on average throughout the day. This may, partly at least, reflect the aversion a significant proportion of motorists have to paying tolls and the perception held by the great majority of users that tolls are set too high. Rather than use the toll roads, motorists are continuing to utilise the more congested untolled roads.

The future toll burden is likely to be huge

The Review is concerned about the future burden of tolls for Sydney motorists. The NSW Government estimate that over the next 37 years, with escalation growth until 2060, \$123 billion of tolls will likely be paid by motorists across Sydney motorways in today's dollars. In nominal dollars the figure is \$195 billion. The WestConnex scheme alone accounts for around 52 per cent of the estimated toll figure in today's dollars. Based on these figures, it seems that users will be paying for the cost of this scheme three times over in tolls.

Our terms of reference

The Review was asked to consider specifically the efficiency, fairness, simplicity and transparency of tolls as well as the impact of competition and regulation on tolls. We make further comments on these matters below.

Efficiency concerns

First, high tolls relative to operator costs cause efficiency losses. They unduly restrict use of the roads (causing allocative inefficiency).

⁴ Hensher, D. A., Ho, C. Q., Liu, W. & Institute of Transport and Logistics Studies. (2014). How much is too much for tolled road users: Toll saturation and the implications for car commuting value of travel time savings? The University of Sydney.

Second, the absence of a consistent network approach to setting tolls is also a source of inefficiency, as well as complexity.

The significant variations, which now exist between the way tolls are calculated on individual toll roads impacts on the use of those roads by users. Some roads have significantly higher charges, expressed on a per-kilometre basis, than others, for reasons that do not have a clear economic rationale. Different escalation rates for tolls add to distortions over time. For example, tolls on the Sydney Harbour Bridge and Tunnel were not changed for thirteen years, until recently, while other tolls were subject to quarterly or annual escalation. The Cross City Tunnel has had relatively high tolls ever since it commenced operating, and this has no doubt contributed to its long-term under-use. One-way tolling has impacted significantly on traffic flows on some toll roads and adjacent ancillary and local roads.

Users of the toll roads should have a clear idea of the basis of charging from wherever they join the toll road network. The methodology by which tolls are set should be coherent and economically rational.

A third source of inefficiency in tolls is their lack of flexibility in reflecting demand conditions on the toll roads. When use of toll roads is low, there are strong grounds for setting tolls at lower levels to attract further traffic. The additional cost to the road operator of further traffic when a road is under-utilised is negligible. On the other hand, if a road is congested there is a case for rationing demand by raising tolls for a time to ensure traffic can flow more freely. This is to take account of the external costs associated with use of the roads at these times. Peak and off-peak tolls are currently only set for the Sydney Harbour Bridge and the impact of having these tolls has been diminished as their real value has declined over time.

Fairness concerns

Current tolls lack fairness in that they impact more severely on users living in Western Sydney. We refer to Western Sydney broadly - including the North-West and South-West.

From surveys we have conducted, and from the submissions of stakeholders, we have found that the financial impact of tolls is greatest in Western Sydney. These areas of Sydney have the highest number of motorists who will be eligible for the Government's new \$60 Weekly Toll Cap⁵, who report a lack of alternatives to toll roads, and report high use of toll roads. Our analysis of public transport access in Sydney shows that these areas of Sydney have comparatively lower access.

Concerningly, we know these areas also face risks of mobility-related social exclusion, that is, of being unable to access essential services and opportunities due to transportation barriers. Using indicators such as age distribution, family income, and unemployment levels, we observe the risk of mobility-related social exclusion in the South-West of Sydney.

Different tolling regimes across the roads are another source of unfairness, for example one-way tolling on the Sydney Harbour Bridge, Sydney Harbour Tunnel and Eastern Distributor is anomalous.

Toll relief should be directed to reducing tolls.

To offset some of the perceived unfairness of tolls, governments have introduced toll relief schemes, currently costing over \$0.5 billion per annum. These schemes have historically had a relatively low take-up rates and are not particularly well targeted to disadvantage. They cause distortions when tolls bear no relation to the benefits derived by users. Concessionaires benefit significantly from any extra traffic generated by relief measures but have no requirement to repay this benefit to government. The Review considers a better use of funds associated with current relief schemes, if it was considered that relief should continue beyond the current temporary schemes, would be to apply this relief directly to reducing tolls.

⁵ Minister for Roads (2023, December 8). \$60 weekly toll cap to provide cost of living relief to 720,000 motorists. NSW Government. <https://www.nsw.gov.au/media-releases/toll-cap-cost-of-living-relief>

Simplicity concerns

Tolls can be complex but widespread availability of information about the basis of their calculation can help to deal with this issue. However, when the basis of their calculation varies significantly between roads, as it does at present, simplicity is replaced by complexity. The Review considers that a coherent network tolling approach to setting tolls can help to restore simplicity for users.

Transparency concerns

The Review is concerned about the lack of transparency generally in toll setting and sees the need for a much more open process for setting tolls to help detailed understanding by the public of the basis on which tolls have been set.

Transparency also applies to individual user decision making. Information should be readily available and timely to assist users to make good choices in their use of the toll roads. For example, users should be able to compare readily the time savings by using toll roads against the toll cost. This should be made available in different forms to cater for different skills and competencies in handling electronic means of communications. Roadside communication could be improved. The Review considers there is scope for both current retailers but particularly E-Toll to enhance their performance in relation to helping motorists understand past and future spend on tolls.

Competition and regulation issues

Concerns about Transurban's dominance have already been alluded to. The Review considers that a stronger competition lens is needed by governments when granting concessions, when considering unsolicited proposals, and when considering the terms of concession agreements, including setting tolls.

The Review also considers that more conventional regulatory approaches and institutional arrangements should be applied to toll roads than is now the case under the concession agreements. This includes more regular reviews of tolls and independent oversight by the Independent Pricing and Regulatory Tribunal (IPART) in New South Wales. This would bring independent, expert pricing experience to the task. It would provide assurance to toll road operators that their valid interests would be protected. However, pricing would be more flexible and above all the process of determining tolls would be more transparent to the public.

Elements of the reform program proposed by the Review

The Review is proposing a significant three phase toll reform program to introduce a new network system of tolls and fairer and more efficient tolls.

Phase 1

Phase 1 involves legislation being passed by the Government and network tolls being set. The legislation would:

- a. Provide authority for a system of network tolls to replace tolls currently set under individual concession agreements.
- b. Establish a new government body (State TollCo) to assume responsibility for setting network tolls in the future. It would be expected that State TollCo would initially move to implement the network structure recommended by the Review.
- c. Establish a role for IPART to specifically provide oversight for network toll setting by State TollCo, as well as a more general inquiry power to consider toll industry pricing issues in more detail outside any specific price reset.
- d. Provide a mechanism to resolve expeditiously and fairly issues relating to the distribution of network revenues to individual toll road operators to maintain the current status quo in this regard.

Phase 2

Phase 2 involves continued periodic reviews and reset of tolls by State TollCo and IPART taking into account the experience of the first reset of the structure of tolls in Phase 1 and subsequent reviews. These reviews and resets would consider the appropriate structure as well as level of tolls.

Phase 3

Phase 3 of tolling reform might involve consideration of other ways to reduce the toll burden on motorists by, for example:

- a. Removing some roads from tolls if government had the financial capacity.
- b. Broadening the tolling base by incorporating motorways that are now part of the continuous network but remain untolled. Exemptions from the tolled network create distortions and complicate operation of the tolled network. Including them within the tolled network would be consistent with the efficiency, fairness, simplicity and transparency criteria used to evaluate existing tolls. This may be appropriate in the longer term particularly with the likelihood of broader road pricing reforms being introduced. However, as it would be contrary to existing government policy to impose tolls on currently untolled roads and also road pricing is not within our terms of reference, we make no recommendation on these particular matters.
- c. Amending the approach to PPP agreements to enhance competition. This may involve taking a stronger approach to designing contracts which are consistent with the promotion of competition and improving toll setting processes.

Government may also not wish to enter further PPP arrangements for the provision of tolled roads. However, if it does, it should look to:

1. amend the guidelines relating to these schemes to ensure government contributions cover benefits provided to non-users of the toll roads,
2. ensure there is competition between potential concessionaires in relation to tolls where this is feasible,
3. reflect amended pricing principles proposed by the Review,
4. not accept unsolicited bids to construct new roads or enhancements to existing roads before considering other options, including utilising pricing strategies for demand management on the existing road and the possibility of competitive bids,
5. avoid extensions to concession agreements that enable concessionaires to obtain excessive rates of return.

Declining distance-based tolls should form the basis of the proposed new network structure of tolls (to be implemented in step 1 of the reform process)

While a range of different approaches have been used to calculate tolls, there has been a growing use of distance-based tolls. Distance-based tolls, together with an access charge or flagfall have been applied on WestConnex, and distance tolls on the M7. Distance-based tolls are in line with the 2014 Principles for tolling, developed by the then government. Road pricing is also generally discussed in terms of distance-based pricing and while the adoption of road pricing seems some way off and can be clearly delineated from tolling, there are some advantages of trying to align the methodologies.

We recognise that distance-based tolling can be beneficial, however, it also disadvantages motorists who need to travel longer distances. In the case of both Westlink M7 and WestConnex, a cap was adopted to deal with this

issue. However, this had the negative effect of effectively charging no tolls for the distances beyond the cap level and therefore distorting travel decisions.

The Review also considered the possibility of determining network tolls on a distance basis but with the distance charges varying between designated zones. This approach was considered in detail by the 2022 Toll Road Pricing and Relief Reform Review. However, zones were considered to be arbitrary and meant that the tolls paid depended on where on the network trips were taken. A fairer approach would be to determine tolls on the same basis wherever trips originated from on the network.

The Review considers that declining distance-based charges (rather than a flat rate) overcomes the weaknesses of these alternative distance-based approaches and should form the basis for determining network tolls under our proposed new system. This means that the further a user travels on the network the lower the per-kilometre charge becomes. From an efficiency perspective, the higher initial kilometre charge could be seen as helping to cover fixed costs of the network and possibly providing some discouragement to inefficient short trips. The declining kilometre charges align with falling variable costs as distance increases. However, the major reason for preferring declining distance-based charges as the basis for network charges is the desire to reflect fairness in tolling. It assists those who are required to travel longer distances. It will help to deal with inequities which now exist across the network particularly concerning people in Western Sydney who lack adequate transport alternatives and have to pay more in tolls to travel to employment centres and other necessary activities.

The Review also supports the use of pricing strategies like peak/off-peak pricing and dynamic pricing where it is feasible. These strategies aim to influence traffic flows so that these can be maintained at reasonable levels. Prices may be reduced in some cases where roads are significantly under-utilised and increased in other circumstances such as the presence of persistent congestion. At present, the dominant characteristic appears to be the former rather than the latter. General reductions in tolls at this time would, significantly reduce toll revenues, due to inelastic demand. The growth in traffic induced by lower tolls would not be sufficient to offset the revenue impact of the lower tolls.

Reforms are also proposed which will affect tolls paid by specific user groups. A more detailed classification of vehicle types and modifications to vehicle multipliers will see reduced tolls for motorcycles, towed caravans and mid-sized heavy vehicles. We are not proposing an increase in the heavy vehicle multiplier at this time, though some have suggested this, and further consideration will be given to the issue before our Final Report is completed. We see a need to attract greater use of the toll roads by trucks for freight deliveries, including inter-city deliveries. We do not consider that freight operators should bear a disproportionate share of the costs associated with tunnels that provide broader community benefits.

Our price reform objectives

The Review modelled the effect of applying a declining distance-based charge in combination with infrastructure access charges across the network with a number of objectives in mind.

- First, we wished to develop an option that effectively raised a similar amount of revenue for toll road operators as in total they had received under the existing tolling arrangements. The aim was to move to a network system of tolls while maintaining so far as possible the expected revenue position of the concessionaires and publicly owned roads assuming the existing tolling arrangements were still in place. Adoption of this principle mitigates impacts of the change and the need for contractual dispute resolution.
- Second, we wished to avoid unduly large changes in toll revenues for individual trips. Inevitably, when implementing a change in the structure of tolls, especially in an unchanged total revenue envelope, there will be changes that increase some trip costs and reduce others. However, so far as possible, we wanted to smooth these changes by minimising their size.
- Third, we applied two-way tolling to the roads currently not having this in place. The circumstances which led to the introduction of one-way tolling, for example not having the availability of full electronic tolling or

the alternatives provided by a more extensive network, no longer apply. Further one-way tolling has been found to significantly distort traffic flows.

- Fourth, we wanted to ensure that proposed changes to tolling arrangements for motorcycles and heavy vehicles were taken into account as much as possible, acknowledging the uncertainty at this stage of the precise volumes of vehicle movements likely to be affected.
- Fifth, we examined bookend options of removing toll relief altogether, or of applying toll relief to reducing the level of tolls. In practice, it is recognised that a change in approach to toll relief may need to be phased in over time.

Overall, it was found that it was not possible to meet all these objectives in the short term by applying declining distance-based charges alone. This to a significant extent reflects the level of distortion built into existing tolls.

Accordingly, it was necessary to add a further component to the distance-related charge to achieve a set of network tolls which better satisfied our modelling objectives. This was done by applying a charge to specific parts of the network which incorporate more costly infrastructure, like ventilated tunnels and the Sydney Harbour Bridge. The infrastructure charges are fixed, in that they do not vary with distance, but are at variable amounts reflecting a range of factors, not just the cost of the infrastructure. These factors include the existing level of tolls - the aim being not to have substantial toll changes in the initial reform to network tolling. They also include the nature of trips undertaken by motorists particularly where they have to go through multiple tunnels. For example, trips on WestConnex often involve travelling through multiple tunnels. And finally, the need to develop a network-wide set of tolls which generated the same revenue envelope as under the status quo.

Initial assessment of recommended price reforms

Our initial assessment of the modelling suggests strong benefits from reform. Further refinement of the modelling and the cost benefit assessment is underway ahead of finalising recommendations in the Final Report.

The modelling to date has focused on three scenarios. These are a status quo scenario, which assumes that current conditions, trends, and policies are maintained into the future. In addition, we have developed two reform scenarios focusing on a new structure of tolls that includes a declining distance base charge with a fixed infrastructure charge. To understand the spectrum of policy options, the first of these, Network Tolling A, includes no subsidy, while the second, Network Tolling B, includes a subsidy that is used to lower toll prices for all motorists. The subsidy is based on an approximation of forecast government spending on toll relief in 2026. Additionally, both Network Tolling scenarios assume:

- two-way tolling on the Sydney Harbour Bridge, the Sydney Harbour Tunnel and the Eastern Distributor,
- a wider range of vehicle classes and multipliers than the status quo by adding new vehicle classes for motorcycles and mid-class heavy vehicles; the vehicle classes have been applied consistently network wide, including to the Sydney Harbour Bridge, the Sydney Harbour Tunnel which currently don't have different tolls for different vehicle classifications,
- discontinuation of the M5 South-West Cashback.

Chapter 9 provides details of additional assumptions that have shaped the modelling approach.

At this stage the report presents results for 2026 only for simplicity, as these illustrate trends that are also seen in later years. The Final Report will include more comprehensive documentation of modelling outcomes.

In terms of headline results, as Figure 1 shows, average toll prices in the Network Tolling scenarios are both lower than in the Status Quo scenarios.

Figure 1. Average toll price by scenario, 2026

Vehicle type	Status Quo	Network Tolling A (no subsidy)	Network Tolling B (with subsidy)
Class A	\$8.50	\$7.33	\$6.19
All vehicles	\$10.40	\$9.03	\$8.50

Source: Independent Toll Review

Figure 1 illustrates how the subsidy in Network Tolling B results in lower overall tolls.

A factor in the lower average tolls in the Network Tolling scenarios is that more trips in these scenarios involve paying a toll. This is largely due to the introduction of two-way tolling on the Sydney Harbour Bridge, the Sydney Harbour Tunnel and the Eastern Distributor. In short, there are more trips paying a toll, but the average toll price (per tolled trip) is lower. Another factor is the modelled expansion of vehicle classes on the Sydney Harbour Bridge and the Sydney Harbour Tunnel.

Figure 2 and Figure 3 provides a greater decomposition of the impacts of the Network Tolling. They detail the proportion of Class A trips (by trip length band) that involve the motorway network. They show where a price decrease would apply relative to the Status Quo, where there would be no change, and where the toll would be higher.

Figure 2. Class A, toll Price Difference, Network Tolling A compared to Status Quo, 2026

2026 Declining Distance A (no subsidy) vs Status Quo								
Trip Distance	\$3+ lower	\$1-3 lower	\$0-1 lower	No Change	\$0-1 higher	\$1-3 higher	\$3+ higher	Total
<10 km	2%	6%	5%	27%	9%	5%	11%	64%
10-25 km	2%	5%	3%	4%	4%	5%	3%	26%
>25 km	2%	2%	3%	0%	1%	2%	1%	11%
All trips	6%	13%	11%	30%	13%	12%	15%	100%

Source: Independent Toll Review

Figure 3. Class A, toll Price Difference, Network Tolling B compared to Status Quo, 2026

2026 Network Tolling B (with subsidy) vs Status Quo								
Trip Distance	\$3+ lower	\$1-3 lower	\$0-1 lower	No Change	\$0-1 higher	\$1-3 higher	\$3+ higher	Total
<10 km	5%	7%	7%	27%	7%	1%	10%	64%
10-25 km	6%	8%	3%	4%	2%	2%	2%	26%
>25 km	7%	2%	1%	0%	1%	0%	0%	11%
All trips	18%	16%	10%	30%	10%	3%	12%	100%

Source: Independent Toll Review

Figures 2 and 3 detail that most motorists are as well off, or better off, under the modelled structure of tolls: about 60 per cent in Network Tolling A and about 74 per cent in Network Tolling B.

Alongside changes in the toll outcomes for motorists, the Review has considered the implications for journey times, and traffic behaviour across the network for all motorists (not just motorists who use the toll road network).

Taking a geographic lens, our initial results illustrate greater use of toll roads to the west and north of Sydney, where we observe higher traffic volumes in the Network Tolling Scenarios, and correspondingly less traffic on arterial roads. Conversely, we observe lower traffic volumes on the toll road network around the Eastern Distributor, Sydney Harbour Bridge and Sydney Harbour Tunnel. The introduction of two-way tolling is a factor in this outcome. Additionally, there is a reduction of traffic volumes on the M5 South-West, for which the discontinuation of the M5 South-West Cashback is a factor.

The analysis indicates that those who start their journeys to the north and east of Sydney's CBD pay net higher tolls /and or have net longer travel times. Two-way tolling is a factor in this outcome. In the Network Tolling A scenario, motorists who start their journeys in the southwest also experience net higher tolls and/or have net longer travel times. The modelled assumption of discontinuation of the M5 South-West Cashback is a key factor causing this.

Based on the initial assessment of results from transport modelling, the declining distance-based and infrastructure charge basis of tolls better meets the Review's criteria of efficiency, fairness, simplicity, and transparency than other alternatives modelled, including one based on fixed distance-based charges and geographic zones. The selection of zones was considered somewhat arbitrary, although ultimately it did reflect some of the matters, like infrastructure differences, which are given more direct and explicit recognition in the preferred option. Importantly, the benefit of the declining distance toll is available to all users who travel longer distances, not just to those who travel in particular parts of the network, as was the case under the zoning option.

This initial reset of tolls is relatively modest in line with the conservative modelling assumptions which underlie it.

Our modelling covers an initial reset of tolls to introduce network tolling. We would expect that further resets of the structure of tolls could be made in following years to achieve further reform to tolls.

Why have we proposed that the new network tolls be set under legislation rather than under the individual concession agreements?

It is conceivable, but in practice we consider highly unlikely, that some reforms to tolling arrangements could be achieved through negotiations with individual toll road operators and associated investors and lenders. There are numerous counter parties to the concession agreements and many financiers whose agreement would be needed to effect substantial change to the tolling provisions of the concession agreements. Negotiations would be difficult and time consuming and would not be in line with the transparency objective of this review. Transurban, the dominant equity owner, would seek to play a major role in such negotiations. Transurban has indicated a willingness to consider a network approach to tolling but negotiated agreement with Transurban alone on network tolling involves the risk of further entrenching the dominant position of this company in the overall market and the perception of its influence over Government.

Competition laws prevent competitors from reaching agreements on matters which are likely to fix or maintain prices. We see this as being a real obstacle to achieving network tolling through negotiation and agreement.

In the past, it has been suggested that reforms to road tolling are not possible given the nature of the concession agreements. We do not accept this claim. We do accept the proposition that the State needs to act responsibly in achieving reforms in this area and that the reasonable expectations of toll road operators need to be protected and honoured. Our overriding focus, however, is the public interest and toll reform is necessary in the public interest.

An ambitious reform agenda requires government to lead the process. Legislation will enable Government to do this, specifying a new approach to toll setting which better reflects the public interest. It can establish a mechanism to ensure the reasonable expectations of toll road operators are honoured. It can introduce institutional changes to achieve on-going reform.

State TollCo will be the major vehicle for reform in the longer term

A central element of proposed toll reform is the establishment of a State-owned tolling entity. It is envisaged State TollCo will determine network tolls in the future with input into a transparent toll setting process from IPART. State TollCo will work closely with the concessionaires in this role.

State TollCo would become a retailer and we consider it could also take over the functions of the existing government retailer, E-Toll. State TollCo and other retailers will receive toll revenues and make payments to toll road operators based on agreed arrangements. An independent dispute resolution process will operate to resolve matters where agreement has not been able to be reached. In its retailer role it is expected that State TollCo would be at the forefront in initiating user service improvements covering information provision and a more efficient, effective and customer centred approach to the collection of overdue toll payments.

It will be important to put in place a more independent and effective industry external dispute resolution mechanism. The existing Tolling Customer Ombudsman (TCO) effectively acts as an internal dispute resolution body for most, but not all private concession holders in Australia. It does not deal with public operators. The TCO scheme does not have the acceptable governance and operating structure of other recognised industry ombudsman schemes in Australia.

The Review considers that the State TollCo could effectively encompass the role of an external dispute resolution body for the industry as a whole in New South Wales. Complaints not satisfactorily resolved by the TCO could be referred to State TollCo.

State TollCo would need to be established to operate within a clear budgetary framework determined by the Treasurer and be subject to any written directions or guidelines provided to it by the relevant Minister. It is anticipated that State TollCo will be established as an independent entity.

In addition to its toll price determination and retail functions, the Review can envisage State TollCo managing the concession contracts for private toll roads and possibly even having direct oversight and management of the operation of public toll roads. This would add to the strength of the State TollCo balance sheet and provide it with greater insights of the operation of the toll roads. State TollCo could help to ensure there is competitive tension between the State-owned toll roads and the privately owned toll roads. There would, however, need to be a clear separation between the wholesale and retail parts of State TollCo. The involvement of IPART in tolling decisions will help to ensure a level playing field between State-owned toll roads and privately owned toll roads is maintained.

The Review expects to undertake further detailed consideration of the specific design characteristics of State TollCo in the period leading up to our Final Report.

The time is right for major reform of road tolls

This is the first major independent review of tolls in New South Wales. It comes at a time when the State now has a fully developed network of toll roads and when the emphasis on private delivery of this major infrastructure is no longer seen as an imperative. We have no doubt however that new roads will continue to be built over time and that the private sector will continue to have an essential role in this.

The legacy of past decisions made within the context of PPP arrangements is what we now have to deal with. Eminent economist and commentator Professor John Quiggin has aptly described the problem as ‘unscrambling the toll road egg’.⁶ Past decisions have left an uncoordinated and inconsistent system of tolls, unsustainable long-term burden for users, under-utilised toll roads and continuing problems of congestion on other roads.

Action to deal with these problems will not be easy, but we have painted a realistic vision for the way forward. We recognise that toll roads are unique in a number of significant respects, which justifies the significant government intervention proposed.

Toll roads are regulated under PPP contracts which have significantly different features than most other infrastructure regulatory schemes where there is an independent regulator involved, regular reviews of prices, regard for efficiency improvements and importantly greater public transparency and involvement is associated with them.

Moreover, the PPPs affecting toll roads have unique features and have evolved over time in the light of experience. They are one type of PPP which includes private financing, have been developed in particular ways, allocate risks in particular ways, and affect prices in particular ways.

Our public interest assessment is that these arrangements now need to be reformed and that unique measures need to be taken to do this. In particular, in order to establish a proper network system of tolls, it is necessary to replace the existing contractual provisions relating to the setting of tolls with new provisions. These particularly relate to the proposed new institutional arrangements relating to State TollCo and IPART.

In undertaking reforms, the Government should respect the contracts it has with concessionaires and the reasonable expectations of concessionaires. In our view, concessionaires should be constructively engaged in the reform process.

⁶ Quiggin, J. & Wang, I. (2019). Unscrambling the toll road egg. *Economic Analysis and Policy*, 61.

Table of Findings and Recommendations

Draft Findings:		Page. No.
Process for setting tolls	Finding 1: The process for setting tolls has been flawed.	<u>52</u>
Public Private Partnerships	Finding 2: The important details of PPP arrangements relating to toll setting are not disclosed to the public, reducing the information available to assist public understanding.	<u>58</u>
	Finding 3: Toll Road users bear a disproportionately high proportion of the cost of toll roads.	<u>61</u>
Structure of tolls	Finding 4: There is no overall system of tolls.	<u>63</u>
	Finding 5: The lack of a unified pricing system creates complexity, inefficiency, inequities and unfairness.	<u>64</u>
	Finding 6: Tolls are too rigid and are locked-in for decades without options for review.	<u>66</u>
	Finding 7: On most toll roads, time-of-day pricing is not used to improve traffic management.	<u>70</u>
	Finding 8: The financial impact of tolls is greatest in Western Sydney.	<u>71</u>
Level of tolls	Finding 9: The level of tolls appears to be higher than necessary and desirable.	<u>75</u>
Competition	Finding 10: Transurban has a dominant position in the current provision of toll roads in Sydney.	<u>84</u>
	Finding 11: Transurban is dominant in the NSW market for acquisition of toll road concession contracts.	<u>85</u>
	Finding 12: The significant position of Transurban in the toll retailer market could adversely affect competition for tolling concessions.	<u>87</u>
Toll transparency	Finding 13: Current toll pricing information fails to adequately enable, inform, and educate motorists thus reducing user empowerment and efficient decision making.	<u>89</u>

Draft Findings:		Page. No.
Toll relief schemes	Finding 14: Toll reform is preferable to toll relief. The current toll relief schemes are inadequately targeted and under-utilised, in part due to overly complex administration. Toll relief is not financially sustainable given the existing pattern of toll escalation and limitations on the availability of government resources to fund relief.	<u>93</u>
	Finding 15: Concessionaires are an unintended beneficiary of the current approach to toll relief. Increased traffic and patronage of toll roads, through induced demand created by toll relief, directly benefits operators by increasing their revenues. Concessionaires have to date not been willing to return this revenue to the public purse, other than through the contractually agreed revenue share provisions.	<u>96</u>

Recommendations:		Page. No.
Tolling principles	Recommendation 1: The NSW Government should adopt the Proposed New Tolling Principles.	<u>99</u>
The opportunity for reform: moving to network tolling	Recommendation 2: The NSW Government should adopt network tolling. Implementation will require detailed planning, investment in infrastructure and close monitoring of impacts.	<u>115</u>
	Recommendation 3: The NSW Government should adopt declining distance-based pricing as the foundation of network tolling. This would lead to a simpler, more consistent and coherent system of tolls which aligns more closely to the criteria the Review has been asked to consider, namely efficiency, fairness, simplicity and transparency.	<u>115</u>
	Recommendation 4: The NSW Government should consider the role of toll relief in supporting the transition to network tolling. Significant changes in toll relief may need to be phased over time.	<u>116</u>
	Recommendation 5: If NSW Government chooses to extend or phase out toll relief, it should be with consideration of the following principles: <ul style="list-style-type: none"> • Toll relief should be targeted to those that are most in need to the extent practicable through means-testing. • Toll relief should take into account the availability of alternative transport options, in particular alternative non-tolled roads and public transport. 	<u>117</u>

Recommendations:	Page. No.
	<ul style="list-style-type: none"> Toll relief should avoid distorting price signals (e.g. it should not make trips on the tolled network free). <p>Toll relief should apply to the entire toll road network.</p>
Future opportunities: using pricing to influence demand	<p>Recommendation 6: Flexible pricing techniques including peak/off-peak pricing, and dynamic pricing should be available as part of a network tolling system.</p>
	<p>Recommendation 7: The NSW Government should consider an initial focus on freight operators for peak and off-peak pricing.</p>
Updating vehicle classifications and charges	<p>Recommendation 8: The NSW Government should further explore refining tolling classes in New South Wales, adopting a uniform definition for Class A vehicles, and a fairer classification for towed recreational vehicles and motorcycles.</p>
	<p>Recommendation 9: The NSW Government should continue to apply toll price multipliers to vehicles exceeding Class A vehicle dimensions.</p>
	<p>Recommendation 10: The NSW Government should investigate a new classification for mid-class heavy vehicles to incentivise these vehicles to use toll roads.</p>
	<p>Recommendation 11: Vehicle multipliers should be applied consistently across the toll road network.</p>
	<p>Recommendation 12: The NSW Government should simplify the arrangements allowing public bus services to be exempt from tolls to ensure consistency across the network.</p>
Expanding toll coverage to improve outcomes for motorists	<p>Recommendation 13: The Review recommends consistent two-way tolling as part of the network tolling system. Practical issues with the implementation are still being investigated.</p>
	<p>Recommendation 14: The NSW Government should investigate the scope of the tolled network in Sydney to achieve greater consistency, efficiency, and fairness.</p>
Initial assessment of price reforms	<p>Recommendation 15: The NSW Government note the initial modelling conducted by the Review, which will continue to be refined prior to the introduction of any network tolling.</p>
State TollCo	<p>Recommendation 16: NSW Government should establish a government-owned special purpose entity ('State TollCo') with responsibility for improving outcomes and transparency for motorists to strengthen governance and accountability over NSW toll roads.</p> <p>State TollCo will drive and implement toll reforms:</p>

Recommendations:	Page. No.
	<p>a. State TollCo will set network toll prices payable by motorists, with periodic adjustments.</p> <p>b. State TollCo will improve competition outcomes.</p> <p>c. State TollCo will absorb current Transport for NSW toll collection functions (E-Toll retail business and issuing toll notices).</p> <p>d. State TollCo will have an ongoing focus on constantly innovating to improve the toll road experience for motorists in New South Wales.</p> <p>Recommendation 17: The NSW Government should consider options for the ownership and contract management of privately operated toll roads. <u>155</u></p> <p>Recommendation 18: The NSW Government should consider options for administrative arrangements concerning public toll roads. <u>155</u></p>
Independent oversight of toll setting	Recommendation 19: Tolls set by State TollCo should be subject to oversight by IPART. IPART’s role may involve making its own determinations, providing recommendations to State TollCo and investigating specific toll pricing issues. <u>158</u>
Setting tolls - legislative package	<p>Recommendation 20: In addition to including establishing State TollCo and IPART roles, the legislative package should also:</p> <p>a. Enable network toll prices to be set independently of contractual frameworks.</p> <p>b. Provide for a revenue adjustment mechanism to enable appropriate sharing of network toll revenues between toll road operators.</p> <p>c. Provide for an independent toll issue resolution mechanism.</p> <p>d. Modernise the legislative framework for NSW toll roads. <u>161</u></p>
Competition measures	<p>Recommendation 21: The NSW Government should ensure future procurement processes have greater regard for desirability of maintaining a competitive industry structure. <u>166</u></p> <p>Recommendation 22: The NSW Government should review existing concession agreements with the aim of enhancing competition. <u>167</u></p> <p>Recommendation 23: The NSW Government should place a greater focus on long term implications for control and <u>167</u></p>

Recommendations:	Page. No.	
	competition rather than short term benefits in the approach to future procurement of toll roads.	
	Recommendation 24: As with other aspects of toll setting, there should be clear public transparency in relation to determining the length of concession agreements. The concession period should be based on clear public interest considerations, including maintaining competitive industry structures.	<u>168</u>
	Recommendation 25: The NSW Government should favour competitive tender processes over unsolicited proposals for new toll road concessions.	<u>170</u>
	Recommendation 26: The NSW Government should regulate roaming fees to promote competition for future toll road PPPs.	<u>170</u>
	<p>Recommendation 27: The NSW Government should disclose full details regarding the setting of tolls. This includes publication in a timely matter of:</p> <ul style="list-style-type: none"> a. surveys and analysis concerning willingness to pay, value of travel time savings, and toll saturation b. detailed traffic forecasts for proposed network toll prices c. actual, forecast and benchmark concessionaire costs d. the expected rate of return for each concessionaire 	<u>171</u>
Transparency for motorists	Recommendation 28: Improve the retail experience for motorists by providing personalised insights into past and projected toll spend.	<u>178</u>
	Recommendation 29: The NSW Government should simplify and modernise the toll compliance process.	<u>178</u>
	Recommendation 30: The NSW Government should improve decision making and trip planning information available to motorists online, on the road and through Service NSW.	<u>178</u>
Enforcement and debt recovery	Recommendation 31: The NSW Government should review legislation and policies around the issuing of penalty notices for toll non-payment.	<u>179</u>
Complaints	Recommendation 32: An independent, external dispute resolution function for the toll road industry should be established within State TollCo.	<u>180</u>

Glossary

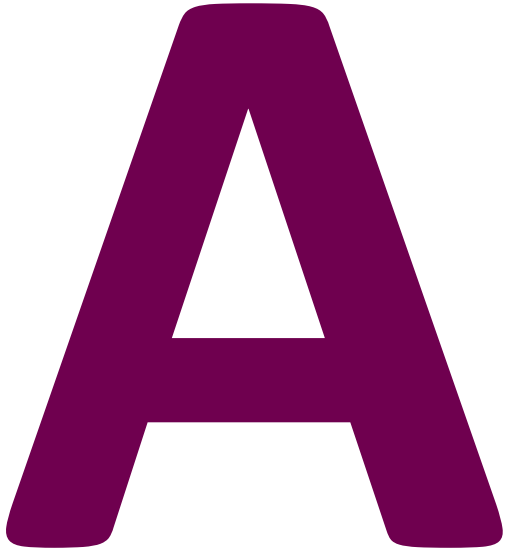
Term	Description
2014 Principles	A broad set of principles approved by the NSW Government in 2014 to guide future tolling decisions on Sydney's motorway network.
ACCC	Australian Competition and Consumer Commission.
AWE	Average weekly earnings.
Availability PPP	A PPP model where the private sector is responsible for delivering specified assets and services (including financing of those services) through an outcome-based contract. The Government retains demand risk and the primary form of revenue for the private sector is a regular periodic service payment for making the asset available and providing services to the required performance standard i.e. based on key performance indicators.
BCFM	Base Case Financial Model. A financial model referred to in a concession contract containing forecasts of a concessionaire's revenue and expenditure over the term of a concession.
Class A	A tolling class which includes cars and motorcycles.
Class B	A tolling class for vehicles which exceed the Class A dimensions.
Concessionaire	For the purposes of this interim report, the holder of a toll road concession. Concessionaires are typically granted the right to finance, build, operate, toll and maintain a motorway for a set term, before returning the motorway back to Transport for NSW in the required condition.
CPI	Consumer Price Index.
Declining distance	For the purposes of this interim report, a toll calculation method that involves a variable charge based on travel distance on toll roads. This variable charge is declining, that is, motorists pay a lower rate on a per kilometre basis the longer they travel on tolled motorways. Declining distance is a specific type of distance-based toll.
Distance-based toll	A toll calculation method based on the distance travelled on a toll road or network of toll roads.
Dynamic pricing	For the purposes of this interim report, real-time adjustments to a toll price to maintain traffic flow.
Economic PPP	A PPP model where the primary revenue stream is in the form of third-party user charges and not service payments from Government. The financial impact to Government is significantly less for an Economic PPP than for an Availability PPP.

Term	Description
Environmental Impact Statement	For the purposes of this interim report, a report prepared by a proponent for the development of a new toll road (or toll related infrastructure or activity) and exhibited for public consultation under the <i>Environment Planning and Assessment Act 1979</i> (NSW).
Escalation	For the purposes of this interim report, a regular (quarterly or annual) increase in the toll price provided for under a concession contract.
Flagfall	A fixed fee component of a toll price. Also referred to as an ‘access charge’.
Fixed toll	A toll price which is constant and not dependent on other variables, e.g. distance travelled or time of day.
GIPA Act	<i>Government Information (Public Access) Act 2009</i> (NSW).
GSF Act	<i>Government Sector Finance Act 2018</i> (NSW).
IPART	Independent Pricing and Regulatory Tribunal.
IPART Act	<i>Independent Pricing and Regulatory Tribunal Act 1992</i> (NSW).
Independent Reviewers	Professor Allan Fels AO and Dr David Cousins AM appointed by the NSW Government in April 2023 to identify reform options for the NSW tolling network.
MCHV	Mid-class heavy vehicle. A potential new tolling class considered by this Review.
Means-tested	Where eligibility for financial assistance is based on income/asset levels.
Motorway	A distinct type of road that has a pure mobility function with minimal or no access to adjoining land. Motorways provide for major regional and inter-regional traffic movement.
Multiplier	A method for calculating a toll price for one tolling class based on the toll price for another tolling class.
Network tolling	A toll pricing structure that is consistent across the toll road network.
Peak/Off-Peak Pricing	A form of variable toll pricing where the price differs based on the time of day.
Proposed New Tolling Principles	The Independent Reviewers’ proposed tolling principles to guide toll setting in future.
PTAL	Public Transport Accessibility Level. A measure a location’s connectivity by public transport. Based on walking distance to nearest stations/stops, waiting times at nearest stations/stops, number of services passing through nearest stations/stops, whether there are major rail stations nearby.

Term	Description
PPP	Public Private Partnership. The creation of an infrastructure asset through private sector financing and private ownership for a concession period (usually long term). The Government may contribute to the project by providing land or capital works, through risk sharing, revenue diversion or purchase of the agreed services.
Review	The independent review led by the Independent Reviewers to identify reform options to overhaul the toll network.
RMS	Roads and Maritime Services. RMS merged with Transport for NSW on 1 December 2019.
Roads Act	<i>Roads Act 1993 (NSW).</i>
Roads Regulation	Roads Regulation 2018 (NSW).
Roaming fee	A fee paid by toll road operators to toll retailers for collecting tolls from motorists.
State Owned Corporation	A Government entity with a governance structure mirroring as far as possible that of a publicly listed company. NSW State Owned Corporations are listed at Schedule 5 of the <i>State Owned Corporations Act 1989 (NSW)</i> .
Status quo	A strategic traffic modelling scenario which retains the current tolling regimes pricing structures, escalation rates and tolling classes. This scenario is used as a comparator for the analysis of alternative options.
STP	Sydney Transport Partners. A Transurban-led consortium which owns 100 per cent of the WestConnex concessionaires.
TAA	<i>Transport Administration Act 1988 (NSW).</i>
TCO	Tolling Customer Ombudsman.
Transport for NSW	Transport for New South Wales.
Toll	A charge imposed for traffic using a toll road.
Toll relief	A government policy to reduce the financial impact of toll prices to motorists. Most toll relief schemes have been provided as a rebate.
Toll retailer	A service provider which issues motorists with an account to enable them to pay their tolls. There are currently two toll retailers in NSW, Linkt (owned by Transurban) and E-Toll (owned by Transport for NSW). The Roads Regulation refers to toll retailers as 'toll service providers'.

Term	Description
Toll road	The Sydney Harbour Bridge and tollways established by Ministerial order published in the Government Gazette.
Toll road network	A collective description for the toll roads in Sydney. They are not a network in a conventional sense as they are commonly separated by sections of public (untolled) roads.
Network tolling	Adopting a common pricing structure across the toll road network. This pricing structure would be payable by all toll motorists, regardless of which toll roads they drive on.
Toll Road Operator	Operators of toll roads whether private or public. The toll road operators in NSW are the concessionaires and Transport for NSW. Referred to as 'toll operators' in the Roads Act and Roads Regulation.
Toll Road Pricing and Relief Reform Review	A review which commenced in December 2021, under the previous Coalition government to consider longer term tolling reform.
Treasury	Refers to NSW Treasury.
USP	<p>Unsolicited proposal.</p> <p>An Unsolicited Proposal is an approach to Government from a Proponent with a proposal to deal directly with the Government over a commercial proposition, where the Government has not requested the proposal. This may include proposals to build and/or finance infrastructure, provide goods or services, or undertake a major commercial transaction.</p>
VTTS	<p>Value of travel time savings.</p> <p>The benefits provided by reductions in the amount of time spent on travel⁷.</p>

⁷ Victoria Transport Policy Institute. (2023). Transportation Cost and Benefit Analysis II - Travel Time Costs. <https://www.vtpi.org/tca/tca0502.pdf>.



A

Introduction and background

1 About this review

The NSW Government is conducting an independent review of toll roads

The NSW Government has established an Independent Toll Review (also referred to as the ‘Toll Review’ and ‘Review’) to identify reform options to overhaul the toll network. This Interim Report does not represent approved policy directions of the NSW Government.

The Premier, The Hon. Chris Minns MP; the Treasurer, The Hon. Daniel Mookhey MLC; and the Minister for Roads, The Hon. John Graham MLC announced the Review on 5 April 2023.⁸ They appointed Professor Allan Fels AO (‘Professor Fels’) to lead the Review as Chair and Dr David Cousins AM (‘Dr Cousins’) as Deputy Chair.

Professor Fels and Dr Cousins are being supported by NSW Treasury (‘Treasury’) and Transport for NSW. The views expressed in the report are those of the Chair and Deputy Chair.

Sydney has more toll roads than any other city in Australia and is one of the most tolled cities in the world⁹, with the Minns Government describing the current situation as ‘toll mania’.¹⁰

This is the first independent review to have looked comprehensively at Sydney’s tolls. Numerous other inquiries have considered aspects of tolling and toll road concessions, but none have had the opportunity to examine in detail tolling in the context of the well-established network now in place. Figure 1.1 below provides a timeline of relevant past reviews in the context of the development of the network and Appendix A provides a summary of recommendations from previous reviews¹¹.

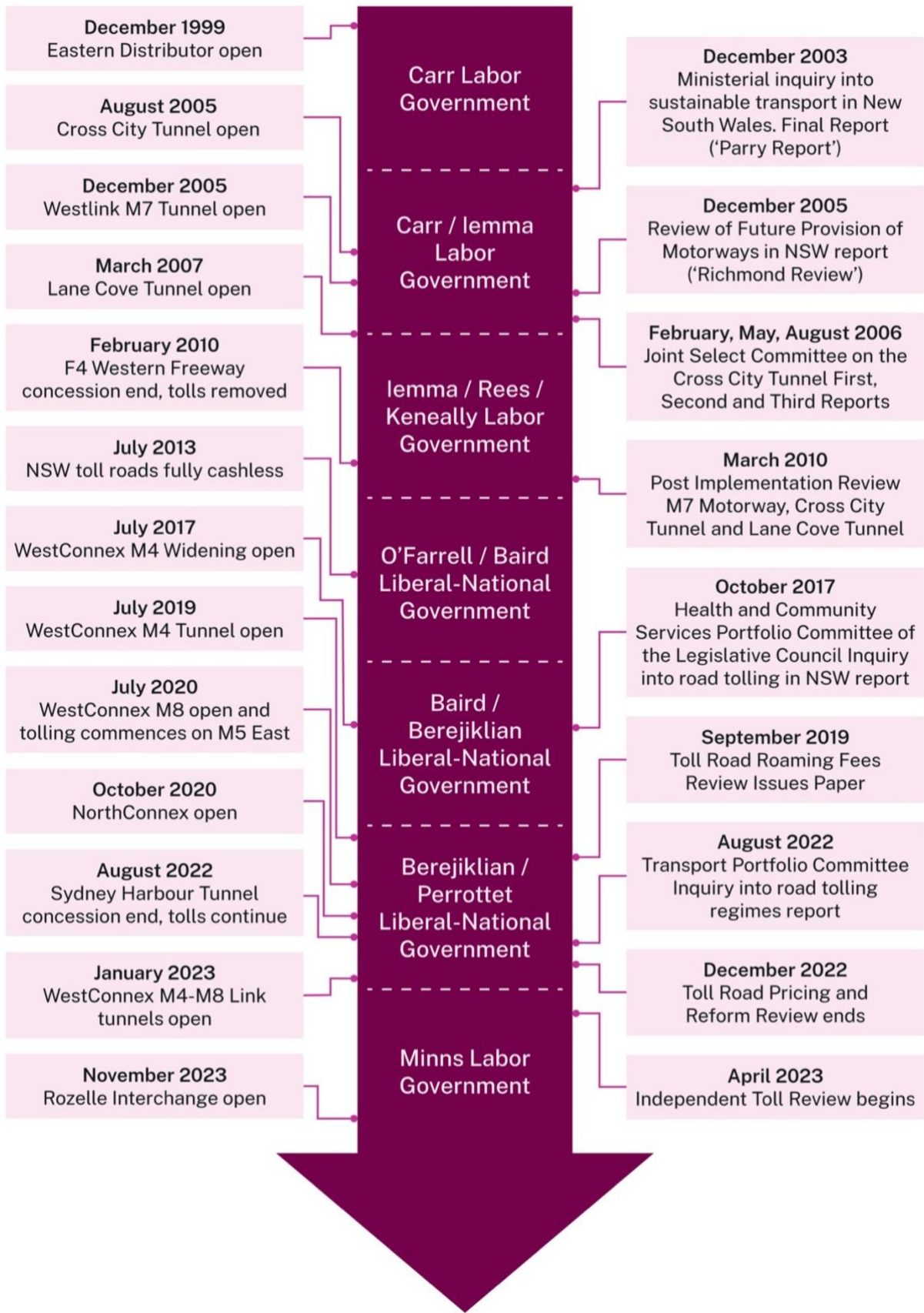
⁸ Premier, Treasurer, & Minister for Roads. (2023, April 5). Professor Fels starts work on Toll Review. NSW Government. <https://www.nsw.gov.au/media-releases/work-to-start-on-toll-review>.

⁹ Watson, T. (2019, March 11). New road pricing system needed after years of political neglect. The University of Sydney. <https://www.sydney.edu.au/news-opinion/news/2019/03/11/new-road-pricing-system-needed-after-years-of-political-neglect.html>.

¹⁰ Minister for Roads (2023, December 8). \$60 weekly toll cap to provide cost of living relief to 720,000 motorists. NSW Government. <https://www.nsw.gov.au/media-releases/toll-cap-cost-of-living-relief>.

¹¹ The terms of reference of the Parry Review were broader than toll roads and covered the whole NSW transport system.

Figure 1.1: Significant toll road reviews and inquiries since the year 2000



Source: Independent Toll Review

Sydney's toll roads have mainly been developed through Public Private Partnerships (PPPs) under which Governments have entered into agreements with private sector entities to build and operate motorways and recover their costs and a return on investment through toll revenue. Figure 1.1 shows that both sides of Government have employed the toll road PPP model to expand the motorway network. While the structuring of these PPP arrangements and procurement approach has evolved over time, the core toll road PPP model has essentially remained the same. Despite all these previous reviews, the key financial details underpinning toll road PPP contracts have not been published.

This Review has a strong mandate to shine a light on the tolling system and if necessary to propose substantial reforms for improvement.

The Review is examining the basis for setting motorway tolls and the impact of toll relief measures

The following Terms of Reference for the Review were publicly released on 11 May 2023.

The Review will examine the basis for setting motorway tolls in Sydney and the impact of toll relief measures.

Specifically, the Review will consider the appropriate structure and level of tolls for the future having regard to their efficiency, fairness, simplicity and transparency, the historical concession agreements with providers, and the interface with all modes of transport.

It will take into account the extent to which tolls should reflect the capital and operating costs of road provision, the impact different users have on road sustainability, and the use of roads throughout the day.

Toll relief measures help to ensure the affordability of tolls for motorists. The Review will consider the appropriate targeting of relief, fairness for the whole community in funding relief, and how to ensure the community rather than toll road owners benefit from toll relief measures.

Tolls need to be readily understandable, simple to pay by motorists and administratively efficient to collect.

The Review will consider the scope for competition and regulation to influence road tolls and the efficiency of service performance by providers.

The Review has considered information from a variety of sources

In developing the Interim Report, the Review has incorporated input from various sources, including:

- feedback and submissions from the public and other stakeholders in response to a Discussion Paper
- evidence provided at three public hearings
- market research to understand the experiences of motorists on toll roads
- subject matter expertise provided by the NSW Government
- strategic traffic modelling to understand the implications of the status quo and alternatives
- a review of competition and regulatory aspects of toll road concessions
- a review of opportunities to improve the transparency of toll pricing.

The Review will release its final report for government consideration in 2024

Three documents have been published since the Review commenced in April 2023 (see Figure 1.2).

The Review aims to publish its Final Report in Q3 2024.

Figure 1.2: What we have done so far

Three key documents were released in 2023:

1. A Summary of work completed prior to election of the Minns Labor Government was released by the Minns Government in June 2023 to summarise 2022's Toll Road Pricing and Relief Reform Review, the previous tolling review.
2. A Discussion Paper providing background on motorways and the use of tolls in New South Wales and on issues being considered by the Review was released in June 2023. It also poses questions relating to the terms of reference to be used as a guide by interested people and organisations as to the sort of matters on which feedback would be welcomed.
3. A Public Consultation Summary Report was released in August 2023. This report provides an overview of the Review's public consultation process, which involved a Have Your Say portal that received more than 1,100 submissions between 14 June and 28 July 2023 and three public hearings for members of the public, businesses, and industry stakeholders between 11 and 13 July 2023 in the Sydney CBD, Parramatta, and Penrith. The Review summarised what it heard from industry stakeholders and the public into ten key themes found in the Public Consultation Summary Report.¹²

Source: Independent Toll Review

¹² Independent Toll Review. (2023, August). Public Consultation Summary Report. https://www.treasury.nsw.gov.au/sites/default/files/2023-08/202308_toll-review-public-consultation-summary-report.pdf.

Next Steps

The next phase of the Review will include:

1. detailed financial, legal and commercial analysis regarding the proposed recommendations
2. further strategic traffic modelling of the proposed network tolling regime
3. assessment of the costs and benefits of the recommended reforms
4. targeted consultation with key stakeholder groups and members of the public.

2 The current tolling landscape

Toll roads and the NSW motorway network

Over the last 30 years, the construction of toll roads has enabled the development of a world-class motorway network in Sydney. A motorway is a distinct type of road that limits use to vehicles, providing regional and inter-regional traffic movement in a safe and efficient manner. Motorways may or may not be delivered as toll roads, as illustrated in Figure 2.1 below.

The toll roads provide much needed capacity and connectivity through Greater Sydney, creating premium transport routes facilitating the rapid movement of people and freight. Arterial roads and public transport are considered to provide complementary and more affordable options for less time-sensitive travellers.

The primary beneficiaries of a new motorway are its users. However, there is also a broader category of benefits which flow to the community including reduced congestion on local roads improving local access, amenity, and safety, as well as general environmental benefits via improvements in air quality.

Toll roads serve as connectors, minimising travel times and congestion through strategic positioning and seamless integration with major traffic flows, and connect communities to schools, workplaces, and hospitals. Their reliability and commitment to user convenience, exemplified by electronic toll collection and various route choices, reinforce their significance as dynamic components of the transportation system. Beyond providing expedited travel for commuters, toll motorways play a pivotal role in freight movement, supporting the swift and reliable transportation of goods. As significant infrastructure investments, these motorways contribute not only to the maintenance of high-quality road networks but also demonstrate commitment to environmental considerations. In essence, toll roads enhance the overall transport experience in New South Wales, promoting commuter choice, ensuring convenient access, and actively contributing to the state's economic wellbeing, while enhancing urban liveability, improving access to remote locations, promoting road safety, and supporting alternative transportation modes for a more efficient integrated transport network.

Toll roads and motorways in general, stand as enduring assets, extending beyond concession periods. Their durability or high relocation costs, especially for extensive projects, underscores their integral role in shaping the urban landscape. Government intervention, exemplified in toll road oversight and strategic positioning, navigates complexities from environmental considerations to community needs. Recognising motorways as long-term assets emphasises government involvement as crucial for shaping economic development and societal wellbeing. Federal government participation, as seen through Infrastructure Australia, further reinforces collaborative efforts for planning, developing, and maintaining as critical in the state's transportation infrastructure.

Motorways are positioned at the forefront of transformative changes in transportation, demanding a forward-thinking approach from governments. Emerging technologies like Connected and Autonomous Vehicles and electric vehicles necessitate flexible planning to ensure motorways adapt seamlessly. The challenges posed by pricing models, especially with the rise of electric vehicles, highlight the need for dynamic regulatory frameworks.

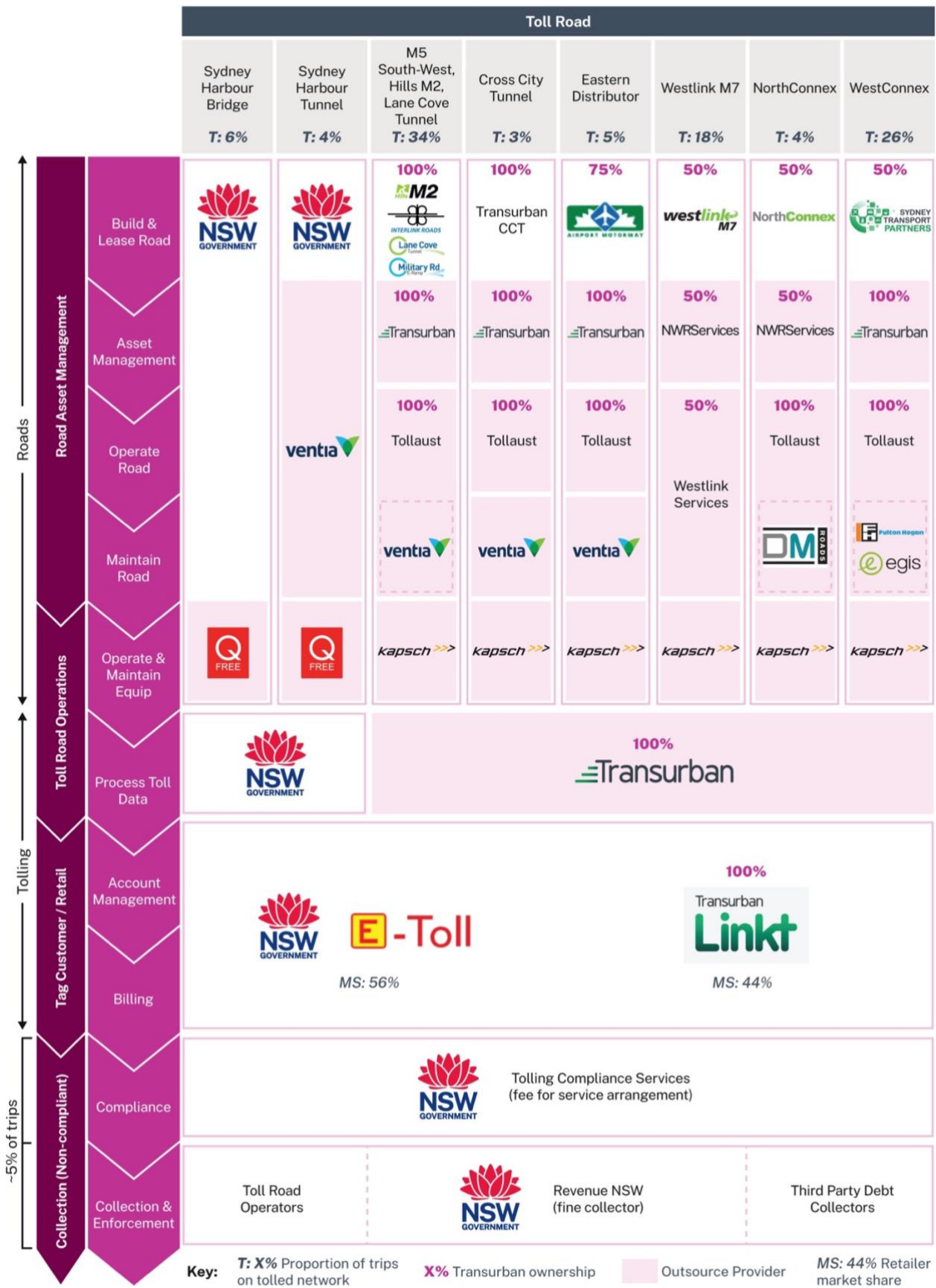
Figure 2.2 provides an overview of the concession and contracting arrangements which enable the provision of toll roads in New South Wales and collection of tolls.

Aside from the Sydney Harbour Bridge and Sydney Harbour Tunnel (which are owned by the NSW Government), Transurban has an ownership interest in every private toll road operator in New South Wales. Transurban and its subsidiary Tollaust also provide asset management, operations, toll data processing and toll collection services to concessionaires.

The M5 South-West, Hills M2, and Lane Cove Tunnel account for 34 per cent of trips on the network, WestConnex is next at 26 per cent, Westlink M7 has 18 per cent, Sydney Harbour Bridge 6 per cent, and all others individually account for 5 per cent or less (see Figure 2.2).

With respect to the toll retailer market, there are two providers, the NSW Government owned E-Toll (56 per cent of the market) and the Transurban owned Linkt (44 per cent of the market) The NSW Government manages tolling compliance services on behalf of all toll road operators (see Figure 2.2).

Figure 2.2: Overview of toll road operators and service providers



Source: Independent Toll Review

How are tolls currently calculated?

Sydney's toll road network comprises 10 private concessions (three of which are under the WestConnex banner) and two public toll roads. The Public Private Partnership (PPP) agreements set the maximum toll the concessionaires can charge¹⁴. All concessionaires charge the maximum toll provided by the contract. However, there have been instances in the past where the M4 Widening, Cross City Tunnel and Lane Cove Tunnel have had reduced or zero toll periods.

The tolling schedule, including base tolls and escalation rates over time, are included in the concession agreement and applies over the concession term. There is currently no specific mechanism in the PPP agreements to periodically review the appropriateness of the tolls. There have been some changes to toll schedules negotiated as part of widening and upgrade projects. Concessionaires could submit a proposal to amend the PPP agreement if they wanted to change tolls, which would need to be considered by Government.

Figure 2.3. Current toll prices (as at January 2024)

Toll road/s	Direction Charged/ Tolling Method	Class A ¹⁵ Toll	Class B Toll ¹⁶	Class B Multiplier	Escalation rate
Sydney Harbour Bridge	Southbound/ time of day	\$2.67 during weekdays from 7pm to 6.30am and weekends from 8pm to 8am		1x	Determined by Transport for NSW (Roads Act s215 requires Transport for NSW to consider CPI when setting tolls for Sydney Harbour Bridge.)
Sydney Harbour Tunnel		\$3.20 during weekdays off-peak and weekends from 8am to 8pm \$4.27 during weekdays peak time ¹⁷			
WestConnex (M4, M5 East, M8, M4-M8 Link, Rozelle Interchange)	Two-way/ flagfall plus distance based	\$1.67 flagfall, \$0.62/km \$11.78 cap	\$5.00 flagfall, \$1.85/km \$35.33 cap	3x	Until 31 December 2040: Greater of CPI and 4% per annum From 1 January 2041: CPI per annum
Cross City Tunnel	Two-way/ fixed	Main Tunnel-\$6.85 Sir John Young Crescent - \$3.23	Main Tunnel - \$13.69 Sir John Young Crescent - \$6.46	2x	CPI per quarter

¹⁴ For NorthConnex, discounts which apply at certain times of day only would require Transport for NSW agreement.

¹⁵ For Eastern Distributor and M5 South-West: A vehicle that is 12.5 metres or less in length and either a 3-axle vehicle under 2.0 metres, or a two-axle vehicle under 2.8 metres in height. For Hills M2, Lane Cove Tunnel, Cross City Tunnel, M5 East, NorthConnex, Westlink M7, WestConnex: A vehicle that is 2.8 metres or less in height and 12.5 metres or less in length.

¹⁶ Scheduled bus passenger services are toll free on all toll roads except for the Hills M2, Sydney Harbour Bridge and Sydney Harbour Tunnel.

¹⁷ Frequent motorcycle customers with an E-Rider account are able to access a discount.

Toll road/s	Direction Charged/ Tolling Method	Class A ¹⁵ Toll	Class B Toll ¹⁶	Class B Multiplier	Escalation rate
Eastern Distributor	Northbound/ fixed	\$9.38	\$18.76	2x	Greater of (37.5% x CPI + 62.5% x AWE) and 1% per quarter
Hills M2	Two-way/ fixed	North Ryde - \$9.56 Pennant Hills Rd - \$4.79 Windsor Rd - \$3.39 Lane Cove Rd - \$2.83 Herring and Christie Rds - \$4.77 M2- NCX - \$4.79	North Ryde - \$28.68 Pennant Hills Rd - \$14.34 Windsor Rd - \$10.15 Lane Cove Rd - \$8.48 Herring and Christie Rds - \$14.33 M2- NCX - \$14.34	3x	Greater of CPI and 1% per quarter
Lane Cove Tunnel	Two-way/ fixed	Main Tunnel - \$3.97 Military Road E - Ramp - \$1.99	Main Tunnel - \$13.43 Military Road E - Ramp - \$6.72	3.4x	For Class A vehicles: Greater of CPI or 0% per quarter For Class B vehicles: Greater of CPI or 1% per quarter
NorthConex	Two-way/ fixed	\$9.56	\$28.68	3x	Greater of CPI and 1% per quarter
Westlink M7	Two-way / Distance based	\$0.4853/km Capped at \$9.71	\$1.4559/km Capped at \$29.13	3x	CPI per quarter
M5 South-West	Two-way/ fixed	\$5.62	\$16.85	3x	CPI per quarter

Source: Independent Toll Review

Despite the recommendation from the December 2003 Parry Report to ‘take steps to facilitate the introduction of [electronic road pricing], such as introducing two-way tolling and harmonising tolls across existing and new tolled arterials’. The Sydney Harbour Bridge, Sydney Harbour Tunnel and Eastern Distributor are tolled in one direction only.

One-way tolling on these roads pre-dates the introduction of full electronic tolling in New South Wales which was achieved in July 2013 (see Figure 1.1). Tolls were imposed in one direction to avoid the congestion caused by making all vehicles stop or slow down in both directions. It also reduced the number of staff required to operate

toll booths. Tolls apply in the citybound direction on these three roads. Motorists who use the Eastern Distributor in conjunction with either the Sydney Harbour Bridge or Sydney Harbour Tunnel pay one toll in each direction.

As a result of one-way tolling, traffic flows are not balanced in each direction on the Sydney Harbour Bridge, Sydney Harbour Tunnel and Eastern Distributor. Traffic volumes on these three roads are higher in the untolled direction.

Toll price changes for the Sydney Harbour Bridge and Sydney Harbour Tunnel have occurred infrequently compared to the other toll roads which escalate annually or quarterly. In August 1992 the Sydney Harbour Bridge toll increased to \$2 when the Sydney Harbour Tunnel opened. Since then, there have been just three price changes - occurring in March 2004, January 2009 and October 2023.

In the last financial year, toll revenues on the private toll roads were \$2.345 billion (see Figure 2.4). Motorists incur the initial toll expense but can claim from a number of toll relief schemes (refer to Appendix E).

Five toll relief schemes currently apply to trips on Sydney toll roads. The longest-standing toll relief scheme is the M5 South-West Cashback Scheme. Under the M5 South-West Cashback Scheme, NSW residents can claim back the cost of tolls paid (except for the GST) while using a vehicle registered in New South Wales for private, pensioner or charitable use on the M5 South-West motorway. The M5 South-West Cashback Scheme commenced on 1 January 1997.

Figure 2.4. Concessionaires and revenue

Toll road/s	Concessionaire	Concessionaire ownership	Concession end	Financial year 2022-23 revenue (\$ million)
Sydney Harbour Bridge	N/A - publicly operated toll roads			107
Sydney Harbour Tunnel				
WestConnex (M4, M5 East, M8, M4-M8 Link, Rozelle Interchange)	WCX M4 AT Pty Ltd, WCX M4 PT Pty Ltd, WCX M5 AT Pty Ltd, WCX M5 PT Pty Ltd, WCX M4-M5 Link AT Pty Ltd, and WCX M4-M5 Link PT Pty Ltd	STP Consortium ¹⁸ 100%	December 2060	648
Cross City Tunnel	Transurban CCT Pty Ltd	Transurban: 100%	December 2035	77
Eastern Distributor	Airport Motorway Ltd	Transurban: 75.1% IFM: 14.4% UniSuper: 10.5%	July 2048	169
Hills M2	The Hills Motorway Limited	Transurban: 100%	June 2048	367

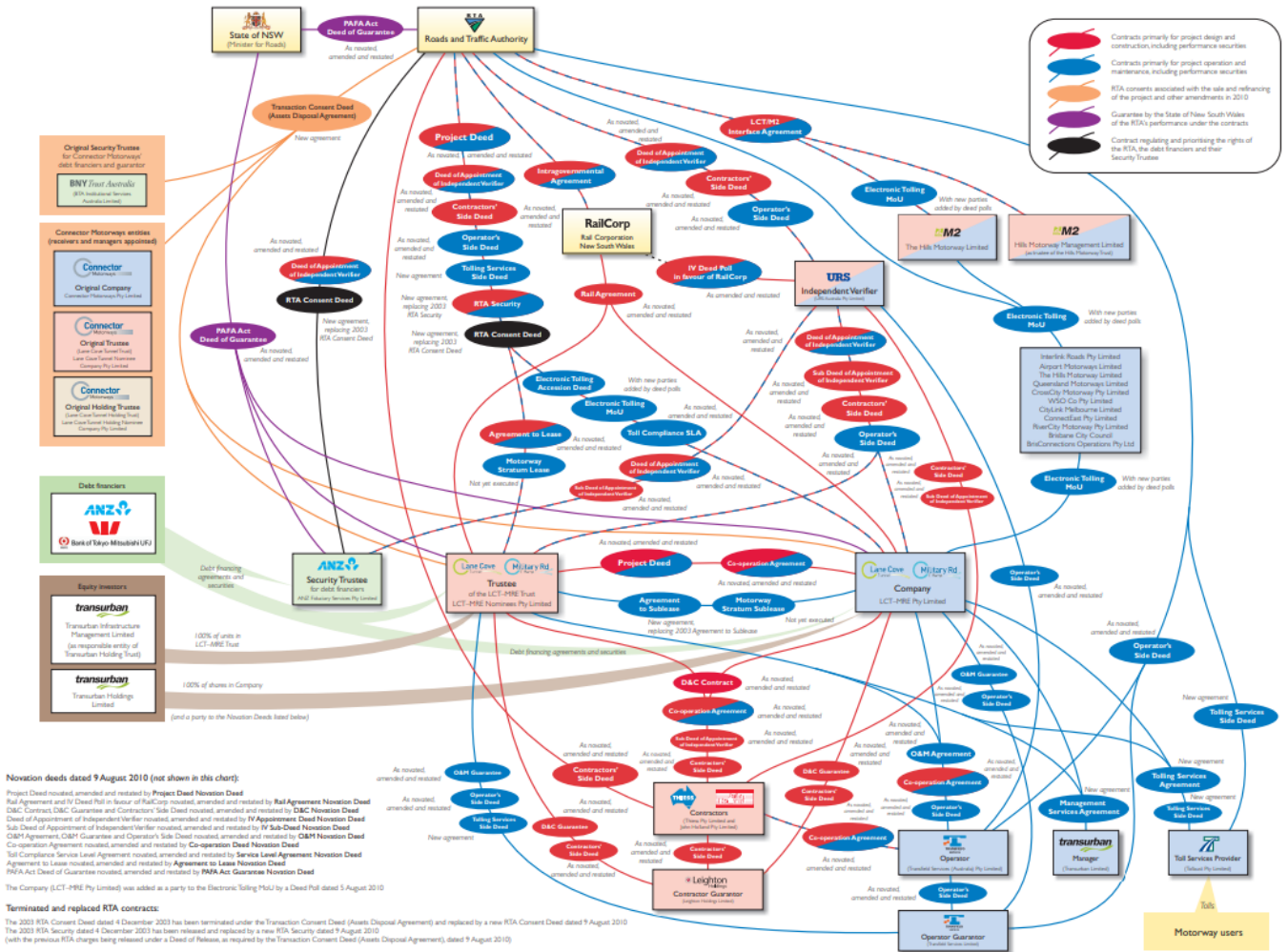
¹⁸ STP is a consortium which consists of Transurban, AusSuper, Canadian Pension Plan Investment Board (CCPIB), Caisse de dépôt et placement du Québec (CDPQ) and Tawreed. Tawreed is a wholly owned subsidiary of Abu Dhabi Investment Authority (ADIA).

Toll road/s	Concessionaire	Concessionaire ownership	Concession end	Financial year 2022-23 revenue (\$ million)
Lane Cove Tunnel	LCT-MRE Pty Ltd	Transurban: 100%	June 2048	104
NorthConnex	NorthConnex Company Pty Ltd	Transurban: 50% QIC: 25% CPPIB: 25%	June 2048	161
Westlink M7	WSO Co Pty Limited	Transurban: 50% QIC: 25% CPPIB: 25%	September 2051	485
M5 South-West	Until 10 December 2026, Interlink Roads Pty Ltd From 11 December 2026, WCX M5 AT Pty Ltd and WCX M5 PT Pty Ltd	Until 10 December 2026, Transurban: 100% From 11 December 2026, STP Consortium: 100%	December 2060	334

Source: Independent Toll Review. Concessionaire revenue figures sourced from Transurban FY23 Investor Presentation, Page 50.

The concessionaires listed in Figure 2.4 are parties to the head concession agreement for each toll road PPP. In reality, each toll road PPP involves a number of related contracts and interested parties. For example, the Lane Cove Tunnel contract structure in August 2010 is depicted at Figure 2.5. This provides an illustration of the number of arrangements which are in place for each concession. Many of these arrangements would be affected by any changes to the concession agreement (e.g. rights may be triggered under the Financiers Tripartite Deed).

Figure 2.5 Overview of the structure of the Lane Cove Tunnel project contracts from a public sector perspective upon the completion of the sale of the Lane Cove Tunnel project to Transurban on 9 August 2010



Source: Lane Cove Tunnel, updated summary of contracts, incorporating summaries of contract changes to 9 August 2011, p.14.

Road user charging

Tolls are a form of road user charging for a specific category of road. While the focus of this Review is to reform Sydney's current tolled road network, we are aware Australian jurisdictions have from time to time considered broader road user charging as a source of road funding. With fuel excise revenue declining, this is likely to become a higher priority in the future.

The interaction between toll roads and untolled roads is extremely important. The Review considers alignment between how tolls and future general road user charges are calculated would be desirable. If they are both calculated on a distance per kilometre basis, it will reduce potential distortions on the network.

In 2022, as part of the NSW Electric Vehicle Strategy, the then NSW Government announced its intention to introduce a distance-based road user charge for eligible electric vehicles of \$0.0025/km (indexed to CPI) from 1 July 2027 or when electric vehicles reach 30 per cent of new vehicle sales, whichever comes first. Recent Victorian experience indicates a tax of this kind (on use of a particular type of vehicle) may constitute an excise, requiring the Australian Government to legislate.¹⁹

¹⁹ Vanderstock & Anor v. The State of Victoria (2021) M61

Regardless of the legalities, an initiative such as road user charging would presumably require a multi-jurisdictional approach, consistent with other land transport reforms.

B

Evaluation of tolls

3 Public Private Partnerships and toll roads

Draft Findings:	
Process for setting tolls	Finding 1: The process for setting tolls has been flawed.
Toll road PPPs	<p>Finding 2: The important details of PPP arrangements relating to toll setting are not disclosed to the public, reducing the information available to assist public understanding.</p> <p>Finding 3: Toll road users bear a disproportionately high proportion of the cost of toll roads.</p>

Public Private Partnerships (PPPs) have facilitated motorway network expansion with reduced fiscal impact

Apart from the Sydney Harbour Bridge, all toll roads in Sydney have had a significant private sector involvement in their design, construction, operation and maintenance, as well as financing.

Governments have leased land and contributed to the capital costs of most of the roads, but the bulk of funding has come from the private sector. Under Public Private Partnership (PPP) agreements, Special Purpose Vehicles have been established to undertake and fund the necessary works and in return been given the right to levy tolls on users at rates essentially determined by governments.

PPPs were introduced in the late 1980s with the Sydney Harbour Tunnel being the first to be developed in this way. Governments were attracted to PPP financing because of perceived limitations of their capacity to fund this infrastructure from existing taxation revenues and external borrowings. In part, this was both a reaction to the size of demands for infrastructure investment generally, not just for roads, and also a reaction to political pressures to limit the size of government and provide more scope to allow the private sector to flourish. This particularly followed the neoliberalism philosophy which had become dominant in the UK and USA at the time.

Tolls and user pays

A feature of the PPPs has been that they have generally taken the form of economic PPPs where revenue to finance the costs of the private sector parties has been raised mainly through tolls collected. Governments have been able to avoid costs, and the community has benefited from early access to the roads, but the cost of achieving these benefits is borne by the users of the roads now and in future for the life of the PPP concession agreements, anything from around 30-45 years.

User charging in the form of tolls is appropriate to the extent that users are the beneficiaries of the roads concerned. However, there are also likely to be non-user beneficiaries from the toll roads, including the community generally. For example, the broader community may benefit from the diversion of traffic from local areas, reductions in vehicle emissions and so forth associated with these roads. Tunnels can be especially important in this regard also in helping to preserve and create new environmental benefits. Government contributions to road projects can be a way to recognise these non-user benefits in the recovery of overall cost. Even here though, government contributions funded from general taxation may not be as well targeted as desirable. For example, people outside Sydney contribute to general taxation as well as those living in Sydney.

While tolls have been a feature of economic PPPs, they are not unique to these arrangements. Indeed, tolls were introduced on the Sydney Harbour Bridge when it commenced operation in 1939 and they continue to be set on this and the other publicly operated toll road, the Sydney Harbour Tunnel. In both cases, construction costs have been recovered from the tolls set, but significant on-going maintenance and operating costs still have to be met. Even if these costs were negligible, there is still likely to be a necessity to set tolls to help manage traffic flows on these crossings. If there were no charges, the demand to use the crossings, particularly at peak times in the weekday mornings and evenings is likely to be so great as to cause severe congestion. Toll help to ration use of these facilities and manage traffic flows.

Availability PPPs are an alternative to economic PPPs. Private sector funding is still accessed to help pay for infrastructure and its operation and maintenance, but the revenue risk associated with traffic demand stays with the government and is not borne by the private sector operator. Rather governments make periodic payments to the private sector partner for making the infrastructure available for use. These payments could reflect use of the infrastructure and be in the form of 'shadow tolls'.

Risk allocation in PPPs

An important consideration in PPP agreements relates to the sharing of risks. There are many risks associated with the design, construction, maintenance, operation and financing of roads. Where responsibility for managing these risks lies is important in determining realisation of costs and benefits overall. In general, it is preferable that risk lies with the parties best placed to manage it at lowest cost. Having a dedicated concessionaire vehicle to manage a road project is typically better than having this done by a government department or body with a broader focus. Private partners tend to have stronger motivation and ability to manage construction operation and budgets more successfully than government bodies do. Managing both construction and operations together may provide a stronger incentive to ensure the quality of the road is such that maintenance costs over the period of the maintenance contract are minimised.

Over time there has been a significant evolution in PPP agreements reflecting the experience with each earlier agreement, the motivations of the parties and the particular circumstances relating to the new road being developed. The parties involved have sought as much certainty as possible in relation to agreed arrangements, to minimise their risks and to maximise their benefits. While governments could in general be expected to have regard to the interests of the wider community in negotiating these agreements, the desire to attract private finance and to conclude the deals has also influenced outlooks. There has been and remains inadequate transparency in relation to commercial arrangements within PPP agreements which has adversely affected the public accountability associated with them.

The PPP agreements have of necessity been set to last for long periods of time, generally between 30-45 years. This reflects the size of the investments made by the private sector partners and expectations of how much revenue tolls could generate each year to recover costs, including returns on the capital involved. Certainty for concessionaires has been provided by not building into these agreements the capacity for regular reviews of agreed arrangements and by providing processes able to be pursued by the private sector partners should major adverse events occur which had not been assumed when the agreements were signed. However, this has meant also that any flaws in these agreements at the outset have continued to impact over time. This is particularly important for this Review, since the tolls that exist today are essentially what had been agreed to when the PPP agreements were signed. It also highlights the need to understand as much as possible the processes followed at the time in determining tolls.

The early agreements provided significant assurances to the private sector partners in relation to revenues. This was particularly important given the significance of traffic risks in relation to new roads. The recovery of costs over time through tolls is dependent on the traffic attracted to the roads. The difficulties of accurately forecasting demand can, however, be significant especially with new 'greenfield' developments where there is no previous traffic experience to help guide the forecasts. In fact, the experience over time with some new toll roads (for example CCT and LCT) has been that underlying traffic forecasts have been significantly over-stated.

The agreements surrounding some of the earlier roads included provisions which guaranteed the revenues of the private sector partners so that if the traffic was less than had been expected the operator was topped up by governments. More than \$1 billion was paid over-time to the operator of the Sydney Harbour Tunnel in consequence of such a guarantee. In 2008, the Auditor-General was highly critical of this aspect of the agreement.²⁰

Later agreements moved more of this traffic risk onto the private operators. Consequently, when traffic fell well short of forecasts in relation to the Cross City and Lane Cove Tunnels, the private sector operators had to bear this cost. The financial difficulties experienced caused them to exit from the concession arrangements and new operators took over these roads.

Not surprisingly this experience dented the willingness of private sector operators to enter into PPP arrangements of this kind. The WestConnex project followed a different approach which helped to overcome this problem. The WestConnex concessions for Stages 1 and 2 incorporated greenfield and brownfield traffic risks. For example, at the time of the first WestConnex sale, bidders had access to actual tolled traffic data on the WestConnex M4 Widening and the M5 South-West, and untolled traffic data for the M5 East.

Governments can significantly influence the traffic on individual roads through general transport policies, including in relation to public transport and through planning, population and other policies. Placing the traffic risk fully on the private operators is likely to cause them to seek higher rates of return, higher escalation of prices, and/or longer concessional periods than otherwise to offset this risk. The better outcome is likely to be one when the risk is shared between the parties.

One undesirable feature of the M2 agreement signed in 1994 was a specific provision to protect the concessionaire from adverse impacts arising from a competitive public transport development. The Review understands that this provision was removed in 2010, but its legacy effects may have continued beyond then. The agreement also notes that Transport for NSW must recognise the position of the M2 as the principal arterial road servicing the Northwest regions of Sydney and the connections to it. As with the Eastern Distributor agreement, the concessionaire must be consulted on proposed extensions to the motorway.

A number of agreements have provisions relating to connections to the toll roads, the aim of which seem to be to protect the financial position of the concessionaires not necessarily to prevent change.

The more recent NorthConnex agreement includes a non-compete clause concerning the possibility of a new motorway not owned by the concessionaire project company connecting the M1 to the M7 from being opened.

The PPP agreements contain detailed provisions about lease payments and financing arrangements which go toward reducing the financing risks for concessionaires. Again, these have changed over time.

There are also provisions which potentially could moderate abnormally high concessionaire returns in some cases. Appendix C provides an overview of these provisions. More recent concession agreements (e.g. WestConnex) have included revenue rather than profit sharing arrangements, profits being less transparent. Details of any upside sharing that has actually occurred are considered by Transport for NSW to be commercially confidential.

Finding 1: The process for setting tolls has been flawed

The PPP concession agreements specify the basis on which tolls are set. Tolls are specified in schedules to the agreements which indicate base tolls and a method of escalating the tolls over the length of the concession.

They have been determined administratively by governments and generally provided as indicative to inform bidders.

²⁰ <https://www.smh.com.au/national/harbour-tunnel-a-1b-black-hole-20081211-gdt64w.html>

Public Sector Comparators

While it is generally recognised that governments can borrow more cheaply than private sector entities, it was also considered that private sector entities might be able to perform some tasks more efficiently than governments.

Decisions on whether or not to construct a new road should be based on an assessment of the community benefits and costs involved. Funding decisions should be subsidiary to these fundamental benefit cost assessments. Public Sector Comparators have been developed to compare the costs of government and private sector provision, but we are aware of at least one case where it appears that this has not been adhered to when assessing the relative efficiency of government and private sector funding (see Figure 3.1). Given the perception that government funding was constrained, this is, perhaps, not surprising.

Figure 3.1 Case study: assessment of a public sector comparator and toll setting for the Eastern Distributor

On 23 May 1994, the Roads and Traffic Authority (RTA) issued invitations to private sector parties to submit preliminary proposals that would deliver the Eastern Distributor as an economic PPP. The RTA provided the rights to design, construct, operate, maintain and finance the ED under a long-term concession.

By receiving the right to toll, the private sector parties would assume the risks of construction, operations, traffic and financing.

Bidders were assessed on various items, notably, an upfront payment, concession period and the tolling regime. On December 1996, Airport Motorway Limited (AML), a company backed by a consortium of Leighton Contractors and Macquarie Bank was selected as the preferred proponent. AML's proposal would originally provide the RTA with an 'upfront payment' of \$163m which would fund other RTA works at the time. However, RTA-initiated modifications, alongside additional modifications following feedback from the Environmental Impact Statement resulted in the 'upfront payment' becoming 'absorbed' into partly funding these modifications. The modifications were also funded by increasing the base toll from \$2.50 to \$3.00 on tunnel opening for cars and the concession term increased from 38 to 48 years. It was estimated that these two changes to the toll would raise an additional \$43 million for the project.

On 16 August 1997, financial close was achieved. The estimated total project cost for the Eastern Distributor was \$700m.

Analysis from the RTA conducted in November 1995, based on the same scenarios as those proposed by AML indicated that a government funded toll road would provide a marginally higher return than the privately bid proposals. This analysis also involved a \$20m premium to the government-funded proposal to allow for the 'increased efficiency and incentive expected to be displayed by a private venture proponent'. This was despite a Government policy guideline issued in 1995, which stated that private sector involvement must offer a more cost effective solution, if it is to be favoured above the traditional public sector approach.

The Government's decision to proceed with a privately financed toll road was influenced by several policy considerations:

1. The Government would need to raise more than \$600m debt if it was to implement a Government funded toll road strategy. This would not comply with the intent of the Government's *General Government Debt Elimination Act 1995*.
2. The Government funded toll road strategy would have had an interest coverage ratio of under one over the first five operating years, that is, the revenue generated (not including the costs of operating and maintaining the toll road) would be insufficient to cover the interest cost of the project. This would require equity injections from Government, which would not achieve the Government's policy objective of delivery the Eastern Distributor at 'no net cost to Government'.

3. The Government toll funded strategy would take on traffic and interest rate risk, which present a material risk to the Government's financial exposure to the project. Under the privately financed option, these risks are taken by the private sector.

Sources: Performance Audit Report: Review of Eastern Distributor (July 1997), Eastern Distributor: Summary of Contracts (September 1998).

Proponents point to the significant benefits PPPs have provided by enabling roads to be built much sooner than they would have otherwise been if they had to be funded by governments. They also suggest that PPPs have enabled governments to fund other necessary projects and/or retire debt sooner than otherwise. These claims hinge on whether the roads have been appropriate investments in the first place and whether it was, in fact, better that they were introduced earlier than otherwise. Some people claim that toll roads do little in the long term to overcome congestion since they act to induce further traffic and prevent further investment in public transport. We do not need to judge these competing claims here, but we do in this report highlight the importance of efficient pricing and how its application can help to manage traffic and delay further road capacity expansions.

There is no doubt that the use of PPPs has enabled the development of a network of roads in Sydney that provides major benefits to many motorists and to the community generally, including by facilitating the efficient movement of freight around the city. The roads provide significant opportunities to save on travel times, improve safety and reduce vehicle emissions. The roads and tunnels are magnificent feats of engineering which will serve the city for many years.

PPPs have also generally been successful in ensuring projects were built within set timeframes and in line with designated budgets.

Government procurement processes did not prioritise using competitive pressure to set the lowest tolls for motorists

Governments have pursued a range of objectives when deciding to build new roads and fund them partially or wholly through user contribution. The methodology used to determine the toll schedules incorporated in concession agreements has not been fully transparent. However, in most cases it can be said that governments have had the dominant influence in determining tolls. Indicative toll schedules have been provided to bidders based on factors such as what user contribution was considered necessary to help fund a project and what view was taken of user willingness to pay.

It is important to understand that competition has not had a direct influence on the setting of tolls. While competitive bidding has underpinned the PPP process, the bidding has essentially been based on elements other than tolls. Rather the tolls have been set administratively by governments. Given the rigidity associated with the concession agreements, any mistakes in setting toll levels from an efficiency or fairness perspective would have consequences which extended over long periods of time.

The results of a competitive process will depend on the basis on which the process is conducted, including the criteria for assessment of bids. This can be highlighted by considering two alternate approaches. The first approach could be to evaluate bids based on how much bidders are prepared to pay the Government for the right to build and operate a road. The incentive here is for bidders to submit a high lump sum payment to Government based on optimistic assumptions (potentially underestimating their efficient costs or overestimating revenues) in order to attract Government support and hoping that tolls will be set to accommodate the bids. The second approach could be for bidders to propose the level of tolls that they would need to undertake the required works with the winning bidder bidding the lowest tolls. This latter approach was at used for the East Link concession in Melbourne in 2004. Here the focus in the evaluation of bids was on the bidder willing to charge the lowest tolls.

Over time, the precise approach followed in New South Wales has changed but the general conclusion that past approaches did not prioritise using competition to achieve the lowest possible toll for motorists remains.

For the M5 South-West, the Hills M2 and the Eastern Distributor, which opened to the public in 1992, 1997, and 1999 respectively, it appears that participants have some ability to bid on tolls as part of the procurement process, but this was not a decisive element of the process.

For the Westlink M7 and Lane Cove Tunnel, which opened to the public in 2005 and 2007 respectively, competitive pressure was again not used to get the lowest tolls for motorists.

The Richmond Review²¹ noted that in advance of going to tender, the then Roads and Traffic Authority set the toll based on a benefit cost analysis, and tendering consortia bid on that basis. As the 2010 post implementation review for these roads observed, *'The toll level for each of the subject motorways was set based on financial modelling, which utilised a public sector comparator model assuming minimal or no cost to government. The toll level considered capital costs and operating costs over the concession period, with due regard to public willingness to pay and a reasonable return on investment to the private consortia during the concession period'*.²² The report further noted *'Historically, the toll level has not been based on prevailing tolls on other roads or maximising the usage of the new toll road'*.²³

In the example of the Cross City Tunnel, which opened to the public in 2005, the toll price continued to evolve and increase after the initial tendering process (see Figure 3.6).

With WestConnex and NorthConnex, competitive pressure was also not used to arrive at the toll price. In the case of WestConnex, proponents in the equity sale were not invited to bid lower toll prices. The toll prices were predetermined by government, based on the M7's per-kilometre rate with certain adjustments: a \$1 flagfall, a minimum escalation of 4 per cent per annum until December 2040, and a cap after 16 km instead of 20 km.

In the case of NorthConnex, the process was an unsolicited proposal from the owners of Westlink M7, with competitive procurement for design and construction. The NorthConnex toll was set to be same as the M2 main plaza tolls, rather than by reference to the specific characteristics of NorthConnex.

The basis for the administrative determination of tolls is not entirely clear because of the lack of transparency surrounding the key financial data affecting the agreements and impacting tolls. Early agreements built in what

²¹ Infrastructure Implementation Group. (2005). Review of Future Provision of Motorways in NSW.

²² Road Transport Authority. (2010). Post Implementation Review, M7 Motorway, Cross City Tunnel and Lane Cove Tunnel. https://www.treasury.nsw.gov.au/sites/default/files/2017-02/Lane_Cove_m7_motorway_cct_lct_post_implementation_review_report_dnd.pdf.

²³ Road Transport Authority. (2010). Post Implementation Review, M7 Motorway, Cross City Tunnel and Lane Cove Tunnel. https://www.treasury.nsw.gov.au/sites/default/files/2017-02/Lane_Cove_m7_motorway_cct_lct_post_implementation_review_report_dnd.pdf.

now appear to be quite generous rate of return assumptions, as interest rates were historically high at the time they were negotiated.

Possibly also reflecting available rates of return for other assets at the time these deals were entered into, upside share becomes payable at quite high rates of return. For example, payments of rent for land in cash were not required to be made by the concessionaires under the M2 and Eastern Distributor agreements until post tax real rates of return on equity were 12.25 per cent and 10 per cent respectively.

Returns underlying the tolls were high under the M2 agreement.

'The internal rate of return that the private sector equity investors expect from the M2 is expressed in the Base Case Model in the following (nominal per annum) terms: 18.5% pre-tax cash return or 16% post tax return which is the pre-tax equivalent of 24.4%. These can be compared to the nominal rate of 18.7% per annum pre-tax developed using the normal cost of capital model'.²⁴

Under the Cross City Tunnel, Westlink M7 and Lane Cove Tunnel agreements, the government sought upfront payments of \$96.8m, \$193m and \$479m respectively from the winning bidders to offset expenses incurred by the governments in developing the projects and associated works.

Nearly one-half of the payment made for the Cross City Tunnel was for a 'Business Consideration Fee' which was a payment for the right to levy tolls. The concessionaire was selected on the basis that this was the upfront payment bidders were willing to provide. In doing this, the government in effect promoted and captured the benefits of monopoly pricing on the toll road. Subsequent history has readily served to confirm that tolls on this road have been set at too high a level resulting in significant underutilisation.

Where toll roads have been sold, the existing toll schedules contained in the PPP concession agreements have continued to apply. Prices paid for the assets involved by the new owners have no doubt been influenced by what these tolls were and by actual experience with regard to traffic.

The biggest sale of toll roads occurred with the WestConnex project. This project essentially involved government procuring the major contractors (including design and construction), the subsequent 51 per cent sale to the private sector, use of funds generated to help complete the project and sale of the remaining 49 per cent of the project. The term asset recycling was used to describe this form of infrastructure delivery. Funds from the sale of WestConnex were able to be channelled into other areas of government priority.

Figure 3.2 Case study: WestConnex equity sales

²⁴ Performance Audit Report: The M2 Motorway, The Audit Office of NSW (1995), p.10, available at https://media.opengov.nsw.gov.au/pairtree_root/2c/89/d1/55/dc/65/46/57/95/72/80/b0/3e/12/cc/71/obj/Report_No_16_M2_Motorway_January_1995.PDF

The WestConnex project had a number of stages and involved three separate concessions:

- Stage 1 being the M4 East (a new 6.5 km tunnel) and 7.5 km widening of the M4 between Parramatta and Homebush.
- Stage 2 being the 11 km M8 tunnel. The Stage 2 concession includes the right to toll and obligations to operate and maintain the existing M5 East (from opening of the M8 tunnel) and the existing 21.5 km M5 West Motorway (from December 2026).
- Stage 3 being the 7.5 km M4-M8 Link connecting Stages 1 and 2. The Stage 3 concession includes the right to toll and obligations to operate and maintain the Rozelle Interchange (with the Iron Cove Link portion of the Rozelle Interchange untolled).

The sale of the concessions occurred in parallel with the delivery of different stages of WestConnex. The Sydney Motorway Corporation, a non-guaranteed private limited company 100 per cent owned by the NSW Government, was established to fund, deliver and operate the project. Subsidiaries were established by Sydney Motorway Corporation for each of the project stages. These Special Purpose Vehicles entered into project deeds with RMS, which set out the terms of the concessions and the right to toll the roads until 2060.

The WestConnex structure in Stages 1 and 2 combined greenfield and brownfield traffic risks. Ensuring integrated operations across stages of WestConnex was also an important risk to be managed. Some economies on major costs like electricity were able to be achieved across the project. Coordination on tolling arrangements has also been achieved. An access (flagfall) and distance-based charge, capped after 16 km applies across all the WestConnex roads. The tolls will be escalated at the greater of 4 per cent or the CPI per annum until 2040 after that by the CPI.

The Government ran a sale process for the equity in the headline corporate entity (Sydney Motorway Corporation) on an 'as is' basis. The concessionaire vehicles were wholly owned subsidiaries of Sydney Motorway Corporation. This meant that the management of the ongoing construction activities for Stages 1 and 2 and the procurement of the design and construction contractor for Stage 3 could proceed in parallel with the sale process.

The initial 51 per cent equity in WestConnex was sold in August 2018 to the consortium Sydney Transport Partners (STP), led by Transurban, for \$9.26 billion. This consortium later also acquired the remaining 49 per cent government stake when this was sold in September 2021 for \$11.1 billion.

Source: Independent Toll Review

Decision-makers have placed significant emphasis on short-term benefits and undervalued long-term impacts

Governments face strong incentives to reduce immediate fiscal outlays and gain positive community recognition for new projects. This suggests two things. First, that there will be a preference for using external funding, including user charges, to meet the cost of new infrastructure; and second, toll schedules are likely to include a significant element of deferral of cost recovery to the future, rather than in the early years of a project. Toll road PPP transactions appear to have been influenced by such considerations, both on single toll road deals and also where toll revenues from one toll road cross-subsidies another toll road. Cross-subsidisation has been justified on the basis that it aligns with the 2014 Principles that 'Tolls charged reflect the cost of delivering the motorway network' and 'Tolls can continue while they provide broader network benefits or fund ongoing costs.'

Figure 3.3: Cross-subsidisation case studies

NorthConnex

Tolls on the Westlink M7 help to pay for NorthConnex. In January 2015, an amendment to the Westlink M7 concession was signed as part of the funding model for NorthConnex. Under the amendment, the heavy vehicle multiplier for the M7 increased from 2x to 3x and the M7 concession was extended from February 2037 until June 2048. This was done in preference to increasing tolls for light vehicles.

WestConnex

Tolls on existing roads - the M5 East, the M5 South-West, and the M4 (from Parramatta to Homebush) - help fund other parts of WestConnex which were not financeable on a standalone basis. Incorporating 'brownfield' assets (i.e. roads with a proven traffic history) into the concession arrangements was a critical component of the funding strategy for WestConnex, particularly given traffic forecasting issues on prior 'greenfield' toll roads (i.e. the Cross City Tunnel and Lane Cove Tunnel).

- The M5 East opened in December 2001 and operated until July 2020 as an untolled part of the Sydney motorway network. The WestConnex concessionaires for the M8 tunnel have the right to toll the M5 East (and the obligations to operate and maintain it) from July 2020 to December 2060.
- 'Stage 1' of the M5 South-West opened in August 1992. The WestConnex concessionaires for the M8 tunnel have the right to toll the M5 South-West (and the obligations to operate and maintain it) from December 2026 to December 2060.
- The M4 Widening section of WestConnex opened in July 2017 with a total capital cost of about \$500 million spent on widening the existing M425. At the time of the sale of the State's 51 per cent interest in WestConnex, traffic forecasts for this section were significantly de-risked as the M4 Widening was already open to traffic and it had a tolled traffic history with the previous toll removed in February 2010.

Source: Independent Toll Review

Observations on specific contract features: concession length, contract incentives and allocation of demand risk.

Governments have opted for higher escalation rates and longer concession terms to reduce starting toll prices and government contributions, pushing more of the funding burden onto future motorists.

Governments have structured contracts so that concessionaires take the risk of costs in the delivery or operation of toll roads (to agreed service standards). However, this has meant that the concessionaires receive the full benefit of any cost savings they can achieve, rather than share these motorists in the form of lower tolls.

In more recent PPP agreements traffic risk has been allocated to the concession holders. This means that if traffic does not meet their expectations built into Base Case Financial Models developed in the context of the concession agreements they suffer financially but if the traffic exceeds expectations they benefit. Accordingly when toll road use declined during the COVID-19 pandemic the revenue consequences were borne by the concessionaires, not government. In the long term as traffic builds on the roads and tolls continue to escalate it is likely that concessionaires will benefit significantly. Some of this benefit may go to governments through sharing arrangements built into the concession agreements (refer to Appendix C). The benefits shared with government to date have not been significant.

²⁵O'Sullivan, M. (2017, August 15). New M4 toll funnels more motorists onto Sydney's Parramatta Road. The Sydney Morning Herald. <https://www.smh.com.au/national/nsw/new-m4-toll-funnels-more-motorists-onto-sydneys-parramatta-road-20170815-gxwaob.html#:~:text=The%207.5%2Dkm%20section%20of,%2416.8%20billion%20WestConnex%20motorway%20project.>

Demand for toll roads is influenced by government actions. These include measures to increase the attractiveness of the city to new businesses, residents and visitors as well as improvements to roads and linkages to the motorways. The concessionaires are the beneficiaries of these measures.

Finding 2: The important details of PPP arrangements relating to toll setting are not disclosed to the public, reducing the information available to assist public understanding.

There is currently no legislated guidance as to the factors to be considered in setting tolls, although there is provision for regulations to be made regarding maximum tolls and charges. As a policy position, the NSW Government has adopted the 2014 Tolling Principles to guide toll setting for new toll roads. The level of openness, clarity, and accessibility of data and information about PPP agreements influences public confidence in tolling. This includes how much information is shared, how easily it can be accessed by the public, and how comprehensible it is to non-specialists.

Over time, as the use of PPPs has evolved, relevant guidelines have been progressively updated to promote transparency by making information public about the rationale for investment, and key aspects of the agreements NSW Government enters with concessionaires. The current arrangements are outlined in Figure 3.4.

Figure 3.4: Current transparency arrangements for PPPs

Currently, the following key information is provided to the public:

- As projects are developed, the Environmental Impact Statement process is designed to ‘help the community, government agencies, and the approval authority make informed submissions or decisions on the project’, providing ‘information on the economic, environmental, and social impacts of the project’.
- Infrastructure NSW prepares Business Case Summaries for projects exceeding \$100 million where the Government has announced an investment decision for that project. These summaries provide information about the strategic context, the project need, project objectives and design, options identification and assessment, economic evaluation and deliverability. The Business Case Summaries also include feedback on the business case provided by Infrastructure NSW.
- After an agreement for a PPP is reached, the redacted contracts are released on Transport for NSW website in accordance with the GIPA Act.
- After an agreement for a PPP is reached, the NSW Public Private Partnership Policy and Guidelines requires Project Summaries to be publicly released within 90 days of the contract becoming effective. The Project Summary must have two distinct parts. The first is the Project Overview, including a summary of, and rationale for, the project, its value and the parties involved. The second part is the Key Commercial and Contractual Features, which summarise the key aspects of the Project Contracts.

Source: Independent Toll Review

The amount and type of information that is made public about the original agreements varies based on the applicable disclosure obligations that applied at the time.

While there is a variety of information available, any limitations in disclosure have the effect of eroding public confidence and reducing the ability of the community to fully understand how tolls are set, and the financial underpinnings of these projects. Some stakeholders noted this in their submissions, detailed in Figure 3.5.

Figure 3.5: Stakeholder feedback on transparency of agreements

City of Sydney: The current tolling system is complex and has evolved over time in parallel with the development of the motorway network. Road tolls have been set by Government without community consultation or involvement, and with limited sense of overall network or journey pricing. Given the lack of available data about either costs or revenues it is impossible for the community to meaningfully comment on the benefits of simplicity. To understand the impacts of any proposed changes to the tolling system, the Government (and Transport for NSW) and Transurban would need to disclose the financial details of the various motorway deals and current motorway patronage.

Canterbury Bankstown council: It is unclear, given Transurban's reluctance to release traffic data and the opaque nature of commercial and contractual agreements between previous State Governments and Transurban, how much control and influence the State Government can exert over the determination of tolls, noting concession arrangements for the M4, M5, M8 and the M4-M8 link are locked in until 2060.

Source: Public Consultation, stakeholder submissions, 2023

The Review notes that over many years there have been calls for greater transparency of details relevant to the setting of tolls, but these calls have only been responded to in partial ways. Generally, it has been claims of commercial confidentiality which have been the basis for maintaining the secrecy of important details regarding tolls.

The Review sees no basis for not disclosing the BCFMs underlying toll setting. While competitive bids are in play it is appropriate that such information is not disclosed, but once the successful bidder is determined, this information should be released in a timely manner. This principle should be applicable to all existing concessions as well as new concessions. It is even more important that this principle is applied in the context where there is one dominant operator in the industry.

Other important details which should be fully disclosed before decisions are made about tolls relates to the assessment of willingness of users to pay for toll roads. Expert reviews of the VTTS in this area should, for example, provide this information the basis for public discussion not decision making without detailed public input. There is a significant history of tolls on new roads in Australia being set at levels which have not appropriately reflected willingness to pay with consequent impacts on demand and road utilisation.²⁶ In nearly all cases it seems the tolls have been set at too high a level. This problem has been compounded by the rigidity of the tolling schedules over the life of the concession agreements.

Information about the financial performance of toll road operators is also limited. Limited public disclosure requirements are imposed on Special Purpose Vehicles. As a result, the actual rates of return obtained under individual concessions cannot readily be determined.

Value of Travel Time Surveys and willingness to pay

In setting the level of tolls governments have had some regard to the VTTS for users and how much time users may save in using a toll road rather than an untolled alternative. While it is unclear to the Review exactly how important this data has been in practice in setting tolls, there are potential weaknesses in relying too much on this data. Estimates of VTTS vary widely depending on the techniques and approaches adopted. Common techniques include stated preference, revealed preference and calculation based on wage rates. How samples are selected, interviews are conducted, vehicles segmented, the data are handled, and the models used to describe the data can all impact on the results obtained.

VTTS can be produced on a per vehicle, per driver and per occupant basis. Different users are likely to apply different VTTS depending on their own circumstances, level of wage and so on. A VTTS for a higher income earner

²⁶ Bureau of Infrastructure and Transport Research Economics & Department of Infrastructure, Transport, Regional Development. (2016). Toll Roads in Australia. Information sheet 81. https://www.bitre.gov.au/publications/2016/is_081.

may be greater than for a lower income earner. A toll set in line with the VTTS for a high-income earner may then be too high for a low-income earner.

The actual time saving from a toll road is also likely to change over time as traffic builds up on the toll road or changes occur to other transport alternatives. Tolls are likely to be perceived to be too high if the toll roads become more congested.

Significant work was undertaken to estimate VTTS associated with the WestConnex scheme. This followed the earlier failures to set tolls to generate enough traffic and revenue to allow the Cross City Tunnel and Lane Cove Tunnel to operate viably in the years after opening. The initial operators were replaced by new operators, but the tolls remained at the same levels.

Toll saturation is another factor which may mean VTTS does not reflect willingness to pay for toll roads. Leading transport economist Professor David Hensher has referred to the notion of toll saturation as likely to be applying in Sydney. This hypothesises that as more and more toll roads have been added to the network some motorists may have run up against a toll budget barrier causing them to economise on their use of these roads.

Notably, in 2005 the Richmond Review also warned Governments to exercise caution when using VTTS.

‘The [Richmond] Review does not accept that the implicit valuation of time-savings is the same as whether a toll represents value for money from the user’²⁷

Prior to determining tolls on any motorway, there should be significant and genuine public discussion about the appropriate level of tolls.

Finding 3: Toll road users bear a disproportionately high proportion of the cost of toll roads.

Governments have in the past followed a policy of ‘no cost to government’. This means that as much of the costs of toll roads as possible is recovered from the private concession holders and ultimately tolls, rather than from government itself. With the Cross City Tunnel, the Government proposed capital works changes to maximise revenues for the concessionaire amounting to \$110m. These costs were, however, covered by significant changes made to the base tolls and the escalation rates in the concession agreement, which were implemented when the tunnel was opened, not by any contribution from the Government.

Placing full reliance on tolls or user charges to recover the costs associated with new roads suggests that there are no other beneficiaries of these roads. Clearly this was not the case with the Cross City Tunnel. It was expected that the road would bring significant amenity benefits to residents nearby and to visitors generally to the CBD, including pedestrians. There would seem to be a reasonable case that these beneficiaries should also help to meet the costs associated with the new infrastructure, if not through direct beneficiary charges, then through general State and local government funding for the tunnel.

Figure 3.6 Case study: evolution of tolling approach for the Cross City Tunnel

²⁷ Infrastructure Implementation Group. (2005). Review of Future Provision of Motorways in NSW.

The Request for Proposals for the Cross City Tunnel project indicated to proponents that 'a maximum base toll level of \$2.50 would be levied on all vehicles, but a lower toll, or different tolls for heavy and light vehicles, would be considered'.²⁸ The Request for Proposals also indicated that tolls would be adjusted according to CPI only. In the procurement process for the Cross City Tunnel, there were three shortlisted proponents, with Cross City Motorway consortium ('CCM') selected as the preferred proponent. CCM's bid proposed Class B tolls at double the Class A toll. CCM offered the RTA an upfront payment of \$100.1 million for the winning bid. The two unsuccessful proponents did not offer an upfront payment.

Two changes were made to the tolling regime before the tunnel opened. The first change was to the toll escalation mechanism and funded \$75 million of additional work. This related to an increase in the tunnel length to 2.1 km (which is its current specification), with the east entrance and exit further to the east of the Kings Cross Tunnel.²⁹ Minimum escalation rates of 4% per annum until 2012 and 3% per annum from 2012 to 2018 were agreed with escalation reverting to CPI only from 2018 onwards. This change was negotiated prior to the concession agreement being signed.

The second change was agreed after the concession agreement was signed and funded \$35 million of additional work. The parties agreed to increase the maximum base toll for cars by 15 cents to \$2.65 (in 1999 dollars) for Class A and 30 cents to \$5.30 for Class B. The Roads and Traffic Authority advised the Joint Select Committee on the Cross City Tunnel that the three main projects funded by this change were: (i) the redevelopment of William and Park Streets, (ii) the extension of the land bridge at the eastern end of the Kings Cross Tunnel, and (iii) a requirement to change the Tunnel Control Centre for the Cross City Tunnel to ensure the capacity of the roof of the Eastern Distributor was sufficient to carry the Tunnel Control Centre.

Source: Performance Audit Report: The Cross City Tunnel Project, NSW Auditor-General, May 2006

²⁸ NSW Audit Office. (2006). Auditor-General's Report Performance Audit: The Cross City Tunnel Project. https://www.audit.nsw.gov.au/sites/default/files/pdf-downloads/2006_May_Report_The_Cross_City_Tunnel_Project.pdf.

²⁹ Parliament of New South Wales. (2006). Cross City Tunnel (1). Joint Select Committee, 23-110. https://www.parliament.nsw.gov.au/lcdocs/inquiries/2144/CCT_First%20Report_FULL.pdf.

4 The structure and level of tolls

The Review has been asked to consider both the structure and level of tolls. The structure covers such things as the methodology underlying the calculation of the tolls including who and how they are set for, while the level concerns the overall amount of the tolls. Key considerations with the structure are whether tolls continue to be set for individual concessionaires or alternatively are set for the network of toll roads as a whole, and the basis for determining these tolls. User behaviour is particularly affected by the level of tolls.

Draft Findings:	
Structure of tolls	<p>Finding 4: There is no overall system of tolls.</p> <p>Finding 5: The lack of a unified pricing system creates complexity, inefficiency, inequities and unfairness.</p> <p>Finding 6: Tolls are too rigid and are locked-in for decades without options for review.</p> <p>Finding 7: On most toll roads, time-of-day pricing is not used to improve traffic management.</p> <p>Finding 8: The financial impact of tolls is greatest in Western Sydney.</p>
The level of tolls	<p>Finding 9: The level of tolls appears to be higher than necessary and desirable.</p>

Finding 4: There is no overall system of tolls

The current tolling arrangements have been considered in isolation of one another over time as each concession is entered into, and therefore have provided a myriad of different arrangements, that differ in their value and, their effectiveness.

When choosing when and how to travel, travellers consider a range of factors. Key amongst them are the time it will take to make the journey, the reliability of the journey time and the direct costs of the journey (for example, tolls or public transport fares). Other considerations include the costs they incur such as maintaining cars, and the comfort and amenity of the journey.

As has already been discussed, toll roads can offer motorists a quicker and more reliable journey, at a higher cost (the toll) than using the untolled network. The toll price plays a crucial role in this decision-making process; higher tolls may deter motorists, leading them to prefer untolled alternatives. The toll serves as a ‘price signal,’ influencing consumer behavior.

In the context of toll roads, the toll price can be used to send a signal to motorists that manages traffic flow and optimises the use of road infrastructure, for the benefit of all motorists. But it is unlikely that the current prices are optimising these or other objectives relating to efficiency and fairness.

As an illustration, Figure 2.3 details the range of pricing arrangements, including fixed charges, flagfall and distance-based pricing, time of day charges, different escalation rates, and one-way tolls for some roads. Some parts of the motorway network are also untolled. Further complicating this landscape are the several toll relief schemes (Finding 14), and the challenges motorists face understanding toll prices (Finding 13).

Figure 4.1: Stakeholder perspectives

Professor David Hensher, University of Sydney: ‘The current smorgasbord of toll settings in Sydney, set as part of a long-term concession for each tolled road, are adjusted based on an agreed indexation rule, which has created a distortion in the pricing of all roads, given the imposed baseline toll rate, which was often set politically. While the tolled infrastructure we have has been a net positive to users, the pricing of it has not helped the efficiency (and equity) of the entire network.’

Source: Public Consultation Summary Report, 2023 Independent Toll Review, August 2023 and Stakeholder Submissions, 2023

Finding 5: The lack of a unified pricing system creates complexity, inefficiency, inequities and unfairness

Different price regimes across the toll road network lead to different prices for similar trips on the network. The current vehicle classification system also leads to toll prices which do not appear fair or efficient.

Figure 4.2: Stakeholder perspectives

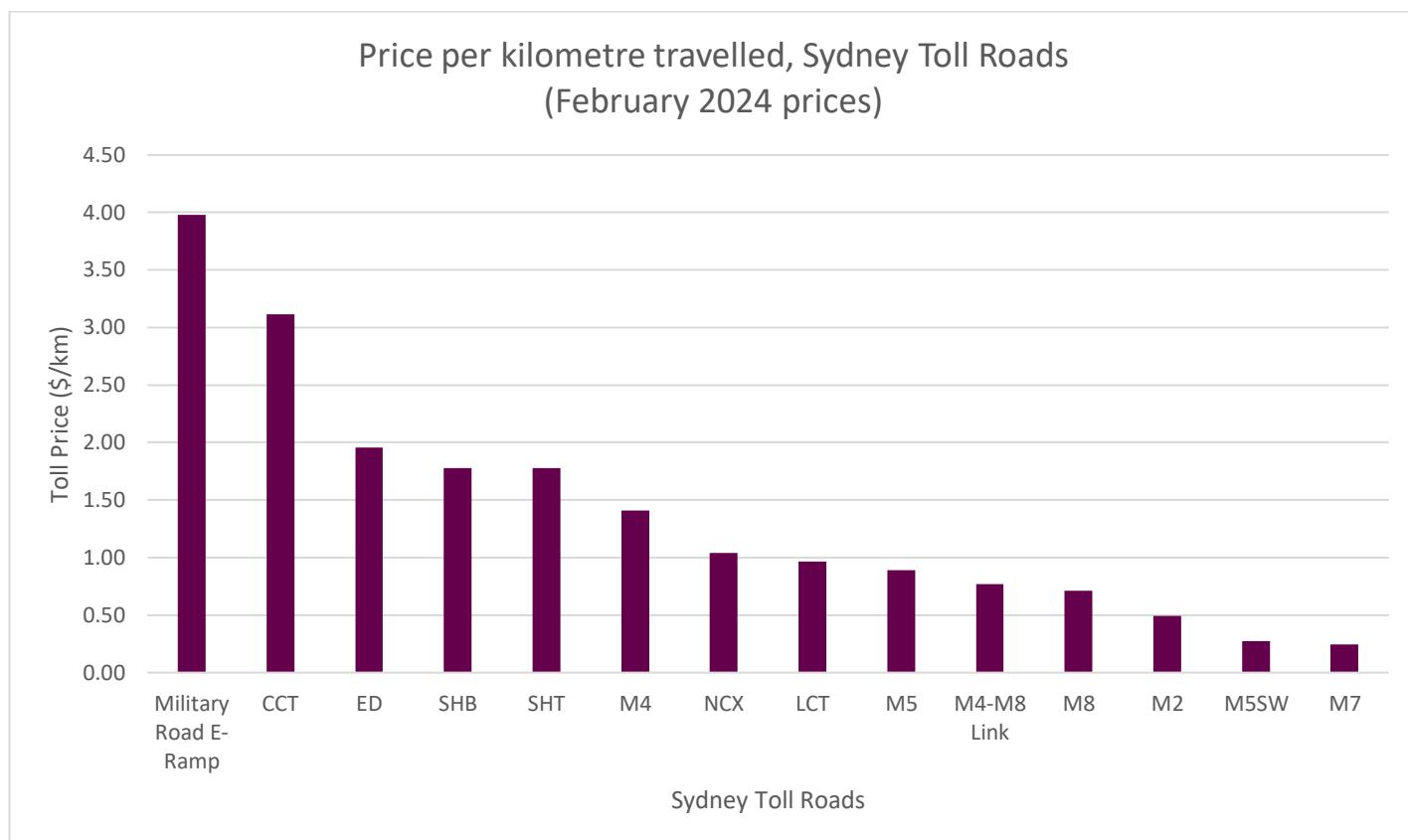
Infrastructure Partnerships Australia: ‘The result is inconsistent and ultimately inefficient road network pricing, which is deeply unfair for some transport users who face disproportionate transport costs. This approach may also provide perverse incentives for other users to opt for private vehicles when other transport options may be better serve their needs and free up road space for those who need it. The result is more congestion, pollution and frustration for all.

The differential pricing regimes across the network also gives rise to issues of equity where motorists using different sections of the network pay vastly different sums for similar functionality.’

Source: Public Consultation Summary Report, 2023 Independent Toll Review, August 2023 and Stakeholder Submissions, 2023

This is illustrated in Figure 4.3, which shows the range of different per-kilometre prices across the Sydney Toll Road network.

Figure 4.3: Price per kilometre travelled, Sydney Toll Roads (February 2024 prices)



Source: Independent Toll Review

Methodology: This price per kilometre charge on each toll road assumes the maximum distance has been travelled on the toll road (and therefore the maximum toll price is payable by the motorist.) This maximum toll price includes a flagfall if applicable. The current toll price was divided by the maximum tollable length of each toll road (i.e. the distance between the furthest two toll entry/exit points).

Motorcycles and towed caravans

Currently motorcycles pay the same toll as cars and cars towing caravans can fall into the Class B category. Numerous submissions to the Review considered the current toll prices for towed caravans and motorcycles to be unfair as they are paying the same price as a higher mass/size vehicle for the same journey.

For example, the NRMA submission observes ‘the NRMA supports a review of vehicle classifications and tolls associated with two-wheeled vehicles. It is widely acknowledged that toll pricing considers the costs associated with road wear and tear, however vehicle classifications and tolls across motorways in Sydney do not currently suitably consider lighter weight, two-wheeled vehicles. Tolling networks in Victoria and Queensland charge motorcycles half that of a regular passenger light vehicle, and tolls in Sydney (e.g. Sydney Harbour Bridge) have, historically, been lower for motorcycles’.³⁰

To some extent the Government has recognised this unfairness by offering the Large Towed Recreational Vehicle Toll Rebate and the E-Rider tolling product for motorcycles using the Sydney Harbour Bridge and Tunnel.

Figure 4.4: Stakeholder perspectives on motorcycle and caravan pricing

³⁰ NRMA submission. (2023, August). Independent Toll Review.

‘As a motorcycle riding a bike less than ½ weight of the smallest car and far less damage to the road why should I have to pay the same as cars.’

‘The cost to take a caravan on the tollway is the same as a B Double Semi weighing around 10 times heavier than a car-caravan combination. This does not seem fair as weight is a major factor in road damage.’

‘I feel charging caravans as heavy vehicles is wrong. We are not heavy vehicles and chewing up roads like trucks. We are also not a business, and most are retired self funded retirees or pensioners.’

Source: Public Consultation Submissions to the Review

Tolls are unduly discouraging use of the motorways by small trucks

A two-axle rigid truck which just exceeds 2.8 metres in height is charged the same toll as a heavy vehicle. This is discouraging use of the toll road network by smaller trucks where alternative routes are readily available.

Stakeholders shared perspectives with the Review that Class B are avoiding toll roads, especially since the introduction of the M5 East toll as part of WestConnex. Smaller trucks tend to have lower operating costs and consequently obtain reduced benefits from travel time savings when using the toll roads. This diversion generates significant costs including increased noise, emissions, reduced safety, and increased travel times on alternative routes. Examples of stakeholder comments are in Figure 4.5.

Figure 4.5: Stakeholder perspectives on heavy vehicle impacts under the current pricing regime

‘All the trucks that are avoiding toll roads are causing damage to residential roads and causing major traffic delays.’

‘Truckies are avoiding using the M8.’

‘Stop the trucks from using Stoney Creek and Forest Roads, Bexley to avoid the toll.’

Source: Public Consultation Summary Report, 2023 Independent Toll Review, August 2023 and Stakeholder Submissions, 2023

The Government has recognised the specific problems created at Stoney Creek and Forest Roads (alternative route to tolled M8 and M5 East) by introducing a temporary Truck Multiplier Rebate scheme. Under the Truck Multiplier Rebate, motorists can claim a rebate of a third of their toll on Class B vehicle trips on the M5 East and M8. A more sustainable longer-term solution would be to ensure that appropriate tolls are set for smaller trucks.

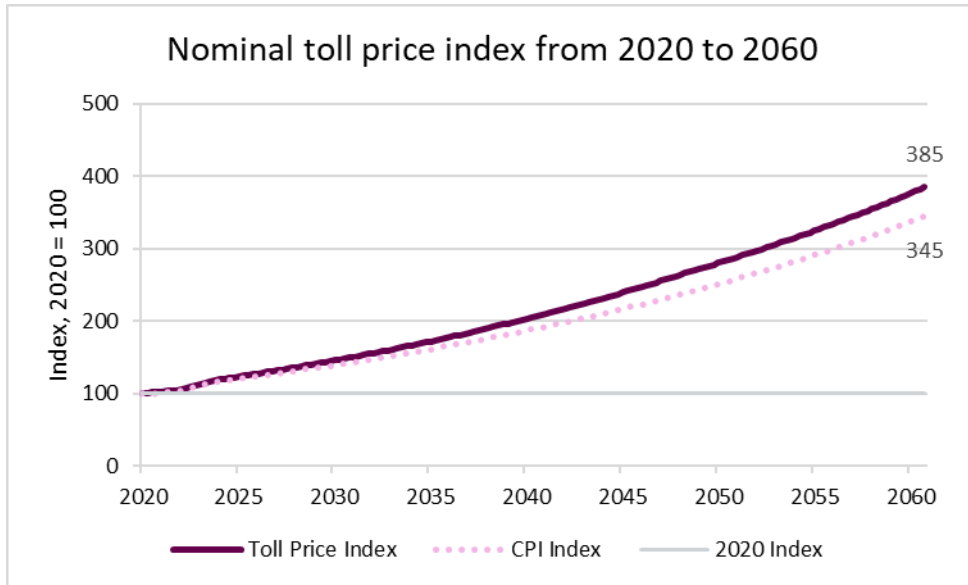
Finding 6: Tolls are too rigid and are locked-in for decades without options for review

The level of tolls increase according to the provisions of the particular concession agreements, and do so at a rate that is generally ahead of the consumer price index (CPI). This means that toll costs for motorists in general are growing faster than other expenses and wages.

As Figure 4.12 illustrates, 86 per cent of respondents strongly agreed or agreed with the statement ‘the financial burden of toll fees has increased over time’. This result likely reflects the interaction of two factors - the relative cost of toll increases and the expansion of the tolled motorway network.

This is illustrated in Figure 4.6, which compares a price index comprised of all the toll roads in Sydney (with equal weights) to the CPI.

Figure 4.6. Price index for toll roads (index =100 in 2020)



Source: Independent Toll Review.

Notes:

- CPI from 2024 onwards assumed at 3 per cent (top of RBA target range)
- AWE from 2024 onwards assumed at 3.57 per cent (the 20 year average)
- maximum price used for all toll roads with distance-based pricing
- all toll roads with multiple exits are averaged into one escalation figure
- all toll roads are weighted equally
- tolls removed from toll price index at concession expiry.

The basis of toll price increases may contribute to perceptions of ‘unfairness’

Toll prices increase according to the terms of concession agreements, which set out the maximum toll the concessionaire can charge at a given point in time. The concession agreement includes a pricing schedule that is agreed upfront, which applies starting toll rates and a formula for increasing tolls over the concession term. As noted by Professor Martin Locke at a public hearing session:

‘When a toll road contract is negotiated, a base case financial model becomes the foundation of the agreement. In simple terms, the financial model projects costs and revenues over the entire term of the concession and it calculates a return on equity as the key output, the concession forecast revenue based on patronage assumptions and the prescribed toll and escalation provisions’.³¹

The pricing of regulated monopoly infrastructure assets is typically adjusted based on the Consumer Price Index (CPI), or CPI minus an X factor (CPI -X) relating to productivity improvement, such as energy and water. This approach aims to safeguard consumers and motivate regulated companies to enhance operational efficiency. The escalation by CPI also makes these infrastructure assets appealing to investors who want inflation protection, for

³¹ Independent Toll Review. (2023, July). Public Hearing Transcripts.

example superannuation funds. In inflationary environments where prices are rising, such investors benefit from the protection of CPI-linked pricing.

For most of Sydney's toll road concessions, toll escalation is linked to the CPI, often with a 'floor', preventing prices from decreasing when CPI is negative (as happened during COVID-19).

For WestConnex (M4, M5 East, M8, M4-M8 Link, Rozelle Interchange), toll escalation is steeper, the greater of 4 per cent per annum or CPI, meaning in some years tolls on WestConnex have grown ahead of CPI. WestConnex is a large part of the network, accounting for about 25 per cent of revenue in 2022, so the impacts are tangible to many motorists. The arrangements for individual roads are set out in Figure 2.3.

As Figure 2.3 shows, price escalation is quarterly for Sydney's toll roads (ED, CCT, Hills M2, LCT, NorthConnex, M5 South-West).³² Quarterly adjustments to prices mean that when CPI is increasing, as it has since mid to late 2021, motorists experienced higher prices more quickly due to quarterly toll adjustments (compared to annual). Annual toll adjustments may provide increased pricing certainty for motorists, but potentially involve larger 'one-off' adjustments when the tolls adjust at the end of the year.

The impacts of toll price increases on motorists

The observed strategy of toll road operators has been to charge the maximum tolls permitted under their contracts. This approach is based on their objective to enhance revenue streams and suggests motorway operators assess that a sufficient number of drivers continue to find value in using these tolled routes and are able to pay the increased toll fees.

As the Toll Survey responses to the question 'are toll prices too high' indicate, toll price increases may have undermined the value of using tolled motorways for other groups of motorists. They may be less able to absorb price increases, especially when wage growth is slower than CPI. The economic conditions since 2021 have made price impacts more acute. This period has been characterised by high CPI growth (with corresponding high toll price escalation), which has outstripped growth in wages and average weekly earnings. This is also reflected in the feedback from public consultation, excerpted in Figure 4.13, where the level, setting and escalation of tolls was raised as the most common issue.

Under the current arrangements, toll prices will continue to escalate without review

In general, there is no mechanism to change toll price levels or escalation if they become inappropriate over time. There is limited scope to change tolls, if as the Toll Review Survey and other research shows, motorists perceive tolls as too high, or as the network, land use and transport patterns evolve. Concessionaires could submit a proposal to amend the concession agreement if they wanted to change tolls. However, as Transurban noted in its 2017 submission to the NSW Legislative Council Inquiry into Road Tolling:

'Beyond the initial agreement there is no pricing flexibility in the concession. Any revision to pricing requires a renegotiation of the concession agreement, and the only circumstances in which this has taken place has been in the context of major enhancements and upgrades to the network.'

This differs from the approach for most public utilities, where economic regulation often allows for periodic review (every 4-5 years) of prices, for example energy and water. For example, such a review could consider toll prices in the context of current economic conditions or objectives relating to network efficiency and fairness. By

³² Notable exceptions include the Sydney Harbour Bridge which is managed by government

contrast, in the current arrangement toll prices will continue to increase, at rates agreed sometimes decades earlier and not taking into account present day or future conditions.

The future burden of tolls on motorist is significant

According to models developed by Treasury and Transport for NSW, using a conservative set of assumptions, motorists will face a toll burden estimated at \$123 billion in today's dollars over the next 37 years to 2060.³³ \$64 billion of this is from WestConnex alone. Figure 4.7 details the breakdown of the forecast toll burden by toll road:

Figure 4.7. Toll burden

Toll Road	Toll Burden from 2024-2060
M2	\$15.95 billion
M5 South-West*	\$18.87 billion
Lane Cove Tunnel	\$3.75 billion
Cross City Tunnel	\$1.25 billion
Eastern Distributor	\$6.09 billion
M7	\$20.05 billion
NorthConnex	\$5.80 billion
Sydney Harbour Bridge/Sydney Harbour Tunnel	\$4.01 billion
WestConnex M4	\$24.60 billion
WestConnex M5 East and M8	\$18.30 billion
WestConnex M4-M8 Link	\$3.37 billion
M6 Stage 1	\$0.62 billion
Western Harbour Tunnel	Assumed as part of SHB/SHT
Total	\$122.66 billion

* The M5 South-West will be incorporated into the WestConnex M5 East and M8 concession from December 2026, but has been kept separate in Figure 4.7.

Source: Independent Toll Review.

Given the significant amount projected to be paid in tolls, and the length of time motorists will be paying tolls for, it is crucial to ensure that there are opportunities to review tolls and confirm that their levels are appropriate.

³³ Treasurer & Minister for Transport. (2023, November 13). Sydney's combined toll bill is \$120 billion-plus to 2060. NSW Government. <https://www.nsw.gov.au/media-releases/sydney-toll-bill>.

Finding 7: On most toll roads, time-of-day pricing is not used to improve traffic management

Currently only the Sydney Harbour Bridge and Tunnel have variable tolls. The tolls for all other toll roads do not change based on actual demand for the road or time-of-day. We see not having the ability to set variable tolls for other roads as a potential source of inefficiency.

When utilisation of toll roads is low there are strong economic grounds for setting tolls at lower levels to attract further traffic away from untolled alternatives. However, the financial incentives for concessionaires conflict with the more important objective of optimising use of the transport network. Lowering tolls when a toll road is underutilised will increase traffic volumes on the road, however, it will decrease revenues overall (in economic terms, demand is price inelastic). The changes in operations and maintenance costs to the concessionaire from changed traffic volumes is not material.

On the other hand, if a road is congested, there is a case for rationing demand by raising tolls for a time to ensure traffic can flow more freely. While this makes sense from an efficiency perspective, it may not be perceived as fair by all motorists. It would mean that some motorists pay more than the normal toll in order to meet their expectation of travel times. Other motorists who consider it to be unfair that they do not receive the level of service they expect when the road is congested are likely to be less concerned. Raising tolls in this way is currently precluded by the PPP agreements which set maximum tolls.

Peak and off-peak tolls are currently only set for the Sydney Harbour Bridge and Sydney Harbour Tunnel. The toll price varies by up to \$1.60. This variation may now be too small to influence travel choices, particularly for this corridor with limited untolled arterial road alternatives. The variation is small because Sydney Harbour Bridge and Sydney Harbour Tunnel tolls have only increased once (by 6.8 per cent) in the last 14 years. The impact of variable pricing for the Sydney Harbour Bridge and Tunnel is further diminished by the lack of heavy vehicle multiplier on these toll roads. The difference of up to \$1.60 applies to all vehicles.

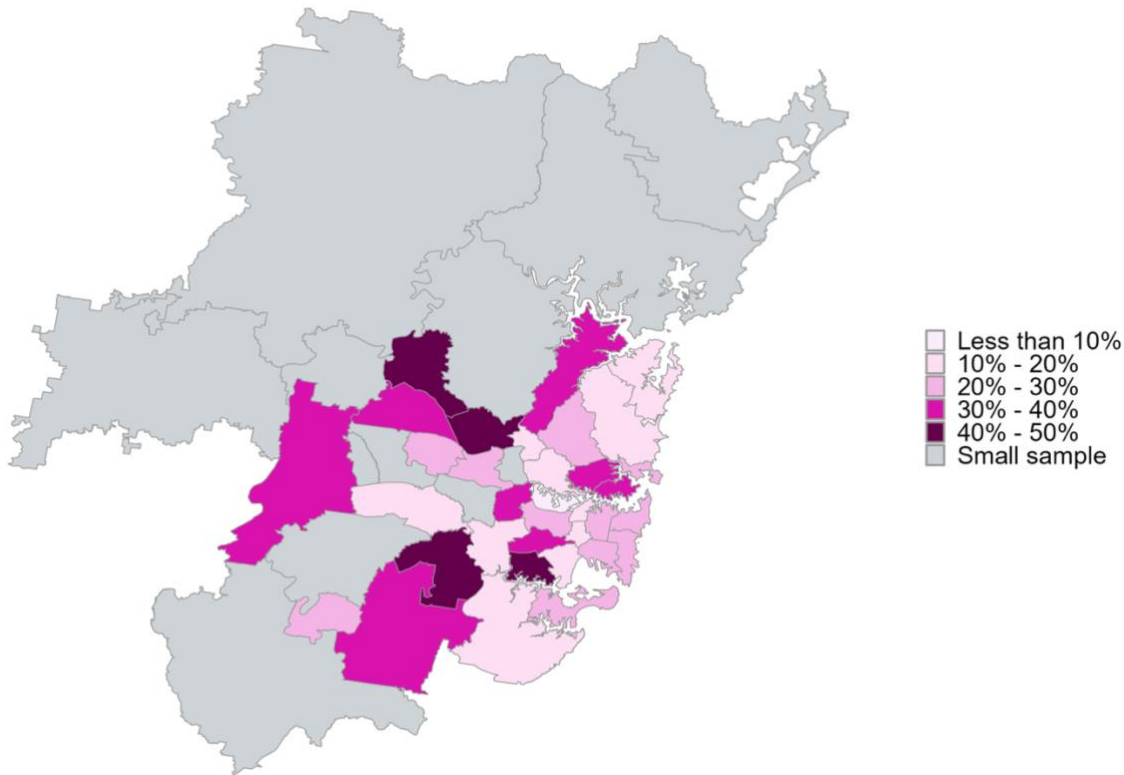
Finding 8: The financial impact of tolls is greatest in Western Sydney

The current structure of tolls is producing inequitable results, with motorists from Western Sydney spending the most and having fewer alternative options. We refer to Western Sydney broadly - including the North-West and South-West.

Western Sydney suburbs have the highest number of motorists who spend over \$60 per week on tolls and will be eligible for the Government's new \$60 Weekly Toll Cap.³⁴ Service NSW estimates 60,000 motorists in Lakemba, Kellyville, Baulkham Hills, Winston Hills, Greystanes, Moorebank and Blacktown will be eligible for rebates under the policy.³⁵

The Toll Review Survey also asked toll road users about weekly spend, with response options ranging from \$0 to >\$200 per week. The survey found that around 74 per cent spend less than \$20/week, around 16 per cent spend between \$20-\$49.99/week, around 7 per cent spend between \$50-\$99.99/week, and only around 3 per cent spend over \$100/week.

Figure 4.8: Share of toll road users that spend \$20 or more per week, by Statistical Area Level 3



Source: Independent Toll Review Survey

As Figure 4.8 illustrates, of motorists surveyed who used toll roads, 40 to 50 per cent of toll road users in Rouse Hill-McGraths Hill, Baulkham Hills, Liverpool, and Hurstville spend \$20 or more a week on tolls.

³⁴ Minister for Roads (2023, December 8). \$60 weekly toll cap to provide cost of living relief to 720,000 motorists. NSW Government. <https://www.nsw.gov.au/media-releases/toll-cap-cost-of-living-relief>.

³⁵ Service NSW. (2024, January 1). Cost of living support starts today with \$60 toll cap for 720,000 motorists. NSW Government. <https://www.service.nsw.gov.au/news/cost-of-living-support-starts-today-with-60-toll-cap-for-720000-motorists>.

The DCS survey also found that Western Sydney residents who used toll roads more than once a month had a high claimed monthly spend. Residents in Blacktown, South West, and Parramatta who used toll roads more than once a month (respectively 37 per cent, 53 per cent and 45 per cent of those surveyed) spent respectively \$95.90, \$87.63 and \$84.35 a month on average. This was higher than the Greater Sydney average of \$60.70 spent by motorists who used toll roads at least once a month.

In their submissions to the Review, Councils located within Western Sydney outlined the unique financial and geographical disadvantages their constituents experience with toll roads in comparison to those in other parts of Sydney, who are generally less reliant on toll roads. The financial burden of tolls for Western Sydney, the Councils argued, is impeding equitable access to infrastructure, jobs and services.

Figure 4.9: Stakeholder feedback on geographic advantage/disadvantage in relation to toll roads

The Hills Shire Council: 'Hills residents shouldn't be consigned to paying higher tolls simply because the NSW Government has not historically delivered sufficient development outcomes or transport networks in the metropolitan Sydney region, forcing residents to commute further to work'.

NRMA: 'Primarily due to geographic location, NRMA members in Western Sydney ... the Southwest, Northwest and the Blue Mountains feel most disadvantaged by toll roads'.

Western Sydney Regional Organisation of Councils Ltd: 'With relatively fixed capacity to pay, people make trade-offs which (in general) see those with the least capacity to pay for homes (on land) forced to accept the compromise of less amenity (i.e. distance from the CBD and in Sydney's case the harbour and the coast) in order to get cheaper land. The workplaces which can afford the highest rents inevitably offer high value jobs and are located close to CBDs ... Those with the least capacity to pay, who have been forced to compromise with the lowest cost homes located furthest from the CBD are subjected to the highest costs to travel to gain high value employment closest to Sydney CBD'.

Transport Workers' Union: 'While Transurban and the previous NSW Government maintain that free alternative roads are available for travel to, from and between Western Sydney, too often small business operators in transport have little choice in using toll roads, typically due to variables beyond their control, such as a run which cannot be completed within the allocated timeframe through the use of free alternative routes'.

Source: Public Consultation Summary Report, 2023, Independent Toll Review, and Stakeholder Submissions, 2023

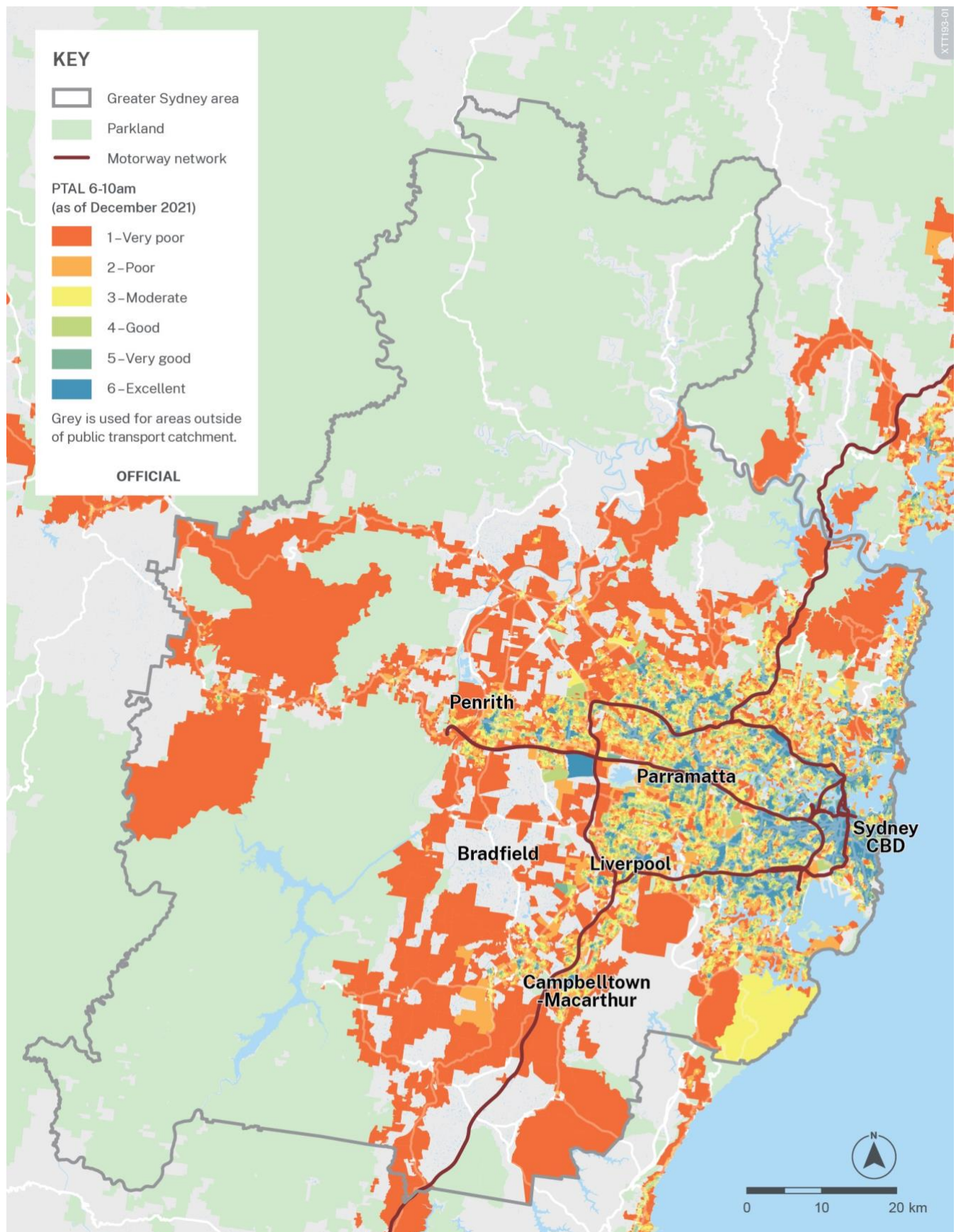
Public transport alternatives to toll roads vary by geography

Public transport access is important as it offers individuals a viable alternative to toll roads.

The Public Transport Accessibility Level (PTAL) measures public transport accessibility based on walking distance and travel time to nearby stops, frequency of services at each stop, and proximity to major rail stations.³⁶ Figure 4.10 shows strong access to public transport in the Sydney central business district (CBD) and densely populated urban zones. Public Transport Accessibility Levels tend to reduce as you move away from the Sydney CBD and key hubs such as Parramatta, Chatswood and Liverpool.

³⁶Open Data. (2023, August 21). PTAL (Public Transport Accessibility Level). [PTAL \(Public Transport Accessibility Level\) - Dataset - TfNSW Open Data Hub and Developer Portal](#).

Figure 4.10. Public Transport Accessibility Levels, Sydney, 6-10am



Source: Transport for NSW

Some drivers do not perceive any other feasible transport alternatives to toll roads

Although the 2014 Principles include a policy position for new toll roads that untolled alternative arterial routes remain available for motorists, this is not the perception of some motorists. For example, Transurban's submission to the Independent Toll Review included survey research indicating that 11 per cent of respondents in Sydney use toll roads because 'there are no other available transport options, like untolled roads and public transport'.³⁷

This result came back slightly higher for the Independent Toll Review Survey, which surveyed a representative sample of drivers across Greater Sydney, with 14 per cent of toll road users saying they use toll roads because they have no other feasible transport options. The NRMA Survey found 20 per cent of toll road users use toll roads because they have no other option.

The Independent Toll Review Survey found that these users reporting no other feasible transport options are most likely to live in the Northern Beaches, City and Inner South and predominately use the Sydney Harbour Bridge and Sydney Harbour Tunnel. This aligns with the NRMA survey, which found that, within Sydney, these users are most likely to live on the Northern Beaches. These results may reflect the importance of tolled harbour crossings. However, as Figure 4.10 shows, these areas have relatively strong public transport options.

Of some concern is the Rouse Hill-McGraths Hill region in Sydney's North-West, where more than 20 per cent of toll road users reported having no feasible transport options as this result overlaps with relatively high usage and toll expenses, and lower public transport access levels.

Finding 9: The level of tolls appears to be higher than necessary and desirable

After closely examining the evidence available to us, we consider the level of tolls in Sydney appears to be very high. This finding is based on a range of factors.

First, there has been no competitive bidding for toll road PPPs on the basis of lowest toll. This factor is discussed above in Chapter 3.

Second, concessionaire agreements appear to build in relatively high returns. There are no public reporting requirements on concessionaire special purpose vehicles which would have allowed us to make definitive conclusions about their profitability (see Finding 1). However, we can see:

- The concessionaires would have access to debt finance at lower interest rates than assumed when toll prices were set for many of the current toll roads.
- The current toll road PPPs shift traffic demand risk to the concessionaire. The concessionaires will have demanded a higher rate of return in order to take this risk. This therefore puts upward pressure on the toll price, downward pressure on the upfront payment to government when bidding on the PPP, or a combination of both.
- There is no requirement for concessionaires to pass on the benefits of efficiency gains to motorists in the form of lower tolls.
- Concessionaires enjoy a regulated monopoly price, safe from competitive challenge. They are free from the threat of competitors coming in at a lower price.
- Investors continue to see toll roads as attractive, with S&P Global recently saying:

³⁷ Based on Transurban commissioned research, conducted by Nature, 1,008 respondents across Sydney, July 2023.

‘Australian toll roads are a particular beneficiary of high inflation, given tolls are linked to inflation and the historically low elasticity of traffic to price increases’³⁸

Third, many of the current toll road PPPs were established with the objective of ‘no net cost to Government’. Despite moving away from this as an explicit policy objective, toll roads in New South Wales are still more or less 100 per cent funded through tolls, despite the fact benefits flow to the broader community (non-drivers); refer to finding 2. The tendency for Government to minimise their own net contribution to toll roads has meant a larger per centage of the cost has to be recovered from user charges and, therefore, tolls are higher than they would otherwise be.

Fourth, the overall toll burden is high at \$122.66 billion (see Figure 4.7). The toll bill from WestConnex alone, is \$64 billion out to 2060.³⁹

Fifth, the pattern of congestions across Sydney shows toll roads are relatively free-flowing and potentially under-utilised (discussed further below).

Sixth, motorists overwhelmingly perceive that tolls are too high (also discussed further below).

Motorists perceive tolls are too high

Considering the questions of how motorists perceive value for money, and fairness, the Review’s public consultation process suggests that Sydney drivers and other stakeholders are dissatisfied with the current state of toll roads in New South Wales. This sentiment was backed up by the findings of three separate surveys of motorists—the Independent Toll Review Survey (Toll Review Survey), the Department of Customer Service (DCS) Survey, and the NRMA Survey.

³⁸ Timbs, R., Anne Low, M., Fung, K., Vora, MN., Jia Ong, C., Wu, Y, Endo, S, Tanaka, S., & Kim, T. (2023, November 28). Asia-Pacific Transport Infrastructure 2024 Outlook: Capex Is Becoming A Credit Driver. S&P Global. <https://www.spglobal.com/ratings/en/research/articles/231128-asia-pacific-transport-infrastructure-2024-outlook-capex-is-becoming-a-credit-driver-12920916>.

³⁹ Treasurer & Minister for Transport. (2023, November 13). Sydney’s combined toll bill is \$120 billion-plus to 2060. NSW Government. <https://www.nsw.gov.au/media-releases/sydney-toll-bill#:~:text=Sydney%20motorists%20are%20on%20the,Transport%20for%20NSW%20has%20established>.

Figure 4.11: Three separate surveys asked NSW residents around their perceptions and use of toll roads

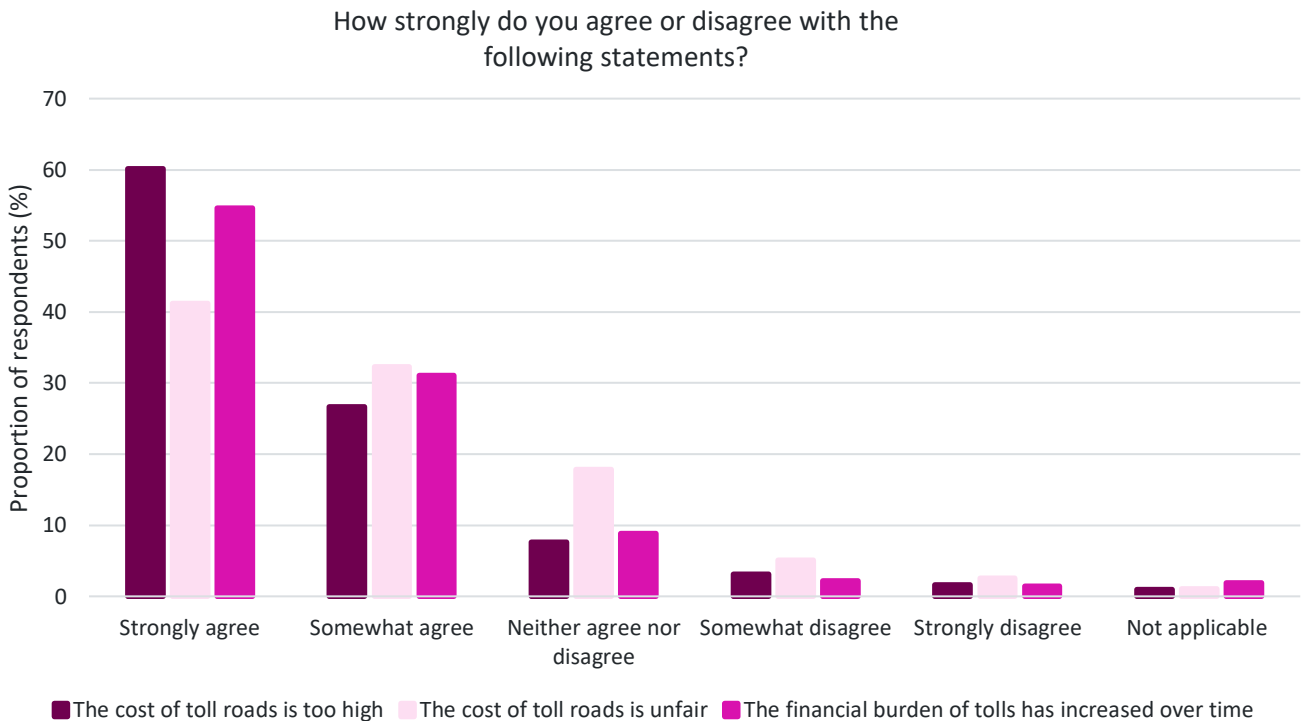
Three separate surveys asked NSW residents about their perceptions and use of toll roads. These were:

- The Independent Toll Review Survey was an online survey of around 1,500 Sydney residents aged 18 years and over who hold a drivers’ licence, including both users and non-users of toll roads. The responses were collected across a representative sample of households across Greater Sydney, to account for any geographical differences. The survey was conducted in October 2023 by an independent market research company. See Toll Survey Appendix D for further details on the survey methodology and findings.
- The DCS Survey was an online survey of around 1,100 NSW residents aged 18 years and over, sourced from professional market research panels. The data is weighted to 2021 ABS Census population data to be representative of people aged 18+ who reside in NSW for age, gender and location. The survey was conducted in September and October 2023 as part of the fortnightly DCS Customer Sentiment Survey series.
- The NRMA Survey was an online survey of around 4,500 NRMA members across New South Wales and the Australian Capital Territory. The survey was conducted in August 2023.

Source: Independent Toll Review

A key finding of the Toll Review Survey is that most drivers think toll costs are too high and unfair, as illustrated in Figure 4.12.

Figure 4.12: How strongly do you agree with the statements ‘The cost of toll roads is too high’, ‘The cost of toll roads is unfair’, and ‘The financial burden of tolls has increased over time’



Note: Question was asked to all participants (N = 1,544)

Source: Independent Toll Review Survey 2023.

As Figure 4.12 details, 87 per cent of Sydney residents strongly or somewhat agree that the cost of toll roads is too high and 73 per cent agree that the cost of toll roads is unfair. This aligns with the DCS Survey, which showed that 82 per cent of NSW residents strongly or somewhat agree that the cost of toll roads is too high, and 70 per cent agree that the cost of toll roads is unfair. The survey findings were overwhelmingly echoed in the sentiment from public consultation, detailed in Figure 4.13.

Figure 4.13: Toll prices

The most common issue raised in submissions from the public was the overall level and setting of toll prices. This also included discussion of administrative fees and charges, including fines, and regular toll price escalation.

The overwhelming sentiment was that tolls in New South Wales are too expensive, particularly in light of cost-of-living pressures, high taxes - including fuel excise taxes, other costs associated with vehicle ownership including insurance, maintenance and registration; the regularity of toll increases; inequitable social outcomes arising from the overall toll pricing regime; and how the expensive nature of tolls drives user behaviour (e.g. motorists being forced to avoid using toll roads altogether due to prohibitive prices).

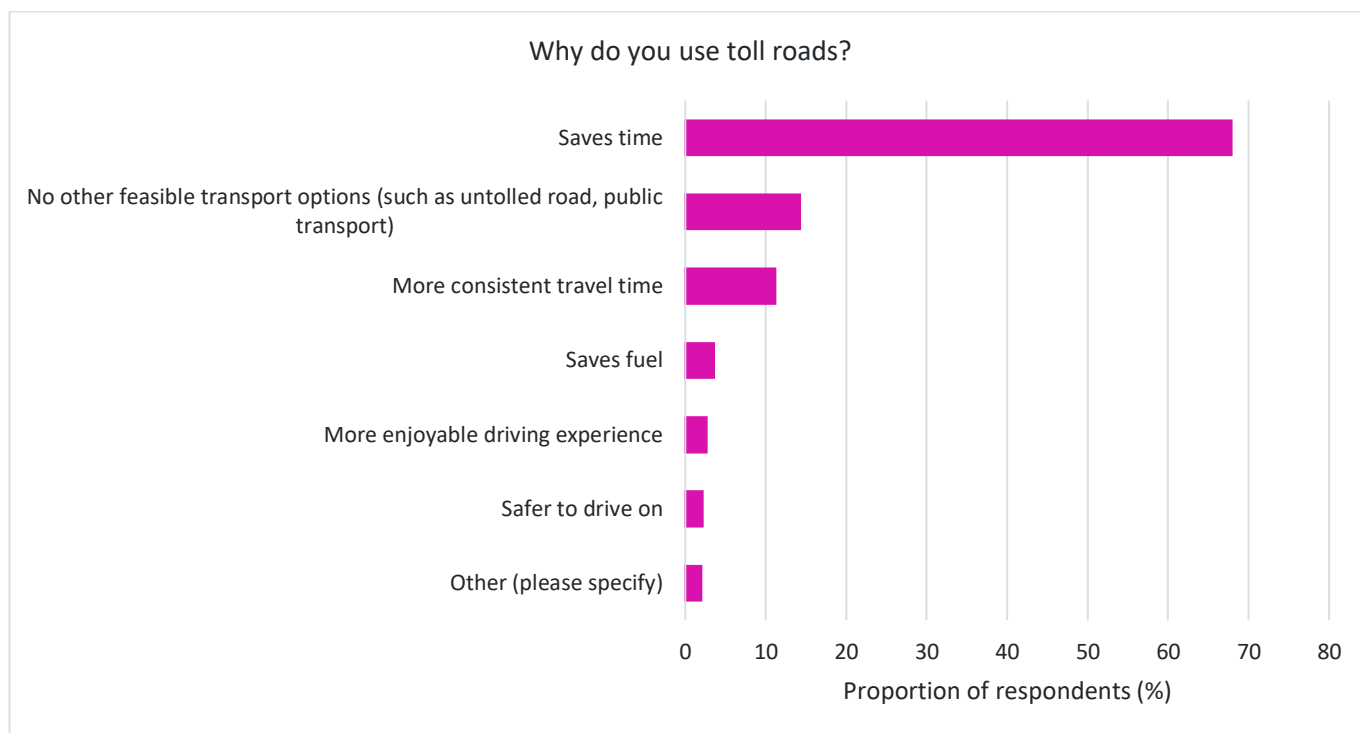
Associated commentary from the submissions:

- 'Motorways are supposed to be a convenient means to travel long and complicated distances, and the current toll rates are hindering this.'
- 'The current toll charges are absolutely unfair for common and regular commuters.'
- 'The taxes we pay on car rego, licences and petrol are supposed to be going to building and maintaining our road networks, but either this isn't happening, or the government and residents are being ripped off.'
- 'Public roads should not be tolled at all. We are already charged so many times to use our cars and pay for the roads.'
- 'The government really needs to understand how much we are struggling. We don't just have money in our savings anymore.'
- 'I'm a low-income earner, working school hours to keep a roof over my kids' heads. Last financial year I paid over \$2400 in tolls, I worked a month to pay to sit in slow moving traffic.'

Source: Public Consultation Summary Report, 2023 Independent Toll Review

In terms of why motorists use toll roads, most Toll Review Survey respondents indicated that toll roads save time, as detailed in Figure 4.14.

Figure 4.14. Toll Review Survey - responses to 'Why do you use toll roads?'



Note: Question was only asked to participants who incur toll expenses (N = 1,404)

Source: Independent Toll Review Survey 2023

As Figure 4.14 shows, travel time consistency, fuel savings, enjoyable driving experience and safety were also nominated as reasons. These all relate to the 'value' that toll roads are designed to deliver. Notably, 14 per cent of respondents indicated 'no other feasible transport options', which is discussed further in Finding 7.

While other surveys use different methodologies, complicating comparisons, travel time savings are a prominent reason motorists provided for using toll roads in NRMA⁴⁰ and Transurban⁴¹ market research.

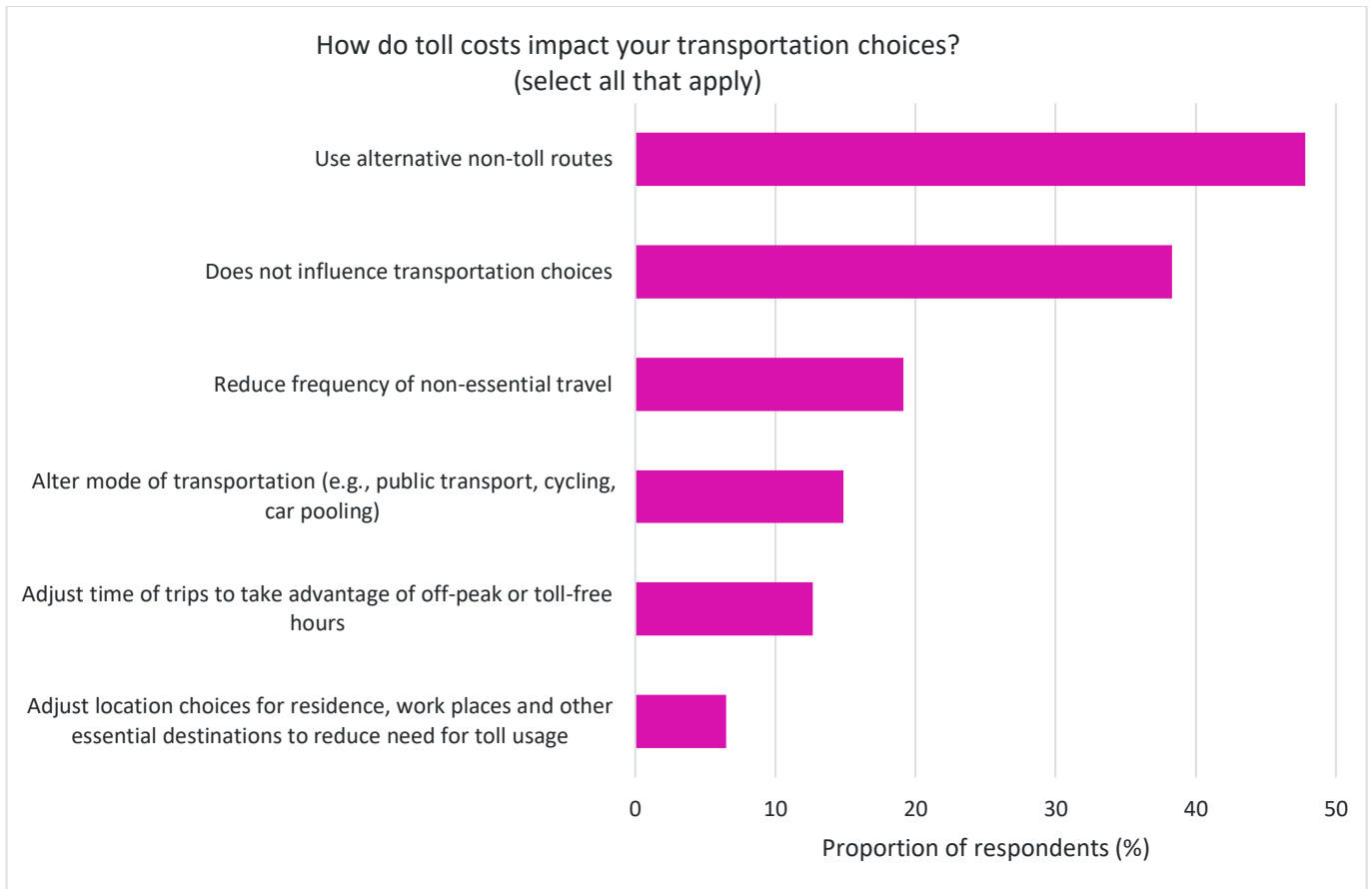
The DCS Survey had a different structure, not asking why respondents used toll roads, but asking them to agree (or disagree) with statements relating to toll roads. Of respondents, 62 per cent agreed or strongly agreed that 'toll roads save time', 49 per cent that 'toll roads are effective at easing traffic congestion', 45 per cent that 'toll roads provide a superior driving experience' and 43 per cent that 'using toll roads reduces fuel consumption and emissions'. Despite this recognition of benefits, only 28 per cent agreed or strongly agreed that 'using toll roads is worth the cost involved'.

Public consultation indicated that high toll costs are impacting transportation choices, including by driving traffic onto alternative non-toll routes. The Independent Toll Review Survey found that 51 per cent of people who do not use toll roads do so because toll costs are too expensive. It also found that most toll road users alter their transportation choices in response to toll costs, as illustrated in Figure 4.15. The most common way they do this is by using alternative non-toll routes and reducing the frequency of non-essential travel.

Figure 4.15. How do toll costs impact your transport choice? (select all that apply)

⁴⁰ NRMA Toll Survey, August 2023. The NRMA survey asked respondents to 'choose our top two reasons as to why you use toll roads' and then presented results across six categories, including 'I have no other option'. The number of respondents for the question was 701.

⁴¹ Transurban, Urban Mobility Trend report, August 2023. Respondents were asked 'why they use toll roads, such as those managed by Transurban as well as other operators'. Respondents were given nine response options, and looking at the structure of the responses, it's likely that they were asked to identify all that applied, or their top two or three motivations.



Source: Independent Toll Review Survey

The survey results in Figure 4.15 relating to the use of alternative untolled routes aligns with the August 2023 NRMA Survey, which found that 39 per cent of members residing in Sydney think local traffic has increased in their area in the last year due to toll road avoidance. For the Western Sydney areas of Canterbury-Bankstown, Liverpool, Blacktown, and Cumberland, more than 60 per cent of NRMA members believe this to be true.⁴²

Toll roads have not overcome Sydney’s congestion problem, in part because of high tolls

Despite the extensive toll road construction program in Sydney of the past three decades, extensive congestion problems still appear to be evident. Informed traffic commentators rate Sydney as the most congested capital city in Australia and place the city at a relatively high ranking globally.

INRIX Global Traffic Scorecard provides congestion rankings for 1000 cities in over 50 countries. It calculates commute times to and from major employment centres in urban areas. Anonymised GPS probe data is used to identify the most frequented routes and destinations in the urban area. Time lost is calculated by comparing travel times of drivers during peak periods with free-flow, off-peak periods. There is a weighting for city size.

London was considered the most congested city with the average driver having lost 156 hours due to congestion in 2022. Chicago (155), Paris (138), Boston (134) and New York (117) were the other top five ranking cities.

Sydney was the highest ranked Australian city at 46 with the average hours lost being 62, up by 19 per cent from the previous year, but still down by 48 per cent since 2019. Melbourne’s ranking was 62, with 54 hours lost, still 17 per cent below 2019; Perth was ranked 121 with 42 hours lost; Adelaide was ranked 156 with 38 hours lost; and Brisbane was ranked 165 with 36 hours lost. Congestion levels in Perth, Adelaide and Brisbane had all increased since 2019.

⁴² NRMA. (2023, August). Tolling Survey Results.

TomTom also provides an analysis of traffic based on anonymously collected data from drivers covering the complete road networks of major cities across the world. Its most recent 2022 Report also reported Sydney as being the most congested city in Australia. For example, on average it took 21 minutes thirty seconds to drive 10 km in the city centre, which was an increase of 30 seconds from the previous year. It was 10 minutes more to drive this distance in the afternoon peak period. Sydney was ranked number 52 in the TomTom World Traffic Index which covered 390 cities across 56 countries. London was again the highest ranked city (36 minutes 20 seconds). Melbourne had an average city centre 10 km travel time of 21 minutes (world ranking 59) while Brisbane had an equivalent travel time of 17 minutes (world ranking 111).

Comparing traffic speeds on toll roads and untolled roads to understand network use

Planners and policymakers use traffic speed maps to understand traffic flow patterns in a city. Traffic speed maps provide visual representations of the speed of traffic flow on roads and highways at a given moment or over a specified period. Traffic speed maps indicate areas with slow moving or standstill traffic compared to potential speeds during free-flowing conditions, and highlights congestion.

Congestion is a concern, because it increases overall travel time, reduces journey time reliability and increases vehicle operating costs (for example fuel). Congestion can reduce the number or distance of trips that motorists are prepared to make, with consequences for their social and economic participation. For example, congestion may discourage individuals from accepting new job opportunities due to prolonged commutes. Congestion can also increase operating costs for businesses that are then passed on to consumers. Finally, congestion has been found to increase the risk of road accidents and environmental pollution.

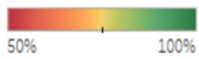
In the context of the Toll Review, an analysis has been done of traffic speeds on the motorway network (including toll roads) as compared to other major roads to understand if there are opportunities to re-distribute traffic patterns, for example, by changing the level or price structure of tolls.

An operating speed ratio is a metric used to assess congestion levels on the motorway network. It is calculated by dividing the mean speed of traffic (average speed of vehicles on a particular road during a specific time period) by the free-flow traffic speed (speed at which vehicles would travel in the absence of congestion or other disruption). By using the operating speed ratio as a proxy for congestion, we can identify areas with higher congestion levels. The lower the operating speed ratio, the more significant the congestion. i.e. slower travel speeds suggest higher levels of congestion on the road network.

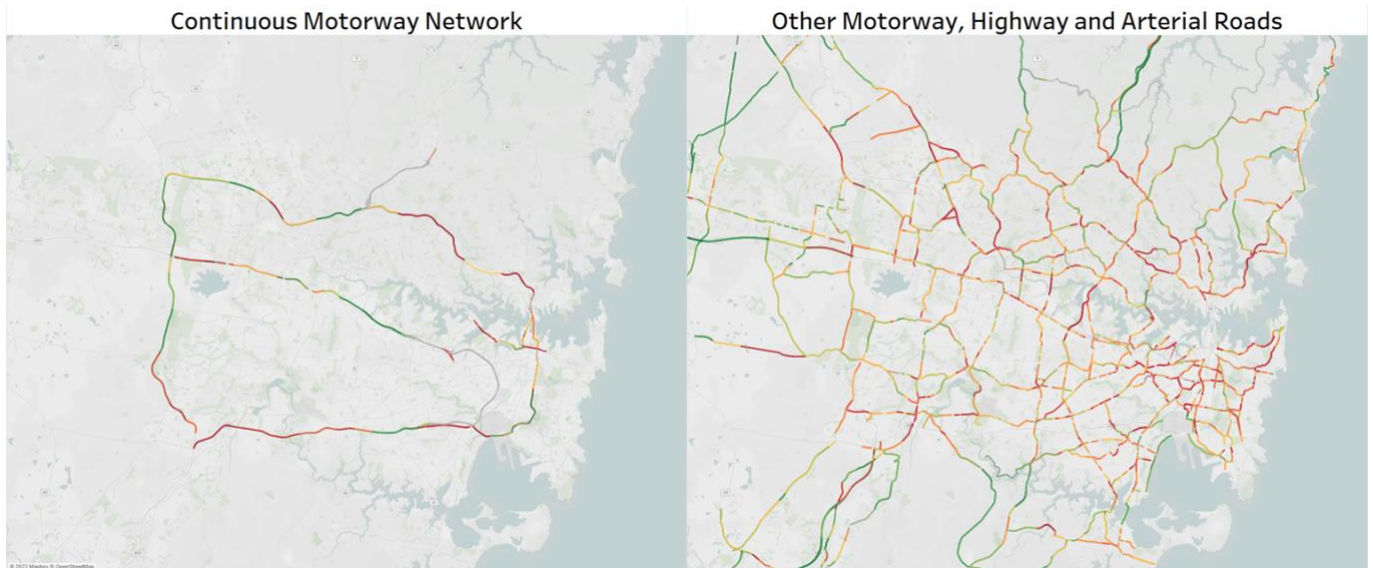
Figures 4.16 and 4.17 illustrate the level of congestion on Sydney's motorway network and arterial roads through both thematic speed maps and tables. It shows the network travel speed at 7:45 am, with average results obtained on weekdays in November 2022. The morning peak was selected as it represents the period when traffic reaches its peak on the Sydney road network. The average speed on toll roads in the AM peak was 69 km/h - significantly faster than other road categories.

Figure 4.16. Operating speed ratios, Sydney's continuous motorway network compared to other major roads, November weekdays 2022 7:45am

Operating Speed Ratio (OSR):
Mean Speed / Freeflow Speed



Note: Roads 'Greyed' out for low sample count of observed Speeds



Source: Independent Toll Review

As illustrated in Figure 4.17, during the morning peak, the observed speed to free-flow ratio is higher on the continuous motorway network. This outcome aligns with expectations, given that a key value proposition for motorists on toll roads is the promise of faster and more reliable journeys.

Figure 4.17: Comparison of observed speed to free-flow speed by road network, Greater Sydney overall and Greater Sydney Regions, November weekdays 2022, 7:45 am

Region	Road Type	Average Speed (km/h)	Percentage (%) of Road length, by Observed Speed to Free-flow Speed Ratio Band		
			0-50%	50-75%	75-100%
Greater Sydney	Other Motorway, Highway and Arterial Roads	38	6%	39%	55%
	Tolled - Continuous Motorway Network	69	13%	27%	60%
	Untolled - Continuous Motorway Network	47	19%	31%	50%
Eastern Harbour City	Other Motorway, Highway and Arterial Roads	33	10%	48%	42%
	Tolled - Continuous Motorway Network	48	40%	33%	27%

	Untolled - Continuous Motorway Network	42	27%	23%	50%
Central River City	Other Motorway, Highway and Arterial Roads	38	8%	49%	43%
	Tolled - Continuous Motorway Network	78	3%	24%	73%
	Untolled - Continuous Motorway Network	68	7%	44%	49%
Western Parkland City	Other Motorway, Highway and Arterial Roads	49	2%	20%	78%
	Tolled - Continuous Motorway Network	74	11%	31%	58%

Source: Independent Toll Review

The analysis of traffic speed patterns demonstrates that there is potential to explore changes to the structure or the level of tolls to encourage more effective use of the network and increase observed speed to free flow ratios across the network. Stakeholders in their submissions perceived opportunities for change, as detailed in Figure 4.18.

Figure 4.18: Stakeholder perspectives

Professor David Levinson, University of Sydney: 'The existing tolled motorways are under-utilised because the tolls are too high, and as a consequence local roads are over-used, compared to a social-optimum.'

Bexley Chamber of Commerce: 'The clearest direct impact of toll avoidance is damage caused to roads used as free alternatives. Council controlled roads are also affected by toll avoidance and particularly by heavy vehicles, which cause the most damage to roads. Council officers have identified Parkes Street and Hassall Street in Parramatta and Rosehill as Council managed roads affected by toll avoidance. While Council does not maintain a comprehensive list of local roads that are affected by toll avoidance or estimate the cost of damage to these roads, the direct impact on the local road network is likely to be significant. In addition to direct costs for road damage, Council's community bears many indirect costs of toll avoidance. These include degradation of amenity along alternate routes due to increased traffic and heavy vehicles, health impacts due to increased emissions from this traffic, and the slowing of general traffic and public bus services along these routes. In addition to delays on alternate routes, there are secondary impacts around these 'free' alternative routes such as extra delays on cross streets.'

Source: Public Consultation Summary Report, 2023 Independent Toll Review, August 2023 and Stakeholder Submissions, 2023

5 Competition

Draft Findings:	
Competition	<p>Finding 10: Transurban has a dominant position in the current provision of toll roads in Sydney.</p> <p>Finding 11: Transurban is dominant in the NSW market for acquisition of toll road concession contracts.</p> <p>Finding 12: The significant position of Transurban in the toll retailer market could adversely affect competition for tolling concessions.</p>

Competition is a vital aspect of price setting in most industries. Toll roads have unique features but competition still has an important role to play. Our terms of reference required us to specifically consider this.

The presence of competition within markets is generally valued within the economy as it promotes consumer choice and enhances economic efficiency, which encompasses three dimensions:

- The allocation of resources toward highly valued uses (allocative efficiency).
- The effective conversion of inputs into outputs (productive efficiency).
- The market’s ability to encourage progress and innovation (dynamic efficiency).

An examination of competition matters has been conducted, focusing on the following markets:

- Markets relating to the provision of the transport network, including untolled and tolled motorways, and public transport. These markets are likely to be local in nature, reflecting potential for competition between different roads, public transport and toll roads.
- Markets for the acquisition of toll road concession contracts, encompassing construction, operation, and toll collection for toll roads in New South Wales.⁴³
- Markets for the supply of electronic tolling services in New South Wales.

Findings have been made based on evaluation of factors such as market structure (concentration, barriers to entry, economies of scale, vertical integration, and government influence), market conduct (strategic behaviour), and market performance (profitability).

Finding 10: Transurban has a dominant position in the current provision of toll roads in Sydney

Over the past twenty years, Transurban has acquired an ownership stake in every privately operated Sydney toll road (Figure 2.2 and Figure 2.3). This has occurred through successfully bidding on new concessions, and acquisition of ownership stakes in existing concessions. The Australian Competition and Consumer Commission (ACCC) had concerns over the acquisition of the existing concessions, but ultimately did not oppose them (e.g. in the case of the NSW Government’s WestConnex sales). This dominance has been further reinforced through

⁴³ Theoretically these markets could be national. The Australian Competition and Consumer Commission (ACCC) has historically adopted state-based definitions in considering acquisitions of private toll roads due to the knowledge gained in operating in different states.

Government acceptance of USPs (NorthConnex and M7-M12 Integration Project) and the extension of existing concessions to facilitate toll road capacity enhancements (e.g. M5 widening and M2 widening).

Transurban also dominates the provision of toll roads in Queensland and Victoria. However, the further extension of the company's position in the Victorian toll road sector has recently been challenged by the ACCC opposing its proposed acquisition of a majority ownership of Horizon Roads, the operator of the EastLink toll road.

Tolling concessions create a right to build and operate a road that is part of a broader transport network. Competitive pressure, valued because it provides choice for motorists and enhances economic efficiency, comes from the presence of the untolled transport network (untolled motorways and public transport), and other toll roads. The availability and quality of alternatives to toll roads, such as untolled motorways and public transport, varies for motorists across Sydney. With respect to competition between different toll roads, this was considered by the ACCC in relation to WestConnex, with the finding at that time being that there was 'unlikely to be a significant degree of substitutability of (existing) Transurban and WestConnex toll roads for any categories of road use'.^{44 45}

Alongside competitive pressures, which may vary in their intensity, the structure of concession agreements offers some mitigations for the market power of concessionaires. For instance:

- Transurban cannot raise tolls above what is agreed upon in the contracts.
- Transurban's ability to reduce road quality is also limited, depending on the specific conditions in the contracts.
- However, these agreements do not require concessionaires to pass on the benefits of efficiency gains realised as would be expected to occur in a competitive market environment.

Finding 11: Transurban is dominant in the NSW market for acquisition of toll road concession contracts

With respect to competition for toll road concessions in New South Wales, Transurban has a perceived edge due to its ownership stakes and operating contracts with most Sydney toll roads. This increases potential incumbency advantages and barriers to entry such as:

- Access to superior traffic data and in-house modelling capabilities that are specifically attuned to the road network in Sydney. Put simply, their understanding of motorist demand elasticity surpasses that of other competitors. These advantages are more significant for new toll road opportunities (greenfield projects) because expertise in traffic data and modelling capabilities becomes particularly impactful when there is a lack of historical demand data. Additionally, the longer the concession contract's duration, the more critical it becomes to have accurate traffic data and modelling capabilities.
- Economies of scale and sunk costs from operating other roads and a well-developed electronic tolling system.
- Significant experience with bidding for toll road concessions and submitting unsolicited proposals.

The case study in Figure 5.1 focuses on the events during the WestConnex sales in 2018 and 2021, particularly regarding the role of the ACCC.

⁴⁴ Australian Competition & Consumer Commission. (2018). Public Competition Assessment. [MER18+11036.pdf \(acc.gov.au\)](#).

⁴⁵ We view that, despite this ACCC finding, there exists the potential for substitutability on certain journeys. For instance, drivers from the north-western suburbs have the option to choose between the M2/LCT and M4/WestConnex for travel to the inner west, city, or east.

Figure 5.1: Case study: the ACCC's response to Transurban's acquisition of for WestConnex

2018 WestConnex Sale

In 2018, the NSW Government sold a 51 per cent stake in the WestConnex concessionaires to STP (a Transurban led consortium). At that time Transurban already held a majority interest in seven out of nine toll roads in Sydney. The addition of WestConnex, which includes several toll road concessions, would further entrench its position.

The ACCC did not oppose STP's acquisition following the acceptance of court-enforceable undertakings, which would reduce a key aspect of Transurban's incumbency advantage - access to data. The ACCC considered that, with the undertakings in place, competition would be sufficient for future toll roads, such that the proposed acquisition will not substantially lessen competition.

This was in light of the ACCC's findings that a majority of traffic data used for traffic modelling were publicly available and that rival bidders were able to build traffic models of comparable sophistication to Transurban but lacked the confidence in their forecasts due to disparity of traffic data quality.

Enforceable undertakings

The court-enforceable undertakings require Transurban to publish traffic data used in traffic modelling including 15 minute interval toll gantry data for each quarter for each toll road in which it has an interest in Sydney.⁴⁶ This high quality traffic data, previously only available to Transurban, would enable greater validation of all potential bidders' traffic models. A stronger reassurance of rival bidders' traffic forecasts would instil more confidence from financiers and potentially enables a stronger bid from these bidders.

2021 WestConnex Sale

In March 2021 ACCC did not oppose STP's acquisition of the remaining 49 per cent interest of WestConnex. It was in the ACCC's view that this acquisition was unlikely to substantially lessen competition when the consortium currently held an existing majority of WestConnex.

Even with the enforceable undertakings providing Transurban traffic data and other measures taken by the NSW Government to attract bidders (such as an inducement fee of about \$50 million), the transaction struggled to attract other bidders to compete against Transurban.

Source: Independent Toll Review

The WestConnex sale and the acquisition by Transurban of remaining Interlink shares in 2019 have further increased the concentration of the toll road industry in NSW. There are currently four motorways in construction in Sydney (M12, Sydney Gateway, M6 Stage 1 and the Western Harbour Tunnel) and none of them are being procured as a toll road PPP. The M12 and Sydney Gateway will not be tolled. The M6 Stage 1 and the Western Harbour Tunnel are planned to be public toll roads. The net effect of these new developments will be to diminish, but not eliminate, Transurban's dominant position.

In a departure from its approach to earlier acquisitions, the ACCC has indicated that it is opposed to Transurban further consolidating its dominant position through a proposed new acquisition in Melbourne. This is outlined in Figure 5.2.

Figure 5.2: ACCC declines to provide informal clearance to Transurban's proposed acquisition of EastLink (Victoria)

⁴⁶ Australian Competition & Consumer Commission. (2018, August 30). ACCC will not oppose Transurban consortium WestConnex bid following undertaking. <https://www.accc.gov.au/media-release/accc-will-not-oppose-transurban-consortium-westconnex-bid-following-undertaking>. (for a more detailed list of undertakings)

In March 2023, the ACCC received an application from Transurban in respect of its proposed acquisition of a majority interest in Horizon Roads. In Victoria, Transurban has interests in the CityLink and West Gate Tunnel toll roads. Horizon Roads operates the EastLink toll road in Melbourne. Other than EastLink, Transurban operates all of Australia’s other private toll roads.

The ACCC’s primary theory of harm related to the incumbency advantages that Transurban would gain in Victoria as a result of the acquisition, relative to a counterfactual where EastLink was acquired by another owner. The ACCC stated that if Transurban did not acquire Horizon Roads, it would likely be acquired by a potential long-term rival and could be used as a platform to develop the capabilities needed to compete more strongly for other toll road concessions. Consequently, the ACCC opposed Transurban’s transaction on the basis of weakening competition in future toll road concessions in Victoria.⁴⁷

Source: ACCC and Gilbert + Tobin.

The ACCC’s most recent considerations indicates a concern to take stronger action to prevent the entrenchment of dominance. This is in line with decisions taken in other industries in Australia and by overseas competition authorities. It would be consistent with this concern for the NSW Government to review its policy in relation to unsolicited bids for new road projects.

Finding 12: The significant position of Transurban in the toll retailer market could adversely affect competition for tolling concessions

Toll retailers act as intermediaries between motorists and toll road operators by deducting tolls from motorists’ accounts and remitting the collected toll revenue to toll road operators. Toll retailers charge toll road operators a fee for these services, known as the roaming fee. This is illustrated in Figure 5.3. This fee is agreed by each toll road operator with each retailer in a bilateral agreement.

Figure 5.3. Toll retailers collect roaming fees for managing the relationship between the motorist and toll road operator



Source: Final report: Independent Inquiry into Regulation of Toll Road Roaming Fees, December 2019

⁴⁷ ACCC. (2023, September 21). ACCC opposes Transurban’s EastLink acquisition proposal. [ACCC opposes Transurban’s EastLink acquisition proposal | ACCC.](#); Gilbert & Tobin. (2023, September 22). Taking a toll: ACCC’s Transurban/Horizon call a sign of the times. <https://www.gtlaw.com.au/knowledge/taking-toll-acccs-transurbanhorizon-call-sign-times>.

If the toll road operator and the toll retailer are part of the same group of companies, then the roaming fee for toll collection is simply an internal transfer cost. Where the toll road operator and the toll retailer are from separate unrelated companies then the roaming fee is charged to the toll road operator by the toll retailer.

In NSW, there are two suppliers for toll retailer services - Transurban (Linkt) and Transport for NSW (E-Toll). EastLink (privately owned toll retailer based in Victoria) account holders are also able to use NSW toll roads. Until 2019 there were four NSW based retailers. Roam and E-Way have both been acquired by Transurban and their customers transitioned to Linkt.

Looking to the future, the toll retailer market could adversely affect competition for tolling concessions. New entrant bidders without an associated toll retailer business may perceive they are at a disadvantage in roaming fee negotiations with Linkt. New entrants may be concerned with the risk (should they successfully acquire a toll road PPP) that Linkt could threaten to raise roaming fees and erode their equity return.

We understand these concerns were raised during the WestConnex equity sale process. In response, the NSW Government adopted the Roads Amendment (Toll Services) Regulation 2018 which gives the Roads Minister the power to (i) set a maximum roaming fee that may be charged by toll retailers, or (ii) determine an appropriate mechanism to regulate roaming fees. The Roads Minister has not exercised this power to date and the threat of doing so may have been considered a sufficient response to date.

It may be difficult for a new entrant to enter the toll retailer market as it is currently structured. The toll retailer market is considered to be saturated (there are not many motorists without an account) and 'sticky' (motorists rarely switch toll retailers). All toll road operators and toll retailers are currently party to a Memorandum of Understanding (MoU)⁴⁸ for Electronic Toll Collection. The terms of the MoU mean there must be unanimous agreement by all the members (i.e. the toll road operators) to admit a new toll retailer as an associate member.

The ACCC has considered toll retailing issues in acquisition cases in New South Wales, Queensland and Victoria. While it has been mindful of the possibility of competition concerns, it has not found them to be significant to date. It has noted the presence of alternative suppliers in some cases, the possibility of in-house development of electronic tolling collection systems, the experience of international players, the impact of concession agreement provisions and the operation of the inter-operability arrangements as offsetting factors.

⁴⁸ A Memorandum of Understanding is a voluntary non-binding agreement between two or more parties.

6 Toll transparency and toll relief schemes

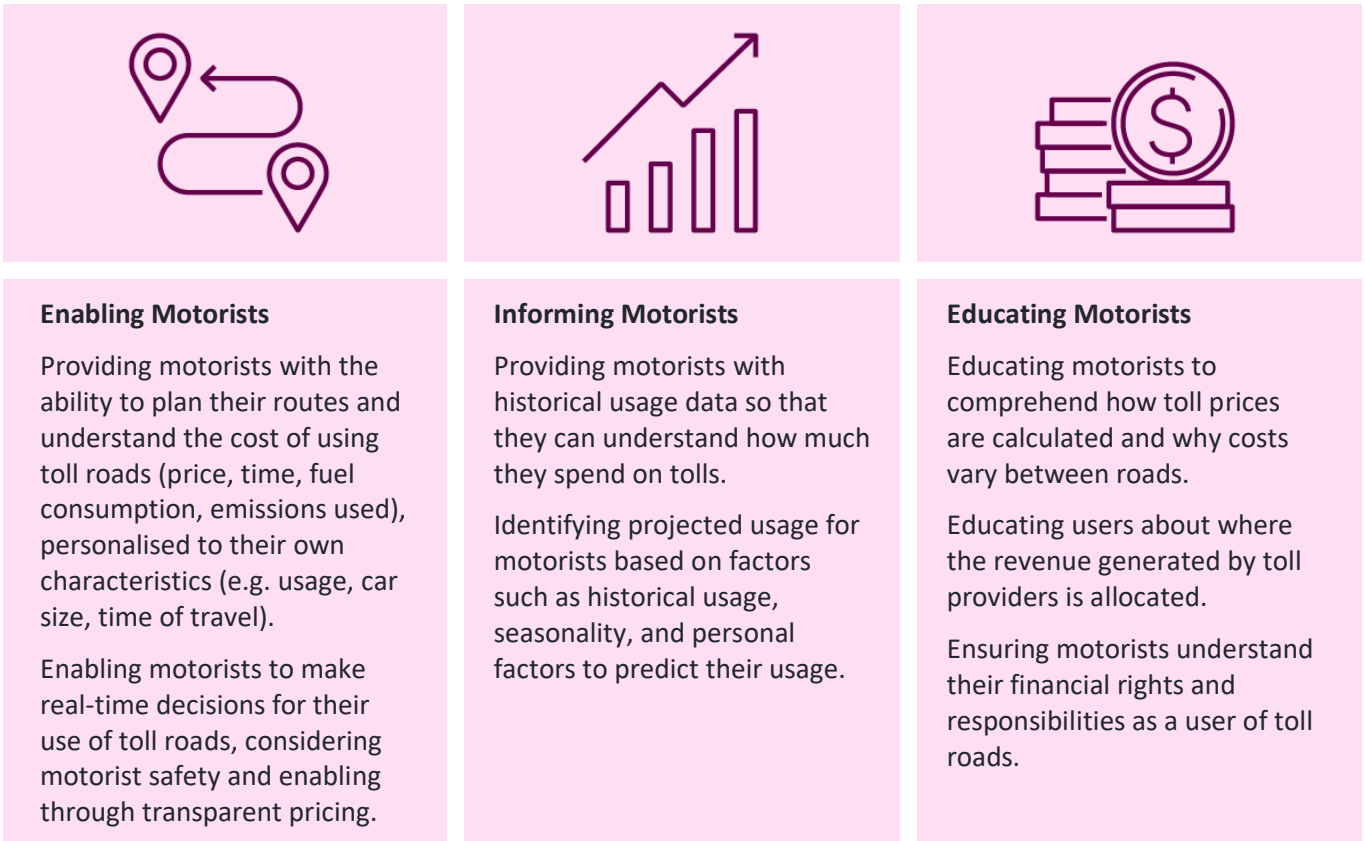
Draft Finding:	
Toll transparency	Finding 13: Current toll pricing information fails to adequately enable, inform, and educate motorists thus reducing user empowerment and efficient decision making.
Toll relief schemes	<p>Finding 14: Toll reform is preferable to toll relief. The current toll relief schemes are inadequately targeted and under-utilised, in part due to overly complex administration. Toll relief is not financially sustainable given the existing pattern of toll escalation and limitations on the availability of government resources to fund relief.</p> <p>Finding 15: Concessionaires are an unintended beneficiary of the current approach to toll relief. Increased traffic and patronage of toll roads, through induced demand created by toll relief, directly benefits operators by increasing their revenues. Concessionaires have to date not been willing to return this revenue to the public purse, other than through the contractually agreed revenue share provisions.</p>

Finding 13: Current toll pricing information fails to adequately enable, inform, and educate motorists thus reducing user empowerment and efficient decision making

There are significant deficiencies in how current toll pricing information enables, informs and educates motorists. This lack of transparency is caused by both issues with the communication channels (how information is presented) and the complexity of the underlying information which motorists need to understand.

Figure 6.1 sets out a Toll Price Transparency Framework, which describes three elements that underpin transparency: enabling, informing, and educating. The current state performance of toll price information falls short of what is required for each element.

Figure 6.1: Toll Price Transparency Framework



Source: Independent Toll Review

Enabling motorists

Motorists want access to real-time information to make informed decisions about their travel. However, this requires motorists to use multiple mobile applications and websites to determine pricing and toll information, and rebate eligibility. As Figure 6.2 details, there is no ‘one stop shop’ platform providing all the key features and trip planning functionality. Furthermore, information provided via these sources is not personalised to the user. For example, a user with a vehicle which is privately registered in NSW should be made aware of the M5 South-West Cashback scheme if the M5 South-West is part of a possible route for their intended journey. Physical road signage providing toll cost and travel time information both before and along toll roads is limited. Signage that does exist is often in locations that do not give motorist sufficient time to adjust their route choice.

Figure 6.2. Existing platform features and functionality

	Opal Travel App	Transport Connect	Service NSW	Transport NSW.info	Sydney Motorways Calculator	Linkt	E-Toll	Google Maps	Apple Maps	Waze
Platform										
Mobile Application	✓		✓			✓		✓	✓	✓
Website/ Dashboard		✓	✓	✓	✓	✓	✓	✓	✓	✓
Key Features										
Notifications	✓		✓			✓		✓	✓	✓
Trip Planner	✓	✓		✓	✓	✓		✓	✓	✓
Data Displays and Trip Spend Breakdowns	✓	✓				✓		✓		
Predictive Data and Recommendations										
Rebate Claims			✓							
Educational Information (Incl. financial rights, financial hardship info)	✓	✓	✓			✓	✓			
Car Registration and Driver's License Information			✓							
Trip Planner										
Toll Speed Information					✓	✓				
Public Transport Speed Information	✓	✓		✓						
Other Transport Information (Cycling, walking, etc)	✓	✓		✓				✓	✓	
Other Travel Information (emissions use, fuel consumption, hazards)						✓		✓		

Ownership

NSW Government Owned	✓	✓		✓	✓		✓			
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Source: Independent Toll Review

Informing motorists

Retailers (Linkt and E-Toll) are best placed to inform motorists about their past usage of toll roads and eligibility for rebates. The two retailers currently provide variable information about past trip data, notifications when statements are ready, eligibility for and reminders to claim toll relief, and whether an account is running low on funds. Linkt currently offers an app whereas E-Toll does not.

None of the current platforms allow motorists to project their potential future toll usage, as Figure 6.2 shows. Providing projected toll road usage for individual motorists (e.g. predicting how much a motorist will spend on tolls over the next 6 months and what rebates they will be eligible for) by considering variables including historical usage trends, seasonal variations, and individual factors would provide insights into how they could adjust their habits to save money in the future.

Educating motorists

Motorists generally do not understand the intricacies of toll price calculations. Less than 10% of NRMA members say they understand how tolls are calculated. This lack of understanding is due to the current system comprising a patchwork of different mechanisms to calculate tolls and the available information being spread across various locations.

There is currently very little communication to motorists about how toll revenues are utilised. Motorists are unsure of how the money they are spending on the publicly owned toll roads (the Sydney Harbour Bridge and Sydney Harbour Tunnel) are being reinvested in State budgets. While privately-run PPPs are structured to directly fund the delivery and operation of the underlying motorways, there could be improved clarity on how any proceeds are applied. Finally, it is not clear who is responsible for educating motorists of their rights and responsibilities as a toll road user. The toll road operators, the retailers, Service NSW and Transport for NSW all currently play a role. In particular, administration charges (e.g. toll notice transfer fee, video matching fee) are not well understood.

Administration charges were highlighted in submissions from NSW Ombudsman, the Canterbury and Bankstown Council, as detailed in Figure 6.3.

Figure 6.3: Stakeholder perspectives on Administration Fees

NSW Ombudsman: 'The majority of tolling-related complaints we receive are of an administrative nature, relating to issues including:

- receiving multiple toll notices for vehicles not owned by the complainant
- delays in processing refunds etc
- incorrect and unexpected debits from bank accounts.'

Canterbury Bankstown Council: 'Council questions the utility and purpose of administration fees charged by STP and Transurban, and notes submissions and findings of the 2022 Upper House Inquiry that the system is not working for individuals experiencing hardship or distress with some of Sydney's most vulnerable members in the community incurring toll debts of thousands of dollars made up largely of administration fees.'

Source: Stakeholder submissions, 2023

While there are several simple circumstances that can result in a motorist incurring an administration charge (for example, their tag has a flat battery so they have incurred a video matching fee to cover the toll road operator's cost to read their licence plate), it can be challenging for motorists to identify the underlying issue.

Communication about the issue is not timely and is poorly structured such that the motorist may be confused about when the issue happened and if it is likely to be ongoing. Privacy issues often mean that a toll road operator's only course of action to recover an unpaid toll is to issue a toll notice via post which may seem to the customer like a heavy-handed response.

Finding 14: Toll reform is preferable to toll relief. The current toll relief schemes are inadequately targeted and under-utilised, in part due to overly complex administration. Toll relief is not financially sustainable given the existing pattern of toll escalation and limitations on the availability of government resources to fund relief.

Toll relief schemes have been introduced by Governments to balance the impact tolls have on household budgets and attempt to mitigate the impact of high tolls especially for users who are more disadvantaged due to socio-economic considerations and access to other transport options. Toll relief has been very expensive. More than \$1 billion has been budgeted for relief schemes introduced in the past two years (2022 and 2023) alone.

Five different toll relief measures are currently available for motorists to claim after tolls have been paid to toll road operators (see Appendix I). These are illustrated in Figure 6.4.

Figure 6.4: Available toll relief schemes from 2020 to 2025

Relief Scheme	2020				2021				2022				2023				2024				2025			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
M5 South-West Cashback*																								
Registration Relief (TR1)																								
Large Towed Recreational Vehicle Toll Rebate																								
Toll Relief Rebate (TR2)																								
\$60 Toll Cap (TR3)																								
Truck Multiplier Reduction																								

* From 1997 to 2010 the Cashback Scheme also applied to the M4.

Source: Independent Toll Review

This rebate approach adds another layer of complexity to the NSW system of toll roads. Many motorists are not aware of what rebates they are entitled to or how to claim them. Some rebates can only be claimed from Service NSW; others can be accessed through toll retailers and Transport for NSW. Due to this complexity, there are relatively low claim rates for the current schemes. For example, Transport for NSW estimates that 35 per cent of trips eligible for the M5 South-West Cashback scheme will not be claimed.

The story behind cashback has been told by ex-Premier Bob Carr. See Figure 6.5.

Figure 6.5: The origins of the M4 and M5 Cashback Scheme

‘I was elected Premier of NSW in 1995 by a one seat margin in a state assembly of 99. I was elected on a promise, among others, of lifting the tolls on two private roads built by the previous conservative government: the M4 and M5 linking the city to the western suburbs. It was not the decisive issue in the election campaign, but it was, as election promises go, a reasonably prominent one.

Within months of taking office, my government was in negotiations with the owners of the toll roads. We aimed to remove the toll gates and pay the consortia shadow tolls from the state budget based on vehicular traffic numbers. To our surprise—to everybody’s—we found that the consortia would need to be compensated for an additional amount equal to the tax advantage that accrued to them from their tollway investment. This would have doubled the cost of keeping our promise.

The outcome was not happy. It involved a doleful concession by me as the new Premier that we couldn’t honour this commitment, couldn’t keep the promise. There was a backlash that went far wider than the communities affected by the toll. The issue became a ‘character issue.’ Our honeymoon poll ratings took an

instant dive. There was speculation about whether we could be re-elected when our four-year term was complete.

Our political embarrassment over tolls was resolved in 1997 when we introduced a direct subsidy to owners of private motor vehicles who used the M4 and M5. They were compensated on a quarterly basis for the tolls they had paid. We called the scheme 'cashback.' This reduced the political temperature of the issue, and in the 1999 State Election I apologized to the state's voters and said we'd learnt from our mistake in making too rash an election promise and would not do it again.'

Source: Bob Carr, Reason Foundation, *Good Roads Sooner: Public-Private Partnerships in New South Wales*, 29 January 2010

The sustainability of the current approach to toll relief is questionable given new toll roads, toll price escalation and population growth. Two new toll roads are currently in construction (the Western Harbour Tunnel and M6 Stage 1). Tolls on WestConnex (until 2040), the Eastern Distributor, the Hills M2, the Lane Cove Tunnel (for Class B heavy vehicles), and NorthConnex all have a 4 per cent per annum or 1 per cent per quarter minimum escalation. And Greater Sydney's population is projected to grow to approximately 6.1 million by 2041 — an increase in over a million people from 2022.⁴⁹ A total of \$615 million was budgeted in FY23-24 for toll relief. Refer to Appendix F for previous and current relief scheme spends.

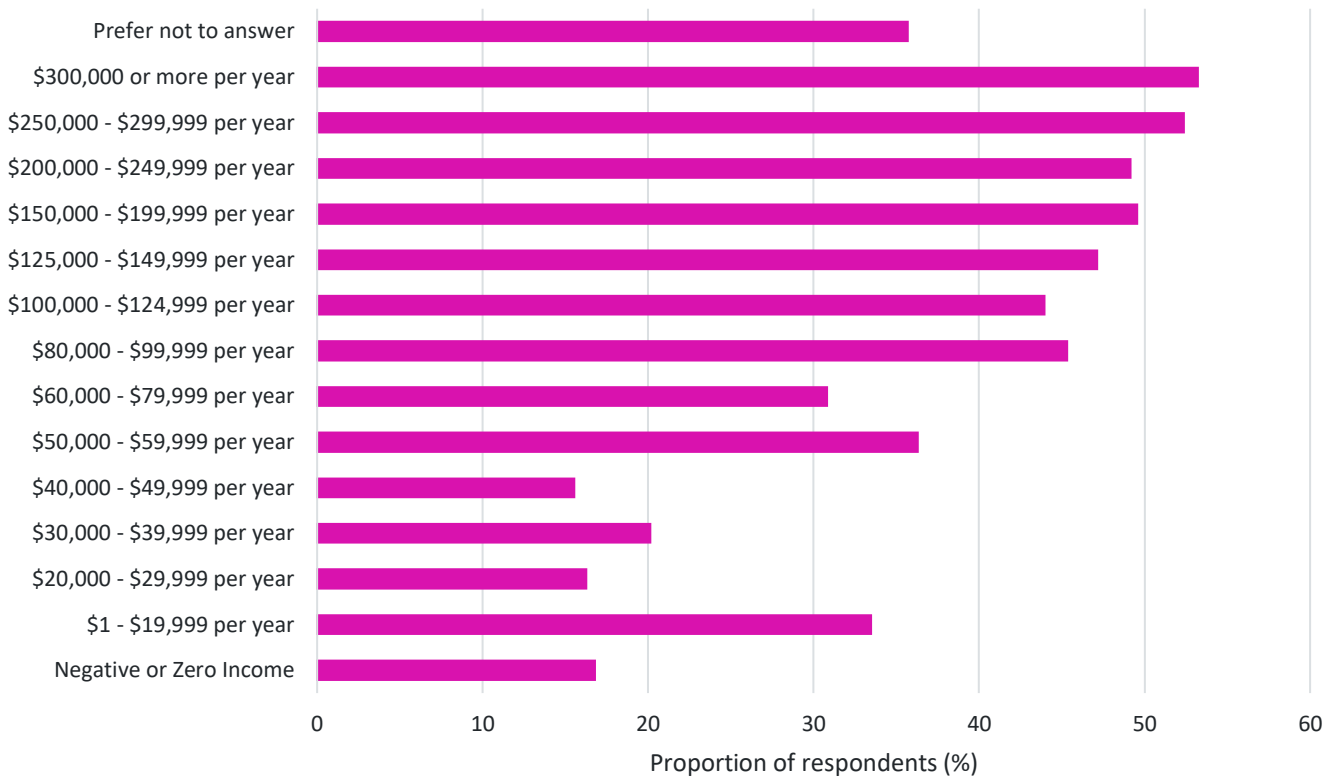
In addition, toll relief has been challenging to target. Previous attempts by the NSW Government to develop a means tested toll relief approach have fallen short due to:

- inability to access Australian Government income data
- reliance on schemes designed at the Australian Government level that are not appropriate (e.g. concession cards, which have a narrow userbase).

The Independent Toll Review Survey also found that drivers from middle-and high-income households are most likely to make use of the current toll relief schemes. This is illustrated in Figure 6.6.

⁴⁹ NSW Department of Planning and Environment. (n.d.) Population projections. NSW Government. <https://www.planning.nsw.gov.au/research-and-demography/population-projections>.

Figure 6.6: Proportion of drivers who have obtained/plan to obtain toll relief for the past 12 months, by income bracket.



Note: Question was asked to all participants who were aware of toll relief schemes (N = 1,143)

Source: Independent Toll Review Survey 2023.

More than 40 per cent of drivers with household incomes between \$80,000 and \$249,000 had obtained or planned to obtain toll relief. This increased to over 50 per cent of drivers from households earning \$250,000 or more per year. In comparison, less than 40 per cent of drivers from households earning under \$80,000 a year had obtained or planned to obtain toll relief.

Finding 15: Concessionaires are an unintended beneficiary of the current approach to toll relief. Increased traffic and patronage of toll roads, through induced demand created by toll relief, directly benefits operators by increasing their revenues. Concessionaires have to date not been willing to return this revenue to the public purse, other than through the contractually agreed revenue share provisions.

Toll relief measures are expected to generate additional trips on toll roads and increase toll revenues for toll road operators, but concessionaires have no obligation to return this benefit to the Government.

The Government is largely reliant on 'upside sharing regimes' built into concession agreements to address any windfall gains to private concessionaires because of toll relief. These mechanisms only return funds to the government if a toll road's performance exceeds agreed levels. So, if a toll road is used more, but not enough to hit agreed levels for sharing, the government will not receive a share of the extra revenues/profits, even though private concessionaires may be earning more due to toll relief.

We understand that some value has been extracted from the M5 South-West concessionaire linked to the M5 South-West Cashback scheme. In that instance, the concessionaire may have contributed less (or not at all) to the cost of the M5 West Widening project if the cashback scheme was not in place.

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Recommended overhaul of toll network

7 Tolling principles

Recommendations:

Recommendation 1: The NSW Government should adopt the Proposed New Tolling Principles.

2014 Tolling Principles

In 2014 the NSW Government agreed to a set of principles to guide the setting of tolls on new toll roads (2014 Principles).

Over the previous two decades the Sydney orbital motorway network has been developed in a piecemeal fashion so that inconsistencies exist between motorways with differences in tolling methods, lengths of concessions, escalation rates, application of tolls after pay back, heavy vehicle multipliers and toll relief.

At the time major expansions of the network were occurring, including the NorthConnex, WestConnex developments and planning for the Western Harbour Tunnel, Beaches Link, Sydney Gateway, M6 Stage 1 and M12. It was considered that these developments would have significant transport and financing impacts on other orbital motorways. There was a need to avoid perverse outcomes from tolls and to have a policy basis to retain tolls on roads that provided value to users through more reliable and faster journeys for their full economic life, including after concessions had expired.

The 2014 Principles aimed to balance the financial objective of needing to continue to fund investment in the motorway network with the desire to give confidence to consumers that their interests were being considered in determining tolls; that the price they pay reflects the benefits they receive and the reality of historical concession agreements and their tolling arrangements.

There were ten principles specified as follows:

1. New tolls are applied only where users receive a direct benefit.
2. Tolls can continue while they provide broader network benefits or fund ongoing costs.
3. Distance-based tolling for all new motorways.
4. Tolls charged for both directions of travel on all motorways.
5. Tolls charged reflect the cost of delivering the motorway network.
6. Tolls take account of increases in expenses, income and comparable toll roads.
7. Tolls will be applied consistently across different motorways, to the extent practicable, taking into account existing concessions and tolls.
8. Truck tolls at least three times higher than car tolls.
9. Regulations could be used so trucks use new motorway segments.
10. Un-tolled alternative arterial roads remain available for customers.

General observations on the 2014 Tolling Principles

The inter-dependencies between different parts of the network and the desirability of a consistent network approach to tolling were clearly recognised by the 2014 Principles. The preference for two-way tolling on all parts of the network and for distance-based tolls was highlighted. Commentary on the 2014 Principles indicated that

toll escalation would be in line with cost-of-living movements, or higher if tolls were initially set lower to encourage patronage.

The 2014 Principles sought to provide some direction for future tolling arrangements and push for greater consistency across the network. However, the 2014 Principles were still articulated in fairly general terms and provided only limited guidance for those involved in the setting of both the level and structure of tolls.

As regards the level of tolls, there was no clear guidance as to what share of infrastructure capital and operating costs should be recovered through tolls, as opposed to general government funds. There was no clear guidance on the length of time tolls should apply for or the specific pattern of cost recovery or toll escalation. A key factor affecting the level of tolls is the cost of capital. However again, there is no articulation of principles which applies in this area. This issue is particularly important, as concession agreements specify base toll levels and their escalation over time for the entire term of the concessions, without provision for reviews during these periods.

As regards the structure of tolls, a deficiency of the 2014 Principles is the limited recognition of the importance of tolls in responding to fluctuating demand and traffic conditions throughout the day. Heavy traffic can lead to delays, unpredictable journey times, and additional costs such as decreased fuel efficiency, increased environmental emissions, and a higher risk of accidents. When traffic volumes are already high, each additional motorist using the network increases these negative impacts, and so higher tolls may be justified. Higher tolls during high demand will discourage some users from travelling on the motorway and help to relieve the congestion and other costs. Conversely, when traffic volumes are low, lower tolls may be appropriate.

Different users may have different cost impacts on motorways. While the 2014 Principles provide for higher tolls for trucks than for cars, there is no consideration that vehicle categories appropriately recognise actual cost differences.

Observations on specific principles

Principle 5 referred to tolls reflecting the cost of delivering the motorway network. It was not suggested that tolls should reflect the cost of delivering specific parts of the network covered by individual concessions. It left open the possibility of cross-subsidisation between different parts of the network. This is particularly relevant where an operator controls multiple concessions as is the case with Transurban. Cross-subsidisation was indeed a feature of the subsequent financing of NorthConnex and WestConnex.

Principle 8, the three times multiplier for heavy vehicles aimed at recognising the economic benefit for freight operators due to improved travel times as well as the higher long term maintenance costs caused by the pavement damage they caused. On cost grounds alone, it was suggested that the multiplier could be higher, but it was balanced by consideration of willingness to pay.

Principle 9 states 'regulation could be used so trucks used new motorway segments'. This Principle was later applied in the context of NorthConnex, where regulation requires heavy vehicles use NorthConnex instead of Pennant Hills Road, with limited exceptions.⁵⁰

In terms of the Pennant Hills Road restrictions, there are clearly amenity, safety and environmental considerations involved in this matter in part, these community benefits are reflected in State and Federal Government participation in funding and financing NorthConnex. However, based on submissions to the Review, stakeholders perceive a mismatch between who bears the costs and receives the benefits of these restrictions. As the Transport Workers Union NSW observed of NorthConnex and Pennant Hills Road, 'the answer apparently is to force truck drivers to use a toll road. There's all this spruiking about having free alternatives, and that's a very

⁵⁰ Transport for New South Wales. (n.d.). Pennants Hills Road regulation. NSW Government. <https://www.transport.nsw.gov.au/operations/roads-and-waterways/business-and-industry/heavy-vehicles/compliance/pennant-hills-road>.

stark example of where there isn't one, and it targets a particular part of the community and the economy, and they unfairly are burdened by that additional cost'.⁵¹

Restricting access by a particular user group to an untolled alternative should only be pursued as a last resort, and with a strong policy case. For the most part, roads should be designed, and tolls set, at a level which makes them desirable to use. Otherwise, they will not achieve their intended transport planning and other outcomes. Such restrictions should only be utilised where the benefits are proportionate and focused community and user consultation has occurred.⁵²

Principle 10 raises the issue of choice for users. If users have a genuine choice between an untolled arterial road and a toll road, they can determine whether the required toll payment actually provides them with a benefit they are willing to pay.

The current Review

The Review has been asked to consider the efficiency, fairness, simplicity and transparency of tolls as currently applied to motorways in Sydney. It has also been asked to consider the impact of competition and the scope for competition and regulation to influence tolls and provider service performance.

These issues in total are broader than the matters covered by the existing 2014 Principles discussed above but essentially encompass them.

The Review has examined the 2014 Principles in light of its own terms of reference and developments over the past decade, in particular the considerable further development of the Sydney motorway network. It considers that a modified set of principles, as outlined below, would be useful in guiding toll setting in the future.

We recognise that several considerations may affect the specific application of the toll principles. For example, broader public policy considerations relating to transport in general and land use, may necessitate a particular focus at a particular time. Available technology, and the practicality of administration and enforcement may also influence decision making. Further, we recognise that tolls are a funding instrument, not just an economic instrument for influencing road use.

Tolls have distributional impacts as well as economic and financial impacts. Tolls should not discriminate between users where they access the same road services at the same time (horizontal equity), but tolls may impact differently on users where their capacity to pay varies (vertical equity). In practice, toll setting may be limited in the extent to which it can address issues of vertical equity.

The Review has considered the application in practice of distance-based tolling under the 2014 principles and also a proposal coming from the 2022 Toll Road Pricing and Relief Reform Review to have variable distance-based tolls set on a zonal basis. Both options have weakness from an efficiency and fairness perspective. For reasons discussed in chapter 8 of the report, we favour network tolls being set on a declining distance-basis. This means that the kilometre rate charged declines the further the distance travelled. This means that motorists required to travel longer trips do not have to pay as much as would otherwise be the case.

⁵¹ Independent Toll Review. (2023, July). Public Hearing Transcripts.

<https://www.treasury.nsw.gov.au/sites/default/files/2023-08/202308-toll-review-public-consultation-transcripts.pdf>.

⁵² Infrastructure Implementation Group. (2005). Review of Future Provision of Motorways in The Premier's Department.

Proposed New Tolling Principles

Principle 1: Level and Structure of Tolls

Toll setting should be guided by the objectives of efficiency, fairness, simplicity and transparency.

- a. Tolls should have regard to the benefits users obtain from toll roads. Declining distance -based tolls are consistent with the principle and have efficiency and equity advantages over fixed distance-based tolls or variable zonal distance-based tolls.
- b. In general, it is appropriate that beneficiaries pay for toll roads, for example, where benefits flow to the broader community then government contributions are appropriate. The extent of cost recovery achieved through tolls should reflect the extent to which a toll road's benefits are enjoyed directly by motorists.
- c. The process for setting tolls should be transparent to the public to promote understanding and allow for informed comment.
- d. The methodology for determining tolls should, so far as possible, be applied consistently across the entire network.
- e. Tolls should allow toll road owners/concessionaires to recover their costs incurred in financing the construction of the toll road including an appropriate (i.e. risk adjusted) return, and efficient operating and maintenance costs where relevant. It may be appropriate to apply specific charges to individual parts of the network to allow for cost recovery, for example infrastructure charges to cover the additional costs associated with constructing tunnels or bridges.
- f. Tolls should not be set at a level which would allow an owner/concessionaire over time to obtain excessive, monopoly profits, or to operate with inefficient cost levels.
- g. Maintaining flexibility to adjust tolls over time in response to demand and supply changes is important.
- h. Toll setting should take into account fairness considerations bearing in mind that other more direct policy approaches may be preferable forms of intervention in relation to fairness.
- i. The different vehicle categories for tolls should balance impactor pays (the extent to which vehicles impose costs on the network and other users due to their weight and size set against the costs imposed by such vehicles on ancillary roads) and beneficiary pays considerations (a higher willingness to pay for travel time savings). For example, under this principle setting higher tolls for heavier and larger vehicles is consistent with efficient tolling.
- j. The structure of tolls should be simple enough to be readily understood by users and avoid creating perverse incentives for the use of the road network.
- k. Toll pricing information should be communicated in real time to inform customer journeys and enable improved decision making.

Principle 2: Consistency with competition policy

Toll road financing arrangements for motorways should be designed and implemented in a way that is consistent with the promotion of competition.

- a. Competitive pressure should be harnessed when setting tolls and assessing concessionaire bids (competition for the market) and when regularly reviewing tolls (competition in the market).
- b. Unsolicited proposals for toll road extensions should not be considered in isolation of the possibility of first modifying tolls to better manage traffic flows.
- c. Restrictions should not be imposed on the use of any road or public transport in order to enhance the financial viability of a toll road.
- d. Tolls should only apply where motorists have reasonable and effective untolled road options, including arterial roads, or public transport alternatives except where community benefit may necessitate restriction on access to alternatives.

8 Price reforms

Recommendations:	
<p>The opportunity for reform: moving to network tolling</p>	<p>Recommendation 2: The NSW Government should adopt network tolling. Implementation will require detailed planning, investment in infrastructure and close monitoring of impacts.</p> <p>Recommendation 3: The NSW Government should adopt declining distance based pricing as the foundation of network tolling. This would lead to a simpler, more consistent and coherent system of tolls which aligns more closely to the criteria the Review has been asked to consider, namely efficiency, fairness, simplicity and transparency.</p> <p>Recommendation 4: The NSW Government should consider the role of toll relief in supporting the transition to network tolling. Significant changes in toll relief may need to be phased over time.</p> <p>Recommendation 5: If NSW Government chooses to extend or phase out toll relief, it should be with consideration of the following principles:</p> <ul style="list-style-type: none"> • Toll relief should be targeted to those that are most in need to the extent practicable through means-testing. • Toll relief should take into account the availability of alternative transport options, in particular alternative non-tolled roads and public transport. • Toll relief should avoid distorting price signals (e.g. it should not make trips on the tolled network free). • Toll relief should apply to the entire toll road network.
<p>Future opportunities: using pricing to influence demand</p>	<p>Recommendation 6: Flexible pricing techniques including peak/off-peak pricing, and dynamic pricing should be available as part of a network tolling system.</p> <p>Recommendation 7: The NSW Government should consider an initial focus on freight operators for peak and off-peak pricing.</p>
<p>Updating vehicle classifications and charges</p>	<p>Recommendation 8: The NSW Government should further explore refining tolling classes in NSW, adopting a uniform definition for Class A vehicles, and a fairer classification for towed recreational vehicles and motorcycles.</p> <p>Recommendation 9: The NSW Government should continue to apply toll price multipliers to vehicles exceeding Class A vehicle dimensions.</p> <p>Recommendation 10: The NSW Government should investigate a new classification for mid-class heavy vehicles to incentivise these vehicles to use toll roads.</p> <p>Recommendation 11: Vehicle multipliers should be applied consistently across the toll road network.</p> <p>Recommendation 12: The NSW Government should simplify the arrangements allowing public bus services to be exempt from tolls to ensure consistency across the network.</p>

Recommendations:	
Expanding toll coverage to improve outcomes for motorists	<p>Recommendation 13: The Review recommends consistent two-way tolling as part of the network tolling system. Practical issues with the implementation are still being investigated.</p> <p>Recommendation 14: The NSW Government should investigate the scope of the tolled network in Sydney to achieve greater consistency, efficiency, and fairness.</p>

There are significant challenges with the current structure of tolls

Toll roads are integrated into Sydney’s metropolitan road and public transport network. The functioning and management of toll roads directly affect the overall efficiency and effectiveness of the city’s transport system. This in turn affects people’s opportunities to access employment, social opportunity, and services they want and need. In the long term, this influences land use through decisions about where people live and work.

As Chapter 4 detailed, there are a series of interconnected challenges stemming from the current structure of tolls and approach to managing toll roads, namely:

- Tolling regimes differ from road to road, influenced by the procurement decisions and available technology at the time of each road’s development. Motorists encounter a variety of tolling methods based on location, including one-way and two-way tolling, fixed fees, distance-based pricing, or a combination thereof. Consequently, motorists pay varying tolls for journeys of similar length and quality (Finding 4, Finding 5.)
- Regarding the level of tolls, originally, toll prices were not set through competitive bidding, and the emphasis in procurement was often on factors other than toll fairness and efficiency. The evidence suggests that the current set of tolls in Sydney has not been optimally set to promote efficiency and equity (Finding 1).
- Exacerbating this inequity, toll price escalation levels differ by road, according to original agreements. Consequently, motorists face varying rates of toll increases. In general, escalation is linked to CPI (often with floor provisions, preventing prices from decreasing), and in some cases, the escalation is even steeper (like in the case of WestConnex, where, until 2040, tolls escalate at floor of 4 per cent or CPI, whichever is higher) (Finding 6).
- Compounding these issues, the current approach lacks mechanisms to review and adjust toll levels. This means that if tolls become inappropriate over time, especially under changing economic conditions and land use, they are not reset to address fairness and efficiency, and issues get worse over time (Finding 6).
- The availability of alternatives to toll roads, such as untolled roads and public transport, varies depending on where motorists live. This leads to unequal options and a heavier reliance on toll roads, for example in areas of Western Sydney, where there are fewer alternatives. This limited choice, particularly in accessing key employment centres like the Sydney CBD, further exacerbates socio-economic inequalities (Finding 8).

The impact on motorists is significant. Tolls do not accurately reflect the costs of road provision and are widely perceived as high, with many motorists struggling to understand the cost of their journey (Finding 9, Finding 13). This distortion, perceived high cost, and confusion lead to inefficient use of the transport network. There are specific concerns regarding arrangements for motorcycles, towed recreational vehicles, and smaller trucks (Finding 5).

Toll relief measures have been introduced in response, but these add a further layer of complexity for motorists trying to make decisions about transport based on journey costs (Finding 13, Finding 14). Moreover, the effort required from motorists to apply for these measures, coupled with the lack of sustainability of relief measures, poses additional challenges (Finding 14).

The opportunity for reform: moving to network tolling

Given the extent of the current challenges, reforming the structure and level of tolls provides a key opportunity to improve their efficiency, fairness, simplicity and transparency.

We recommend moving to uniform network tolling, where the same methodology is used to set tolls across the toll road network, in conjunction with periodic reviews of the appropriateness of tolls by independent authorities (see Chapter 10). This opportunity was highlighted by several stakeholders, as detailed in Figure 8.1.

Figure 8.1: Stakeholder support for toll road pricing reform

Stakeholder feedback supports a move to network tolling

- Western Sydney Regional Organisation of Councils: ‘WSROC suggests that the NSW Government consider a number of network-wide pricing alternatives to address these inequities and ensure a sustainable funding source for the future, including: Distance based tolling with a total journey cap across multiple motorway links.’
- Infrastructure Partners Australia: ‘Network tolling provides a practical and short-term option for improving utilization of the Sydney Motorway Network without placing substantial cost pressures on the state budget. Indeed, if well designed and implemented, the development of an efficient tolling regime for the network could potentially contribute a new revenue stream to fund infrastructure.’
- Transurban: ‘With much of the Sydney network becoming well established, we recognise that there is now an opportunity to revisit the current pricing regime in terms of fairness, simplicity and transparency for customers and a more efficient road network performance.’
- Professor David Hensher: ‘My suggestion is a toll road repricing model that will move seamlessly, in the future, into a network wide solution. I like the idea of a peak, shoulder, off-peak distance-based charges that can be capped.’
- Professor David Levinson: ‘(C1-C4, F) Tolls should be set on a consistent basis, system-wide.’

Source: Public consultation, stakeholder submissions

Network tolling is appropriate now that Sydney has a fully integrated network of toll roads.

Pricing on one toll road influences route choice and the journeys taken on the broader toll network. Variations in the basis for tolling can distort user decision making causing inefficiency and unfairness. A uniform approach to tolling would be easier to communicate to the public, as compared to the multiple tolling arrangements currently in play (Figure 2.3), supporting transparency.

The transition to network tolling offers a chance to improve tolling outcomes in line with the Proposed New Tolling Principles, focusing on better road network results like quicker and more reliable trips. The design of reform would seek to ensure that most motorists are better off, potentially lessening the need for toll relief. If toll relief is still offered, it could be made more effective by directly lowering tolls, providing immediate benefits to all toll road users without requiring an application process for relief.

Network tolling in combination with institutional reform (discussed in Chapter 10) would be part of a system that improves tolling over time and adapts to changing conditions. In the near term, in parallel to changes to tolls, updates to vehicle classifications and charges could be made consistently network-wide. This approach provides

flexibility for future changes to meet government goals and adapt to transport network shifts. Over time, a network-based tolling system can direct new investments, enhancing transport planning and traffic management.

Navigating the transition from the current state

Moving to network tolling will involve a significant transition from the current state. As we consider setting a new structure of tolls based around declining distance pricing, we are guided by the Proposed New Tolling Principles, and responding to the constraints of the current environment.

Our immediate focus is on redistributing toll charges within the network, aiming to adjust how tolls are distributed across different sections without increasing the total tolls paid by motorists. Although the current reforms do not reduce the overall amount spent on tolls by motorists, this is a consideration for the future. Over time, the substantial reforms discussed in Chapter 10 will allow for ongoing management of tolls in line with the Proposed New Tolling Principles.

Our objectives in the initial reform

Our Proposed New Tolling Principles, detailed in Chapter 7 have guided our approach. Key principles include:

- ‘Toll setting should be guided by the objectives of efficiency, fairness, and simplicity and transparency.’
- ‘Tolls should have regard to the benefits all users obtain from toll roads. Distance-based tolls are generally consistent with this principle. This includes consideration of the concept of ‘toll saturation’⁵³ - the point at which the collective toll cost becomes burdensome for drivers, prompting them to change their driving patterns to manage expenses.’
- ‘Tolls should allow toll road owners/concessionaires to recover their costs incurred in financing the construction of the toll road including an appropriate (i.e. risk adjusted) return, and efficient operating and maintenance costs where relevant. It may be appropriate to apply specific charges to individual parts of the network to allow for cost recovery, for example infrastructure charges to cover the additional costs associated with constructing tunnels or bridges.’

Additionally, the Review has sought to ensure that the reconfiguration of the toll system does not result in unexpected or sharp hikes in the cost of trips for users, thereby smoothing the transition to the new toll structure.

The design of the initial reform needs to respond to variation in existing tolling arrangements

As described in Finding 4, there is no overall system of tolls, presenting significant challenges for the first phase of reform. For example, Figure 2.3 shows the wide range of toll prices, from \$3.11/km in the Cross City Tunnel to \$0.24/km for the M7, attributed to historical toll setting and escalation approach differences (Findings 1 and 6). Addressing these disparities has made setting a unified pricing strategy difficult.

Our initial reform aims to enhance consistency across the toll network, focusing on a common toll structure aligned with the Proposed New Tolling Principles and uniform vehicle classifications, while accepting some toll level differences. The proposed institutional reforms in Chapter 10 are designed to facilitate ongoing improvements.

⁵³ Hensher, D. A., Ho, C. Q., & Liu, W. (2014). How much is too much for tolled road users: Toll saturation and the implications for car commuting value of travel time savings? Institute of Transport and Logistics Studies. <https://ses.library.usyd.edu.au/bitstream/handle/2123/19506/ITLS-WP-16-03.pdf?sequence=1&isAllowed=y>.

This approach also mitigates the risk of disruptive changes to traffic patterns because of sudden and abrupt changes in tolls. As the Grattan Institute observed on navigating the transition: ‘There is merit in starting with a charge that the Government believes may be a little below rather than a little above the ideal. That is because the tolling would occur not on a blank slate, but in addition to various other measures such as the CBD parking levy and public transport fares that vary by time of day. It would be prudent for the government to leave room to learn as it goes and refine the scheme in light of the community’s response’.⁵⁴

While this approach prioritises fairness and reduces the risk of disruptive toll increases, it acknowledges that some motorists will be disadvantaged initially. The goal of the initial reform is to ensure as many motorists as possible benefit overall. A phased approach to reform may be required.

Distinct tolling arrangements of the Sydney Harbour Crossings

The tolling arrangements for the Sydney Harbour Crossings, which include the Sydney Harbour Bridge and Tunnel, are distinct from those on other toll roads. With the transition to more uniform arrangements under network tolling, the extent of changes and their impact on motorists may be more significant for these crossings compared to other parts of the network. Key differences include:

- Tolls on the Sydney Harbour Crossings have been increased infrequently, with the last two adjustments made in 2009 and 2023. In contrast, tolls on other roads are updated annually or quarterly. The infrequent toll increases for the Sydney Harbour Crossings may not align with the rising costs of maintaining the infrastructure and the value provided to motorists, suggesting potential toll increases for these crossings in the initial reform phase.
- The Sydney Harbour Crossings charge all vehicles the same rate, in contrast to other toll roads where Class B are charged more than Class A. Further, a rebate scheme exists for motorcyclists, the E-Rider, which does not apply on other toll roads.
- Currently, only the Sydney Harbour Crossings implement peak/off-peak pricing. The Review supports peak/off-peak pricing where it benefits motorists and is considering the future of this pricing model on the Sydney Harbour Crossings.

A further consideration is recent investment in public transport alternatives to the motorway crossings. Public transport alternatives to private vehicle usage of the Sydney Harbour Bridge and Sydney Harbour tunnel are set to improve significantly with the opening of the Sydney Metro (Chatswood to Sydenham) and additional capacity for buses on the Western Harbour Tunnel.

The Review is continuing to assess the phasing of reform, particularly relating to the Sydney Harbour Bridge and Sydney Harbour Tunnel, to deliver consistent network tolling. Focus areas are impacts on heavy vehicles, and benefits of time-of-day pricing and the phasing of reform for the Sydney Harbour Crossings. The planned delivery of Western Harbour Tunnel, scheduled to open in 2028, adds to the need for consideration.

Options for network tolling

The Review has considered several different pricing methods to support a new structure of tolls under network tolling. These include the current pricing structures in place on Sydney’s toll roads, namely:

- fixed pricing, with or without time of day charging as is currently in place on the Sydney Harbour Crossings
- distance-based pricing

⁵⁴ Independent Toll Review. (2023, August). Public Consultation Summary Report. https://www.treasury.nsw.gov.au/sites/default/files/2023-08/202308_toll-review-public-consultation-summary-report.pdf.

- distance and flagfall pricing.

In June 2023, the Review released a summary of the work conducted with the assistance of private consultants, for the previous Government (the Summary of work completed prior to election of the Minns Labor Government). We have further considered the option recommended in that work:

- distance-based charging that could vary by ‘zone’ reflecting different characteristics, including cost of construction of the motorways. Five different geographic zones were proposed across Sydney.

Additionally, in the Review’s Discussion Paper, we sought input on:

- distance based pricing, with or without a flagfall.

Alongside these pricing methods, the Discussion Paper contemplated that in the future a suite of supplementary pricing strategies could be considered to manage demand. These may encompass time-of-day pricing, featuring differentiated peak and off-peak charges, or dynamic pricing, where tariffs are modulated in real-time according to fluctuations in supply and demand. These potential enhancements will be explored in subsequent sections of this report.

The Review’s preferred approach is declining distance based pricing

Considering our terms of reference, our preference is a distance-based pricing option. Under distance pricing, motorists pay a toll that is based on the distance they travel on the toll road network in a single trip. So, the toll reflects the motorist’s use of the road, and the basis for the toll is simple to communicate.

There are precedents in use - distance-based pricing, including a 20 km cap, is in place on the Westlink M7, while WestConnex employs a fixed distance-based toll with a flagfall and cap.

In terms of feedback on pricing methods, the greater use of distance-based calculations in toll pricing was a key theme in feedback from the public, with the eighth most mentions of all themes in submissions. Some submissions expressed the view it is unfair for motorists who use only a small portion of a motorway to be charged the same as motorists who go greater distances, as is the case for example on the M2.

Submissions to the Review, from academics (Professor David Hensher, Professor David Levinson) referenced the use of distance-based approaches in combination with other features. Submissions from the NRMA, Road Freight NSW, Western Sydney Regional Organisation of Councils, Walk Sydney and GoGet all highlighted distance-based models as worthy of consideration.

Some stakeholders expressed concerns about the potential disproportionate impact of distance-based pricing on motorists residing further from key areas. As the Transport Workers’ Union Submission noted ‘The distance-based methodology does not account for the fact that Western Sydney motorists live further out from central locations, and as such, are required to travel upon the full gamut of tolled roads and pay the maximum associated toll charge in order to access their destination. In effect, charges calculated via the distance-based methodology punish motorists living, working or frequently travelling to, from and throughout Western Sydney’. These sentiments were echoed in submissions from Penrith, Liverpool and Campbelltown councils.⁵⁵

Reflecting on the feedback on distance-based pricing, two conceptual approaches for implementing distance-based pricing have been developed. Both seek to soften the impacts on motorists who drive long distances:

- declining distance and infrastructure access charges (the Review’s preferred option),
- distance and flagfall charging.

⁵⁵ Transport Workers’ Union. (2023). Have Your Say submission. Independent Toll Review.

Declining distance and infrastructure access charges (the Review's preferred option)

This pricing approach combines a declining distance base charge with an infrastructure access charge for using specific parts of the toll road network.

The declining distance base charge

Declining distance pricing reduces the per-kilometre cost as journey length increases, a variant of distance-based pricing.

This pricing method embodies fairness by offering a reduced per-kilometre rate for longer trips. Currently, distance-based toll roads employ price caps to achieve similar objectives. Price caps have perverse incentive effects by creating points where further travel is 'free'. In contrast, the declining distance approach values each kilometre travelled. Declining distance pricing also recognises the differential impact of journey lengths on motorway capacity. Shorter trips, involving more lane changes for entry and exit, disproportionately impact motorway capacity compared to longer journeys, which are less disruptive.

In application, additional charges for use of aspects of the network may be included to set a more reasonable starting rate, which then decreases over distance. Additional charges facilitate a smoother transition from existing toll structures to this new method.

Calculating the declining distance charge

Four concepts underpin the declining distance pricing approach:

- Distance Travelled - the total distance travelled by the motorist on the tolled motorway,
- Distance Segment - this term refers to a specific portion of the motorist's journey on a toll road; the motorist's journey is divided into multiple 'distance segments', which are priced differently
- Initial Segment Price - the initial \$/km rate applied to the first Distance Segment
- Declining Distance Rate - the rate at which the toll price decreases for each additional segment.

A worked example

Assume factors that determine the declining distance charge are:

- Distance Travelled is 18 km
- Distance Segment is 4 km
- The Initial Segment Price is \$0.65/km
- The Declining Distance Rate is 15%

Calculating the toll:

- First Segment (4 km): \$0.65/km initial segment price, so 4 km x \$0.65 = \$2.60
- Second Segment (4 km): \$0.65 initial segment price reduced by 15% = \$0.55/km, so 4 km x \$0.55 = \$2.21
- Third Segment (4 km): \$0.55 reduced by 15% = \$0.47/km, so 4 km x \$0.47 = \$1.88
- Fourth Segment (4km): \$0.47 reduced by 15% = \$0.40/km, so 4 km x \$0.40 = \$1.60
- Fifth Segment (2 km): \$0.40 reduced by 15% = \$0.34/km, so 2 km x \$0.34 = \$0.68
- Adding up the costs for each segment, the base declining distance toll is \$8.96.

Infrastructure access charges

The toll's second component, an infrastructure access charge, applies to specific parts of the network, to recover costs of building and maintaining high-value structures such as the Sydney Harbour Bridge and ventilated tunnels.

Historically, significant costs incurred by the expansion of the motorway network, particularly in the construction of bridges and tunnels, have been recovered through tolling. This approach is deemed equitable as it ensures that users benefiting from the infrastructure contribute to its costs, and efficient as pricing is reflective of costs. The proposed infrastructure access charge aligns with this approach, adhering to our reform objectives and the Proposed New Tolling Principles. It also sets a precedent for future tolling on projects by indicating that construction and maintenance costs will be reflected in tolls, supporting financial sustainability.

Factors we have taken into account in setting the initial level of infrastructure charges include:

- Consideration of existing toll road network prices. For example, the infrastructure charge for the Eastern Distributor appears high when considered as a standalone, but when combined with the declining distance charge, approximates current northbound charging.
- The balance between higher access charges and lower charges per distance when redistributing tolls. Including the infrastructure access charge in the tolling methodology means that the base declining distance charge can be kept lower, given the Review’s objectives of maintaining total revenue generated from tolls in the initial reform.
- Setting charges to maintain road usage, balancing efficiency, and fairness, and avoiding traffic diversion

Figure 8.2 provides indicative infrastructure charges. These have been developed as part of the initial modelling of price reform, which is detailed in Chapter 9.

Figure 8.2: Declining Distance and Infrastructure Charge Scenario A (no subsidy) - indicative infrastructure charges

Sydney Harbour Bridge, Sydney Harbour Tunnel	\$3.00
Cross City Tunnel	\$5.00
Eastern Distributor	\$6.00
Lane Cove Tunnel	\$4.00
NorthConnex	\$5.00
WestConnex- M8	\$2.50
WestConnex - M4-M8 Link (Haberfield to St Peters)	\$4.00
WestConnex - M4-M8 Link and Rozelle Interchange (Haberfield to Rozelle)	\$1.50
WestConnex - M4-M8 Link and Rozelle Interchange (St Peters Interchange to Rozelle)	\$2.50
WestConnex M4 East Tunnels	\$1.50
WestConnex M5 East Tunnels	\$1.50
M6 Stage 1	\$0.50

Source: Independent Toll Review

How tolls would be calculated under the declining distance and infrastructure charge

Under this pricing method, all journeys result in a declining distance base charge, and some journeys also incur infrastructure access charges.

Consider a journey which involves travelling 2 km of toll roads, such as on the M7. The only charge that applies is the base declining distance charge. This is \$1.30 (2 km at \$0.65/km).

Conversely, consider a journey that involves travelling 2 km on toll roads and crossing the Sydney Harbour Bridge. Here, an infrastructure access charge applies as well as the base declining distance charge. The total toll is \$4.30 (\$1.30 declining distance charge and \$3 infrastructure access charge).

Distance and flagfall charging

In this pricing method, the toll has two components. First, motorists pay a fixed flagfall component to access the toll road. This flagfall component is the same regardless of the distance travelled on the toll road network. The flagfall charge would be payable once per trip whenever and wherever the motorist enters the tolled network. Second, motorists pay a variable distance-based component calculated using the relevant per-kilometre rate. In practice, for example, this model has involved a third component, a cap on charging after a certain distance is travelled.

A mixture of fixed (in this case flagfall) and variable pricing (in this case distance) is an accepted approach for infrastructure pricing, reflecting the cost to provide the infrastructure, as well as the impacts of use. For example, flagfall and variable distance-based charges are currently in place for WestConnex.

The balance between the flagfall and distance components can be adjusted to promote efficiency and could provide flexibility for future price setting. Higher or lower flagfall charges could for instance be combined with lower or higher per-kilometre distance charges. Higher flagfall charges will discourage some short distance trips on the tolled road network which are more disruptive to the traffic flow on toll roads than longer trips. In a similar way, the components of the declining distance-based charge could also be varied over time as considered appropriate.

The Review considers that the concept of declining distance has advantages over distance and access pricing

While the two models take distance charging as their foundation, there are some key areas of differentiation which make declining distance and infrastructure charging more attractive:

- Declining distance and infrastructure charge is more equitable in current circumstances. Many submissions noted the challenges motorists in Western Sydney in particular face, with the need to drive longer distances to access employment centres and services. Moreover, residents in these areas have less access to public transport services.
- The infrastructure component of declining distance and infrastructure charge tolling better aligns user benefit with tolling and makes the costs of providing the network more transparent to motorists.
- The Declining Distance pricing model offers more flexibility to adapt to changes in conditions, both in the transition to Network Tolling and over time. Under declining distance, the initial segment price, the declining distance rate, the length of distance segments, and the level of infrastructure charges can be adapted to circumstance. Under fixed access, the available levers are the access fee, the constant distant charge and when the cap applies.
- The price signals from declining distance and infrastructure charge are more finely tuned and appropriate, compared to the abrupt transitions with a flagfall and distance-based charge with cap features. The cost per kilometre decreases gradually as the distance increases. In contrast, the flagfall fee model has a more abrupt cost structure –there’s a higher cost for short trips due to the fixed flagfall fee, but the variable fee remains constant per kilometre until charging stops with a cap. Where there is a cap in the flagfall and distance approach, the implicit zero price distorts motorists’ behaviour.
- As the initial charge with declining distance and infrastructure charge would generally be lower than the flagfall in flagfall and distance pricing, there would be less discouragement on short trips when there is unused capacity.

Reflecting on the feedback on distance-based pricing, and our reform objectives and constraints, a declining distance and infrastructure charge approach is the preference at this stage, in combination with infrastructure charging. The application of this charge is further explored, in combination with other recommended reforms, in Chapter 9.

The Review has moved away from pricing by geographic zones

The preferred option documented in the Summary of work completed prior to election of the Minns Labor Government involved setting different distance-based tolls in five geographic zones across Sydney. Under this concept, tolls were charged based on the zones traversed during a vehicle's journey. However, this approach faced criticism due to the weak relationship between the toll zones and the actual costs of road usage and the inequity associated with users being charged different distance rates according to where they travelled on the network. Such a misalignment could potentially lead to economic inefficiencies and pose challenges in policy implementation. Zones are arbitrary and need to be amended over time. Furthermore, the zonal system was seen to add complexity, particularly when navigating across different concessions. It also raised concerns that the zones might be perceived as 'pricing access' to specific areas of the city, rather than focusing on the actual journey.

The Review has considered further analysis of the implications of the pricing structure, and while the modelling is still not definitive, the Review will not explore zonal pricing further.

Implementation considerations for network tolling

Moving to network tolling will offer significant benefits but will require changes to toll setting, toll collection arrangements and agreements with concessionaires, which are discussed in Chapter 10 on implementing institutional reform.

Additionally, there will be considerations related to community acceptance, requirements for facilitating infrastructure investment, and impacts on the transport network, which are discussed in the following sections. Further consideration will be given to these issues ahead of the final report.

Community acceptance and perceptions of fairness

The aim of network tolls is to improve outcomes for most motorists. The reform targets a fairer toll structure that would deliver a more efficient road network. Anticipated efficiency gains include reduced and more predictable travel times due to the overall road network operating more effectively.

The early stages of our reforms focus on implementing network tolls within the existing revenue envelope. It is not feasible to achieve reductions in tolls and travel times for all users at this time due to this necessary constraint. Indeed, to rebalance tolls in the network to better reflect fairness criteria, it is probable that some users will pay less, while others will pay more or approximately the same.

Ongoing assessment of impacts of the toll changes across Sydney, with a particular focus on areas experiencing relative disadvantage will be necessary. The Review has been monitoring these matters with analysis and modelling as part of the process of developing recommendations.

More broadly, all travellers (including those on public transport) may be impacted by a transition to network tolling. During this period, the adjustments in pricing will necessitate broader monitoring of the Sydney transport network including a more deliberate consideration of travel times and routes. Ongoing consultation will be crucial to refine the design and foster community acceptance. There is also an opportunity to enhance community confidence by implementing the reforms identified in Chapter 12, aimed at improving the motorist experience. Demonstrating early benefits of the reform for the community and visible improvements in the communication of pricing information and resolution of complaints can foster openness to more substantial reforms.

After implementation, ongoing monitoring and adjustment of pricing, in response to the emerging benefits and drawbacks of the new toll structure, will facilitate a smoother transition. This would be supported by the institutional reforms described in Chapter 10.

Network enabling infrastructure

Network tolling cannot be implemented without upgrading the existing tolling infrastructure and systems. Changes to implement these pricing recommendations could include additional toll gantries at toll road entry and exit points.

A single toll reconstruction engine would be required to take trips from the various NSW toll road roadside systems and construct a single trip, calculating the applicable toll for the purposes of charging the motorist. Additionally, through a revenue adjustment mechanism (discussed in Chapter 10), this engine would allocate portions of tolls charged to motorists to the relevant toll road operators. The various rules and logic in the toll engine will be key, and it would need to be a configurable system that can handle millions of roadside transactions on any given day. This investment would be required before the transition to network tolling. Precision to a legal standard will also be a factor in the infrastructure and systems design to ensure tolls are readily enforceable.

Transport network impacts

Any changes to the approach to tolling will have flow-on impacts on demand for the transport network. These changes could lead to unexpected shifts in road usage behaviour and modal shifts, potentially causing difficulties for the reform process. To understand this risk better, additional modelling and analysis will be conducted as the recommendations are refined for the Final Report. Ongoing monitoring of impacts once the reform is implemented will also be important.

Areas of concern include changing traffic patterns across the road network (tolled motorways, untolled motorways, arterial roads and local roads). For example, if toll prices are lowered, motorists could change their route to use the toll road network. This could necessitate broader network enhancements or modification which might require additional capital investment and affect community benefit. Road widening and/or interchange upgrades may also conceivably be required in some locations to handle change in demand on the toll road network in response to changed toll prices. Further assessment of the potential for this will be conducted prior to the Final Report.

Additionally, adjusting toll pricing structures could influence motorists to either switch to public transport or, conversely, opt for more car trips, with implications for the required capacity on each network. The exact impact of this potential shift, especially in light of investments in public transport upgrades like Sydney Metro, is uncertain in the absence of more detailed modelling. There is a risk that a shift towards use of the road network over public transport, would result in poorer road network outcomes (i.e. slower travel times, reduced trip reliability, etc.), poorer sustainability outcomes and increased environmental impacts such as noise and pollution. Decreasing use of public transport also reduces the cost effectiveness for the State to provide public transport services.

Recommendations:

Recommendation 2: The NSW Government should adopt network tolling. Implementation will require detailed planning, investment in infrastructure and close monitoring of impacts.

Recommendation 3: The NSW Government should adopt declining distance-based pricing as the foundation of network tolling. This would lead to a simpler, more consistent and coherent system of tolls which aligns more closely to the criteria the Review has been asked to consider, namely efficiency, fairness, simplicity and transparency.

The considerations for toll relief as part of the transition to network tolling

Our aim in transitioning to network tolling and institutional reforms (see Chapter 10) is to establish tolls that reduce the necessity for toll relief or minimise the circumstances in which it is applied. In the transition to this future state, there is a consideration for government as to how toll relief is phased out.

There are considerable challenges involved in providing toll relief, as documented in Finding 14 and Finding 15. Current toll relief schemes are complex and unsustainable, favouring middle- and high-income households, as indicated by higher reported intent to claim among these groups in the Toll Review Survey. They also lead to increased costs for the government and benefit toll road operators by boosting traffic. Motorists may find it difficult to determine how much their trip will cost them and how to claim rebates. Moreover, these schemes may encourage car use over public transport, contradicting public transport promotion efforts.

How the Review is thinking about the future role of toll relief

The Review identifies three broad approaches to dealing with toll relief:

- a. An end to toll relief as part of the initial transition to the new toll pricing structure under network tolling. The network tolling strategy can be refined to offer motorists more efficient and equitable toll rates, reducing the case for toll relief. There are clear advantages to this approach: a simpler and fairer system for the motorist, and reduced demand on government to provide toll relief (allowing the funds to be spent elsewhere).
- b. As an alternative, toll relief could be continued indefinitely but applied differently, namely, to directly reduce tolls. This approach would lower tolls for the benefit of all motorists. Such a reduction in tolls is anticipated to increase the use of the toll road network and potentially lead to efficiency gains for all motorists by encouraging a more balanced distribution of traffic across both tolled and untolled roads and reducing travel times overall. However, this strategy may limit the government's ability to allocate funds to other priorities.
- c. A hybrid option, where targeted toll relief is provided in combination with network tolling, but more sharply targeted, for example, to certain user types. This option could involve the gradual phase out of toll relief.

The Review has modelled approaches a) and b) in greater detail to explore the spectrum of policy options available. The approach and results are discussed in Chapter 9. Further modelling and analysis will be undertaken ahead of the Final Report.

The Review acknowledges that a transition plan may be required to allow motorists to adjust to toll relief changes, particularly for established toll relief schemes like the M5 cashback.

Recommendations:

Recommendation 4: The NSW Government should consider the role of toll relief in supporting the transition to network tolling. Significant changes in toll relief may need to be phased over time.

Principles to consider for any extension of toll relief

Where possible, upfront toll prices should be efficient, fair, transparent and simple without requiring toll relief schemes. Where targeted toll relief is required, toll relief should apply the following principles:

- Toll relief should be targeted to those that are most in need to the extent practicable through means-testing. Targeted toll relief rebates are less simple but may be necessary to promote fairness and efficiency.

Where more targeted rebate schemes are necessary, they should be means-tested, considerate of whether the motorist has viable alternative travel options, preserve price signals and be network based.

- Toll relief should take into account the availability of alternative transport options, in particular, alternative non-tolled roads and public transport. Any toll relief rebates should consider public transport access levels. Relief should be scaled based on whether motorists have viable public transport options.
- Toll relief should avoid distorting price signals (e.g. they should not make trips on the tolled network free unless there are good policy reasons for doing this). Tolls are an important price signal which influence how customers use the network. Toll relief rebates which make some trips on the current tolled network toll free can change the attractiveness of toll roads relative to untolled roads and public transport. By making some trips free, there is a risk of reducing the economic benefits realised from toll roads through induced demand and increased congestion.
- Toll relief should apply network wide. It could be argued that means tested toll relief rebates should apply equally to travel on all parts of the toll road network. This is not the case with, for example, the cashback scheme which is currently available for travel on the M5 South-West and was previously available on the M4. Asset-specific toll relief leading to different prices for similar trips on the toll-road network, without that difference being due to means-testing or public transport access level is not consistent with fairness.

Recommendations:

Recommendation 5: If NSW Government chooses to extend or phase out toll relief, it should be with consideration of the following principles:

- Toll relief should be targeted to those that are most in need to the extent practicable through means-testing.
- Toll relief should take into account the availability of alternative transport options, in particular alternative non-tolled roads and public transport.
- Toll relief should avoid distorting price signals (e.g. it should not make trips on the tolled network free).
- Toll relief should apply to the entire toll road network.

In the future, toll road pricing strategies could be broadened to enhance congestion management, efficiency, and fairness

Although congestion does not currently appear to be a concern on the toll road network (Finding 9), this could change over time with population and economic growth.

Under a network tolling approach, future strategies could be adopted to mitigate congestion. This strategy would use pricing to influence travel patterns—when, where, and how people travel—thereby optimising traffic volume and operating speeds for the benefit of the broader road transport network. Such strategies might involve lowering tolls in areas with under-utilised capacity, which has not occurred under current arrangements.

This approach aligns with the objective of efficiency. Moreover, by diminishing peak demand through tolls, the need for network capacity investments—such as lane additions or new toll road constructions—could be reduced or deferred. This would allow government or user funds to be put towards other priorities.

Overview of pricing strategies to align toll road pricing to varying time of day demand

This section explores peak/off-peak pricing opportunities, featuring predetermined rates that vary throughout the day, like current tolling on the Sydney Harbour Bridge and Tunnel, and dynamic pricing, which adjusts according to traffic conditions.

Fundamentally, both peak/off-peak and dynamic pricing address the varying impact each additional traveller has on the transport network. The additional cost related to one more traveller using the transport network is often referred to as 'marginal cost'. This encompasses not only the individual's cost but also the external cost imposed on others. The marginal cost of travel is not constant throughout the day. It varies significantly based on the level of congestion. During peak demand, when many people are using the transport network, marginal cost is higher because each additional traveller contributes more to congestion. For example, each additional motorist on a congested road reduces journey time and reliability for other motorists, and each additional passenger on a crowded public transport service decreases journey amenity for all passengers.

Peak/off-peak pricing

Peak/off-peak pricing involves tolls that fluctuate during the day. Higher tolls apply during peak periods, usually weekday rush hours linked to commuting. Lower tolls apply during times of decreased demand, such as midday, evenings, and weekends. This well-established pricing method is employed on the Sydney Harbour Bridge and Tunnel, in Sydney's public transport pricing, and in sectors like electricity.

Peak/off-peak pricing incentivises travel time adjustments, serving as a tool to manage network congestion. Lower off-peak prices may entice cost-conscious motorists to use toll roads in off-peak periods, enhancing toll road capacity utilisation and offering benefits to users. Importantly, peak pricing may incentivise the use of alternatives like public transport during peak times, and so help relieve congestion on the road network, during peak periods.

Feedback to the Review from institutions was generally favourable towards peak/off-peak pricing. Responses from the general public indicated an expectation that if they were paying tolls they should not have to put up with unnecessary congestion. Congestion on toll roads lowered the value of their trips and their willingness to pay existing tolls. Comments are in Figure 8.3.

Figure 8.3: Institution and public perspectives

Submissions from institutions were broadly positive of peak/off peak pricing. However, many submissions from the general public supported lower, not higher, pricing when traffic builds up:

Grattan Institute:

- 'A new scheme should set peak-period charges that vary by location and offer free or cheap use of the roads when they are not overly busy. It should build in a mechanism for updating tolling rates from time to time when road conditions change.'
- '... tolling for congestion management means tolls should vary by time of day and location, and when conditions change, toll rates should change too.'
- 'The aim should be to change the behaviour of drivers who are flexible about when, where, or how they travel.'

Road Freight NSW:

- 'Off-peak discount tolling for trucking companies, and 'last mile' delivery, to incentivise trucking companies and others to perform work after peak times would work well and lead to safer roads because trucks and deliveries are not on the roads during light vehicle commute times.'

Transurban:

- ‘The current capacity opportunities and congestion challenges on roads may be partly addressed through a pricing mechanism. Time of day pricing may be effective in demand and congestion management, while off-peak pricing for trucks can encourage them to drive at less busy times, providing a safer and better customer experience for daily commuters. A time-of-day travel pricing signal could prompt people to consider their travel more deliberately.’

Perspectives from the general public in support of peak/off peak pricing:

- ‘Motorists should be discouraged to use their vehicles during peak hours and should pay a premium for tolls. This will also help reduce traffic during peak hours and promote public transport usage and ride sharing.’
- ‘I don’t mind paying tolls if the roads are better and less congested.’

Perspectives from the general public critical of paying tolls when faster/uncongested travel is not provided:

- ‘As a user of a toll road, I’m paying to get somewhere faster than I would otherwise. As such, I believe the toll road operators need to provide discounts to tolls charged when we aren’t able to travel at the normal speed.’
- ‘No toll should be charged when the toll way is congested, and the average speed is below 40 km/h.’
- ‘I don’t mind paying tolls if the roads are better and less congested.’
- ‘If road works, crashes high traffic etc means that trip becomes longer. We shouldn’t have to pay.’
- ‘The toll road operators should be giving back refunds when the travel on such road exceeds the nominal time.’

Source: Public consultation submissions, 2023

Case study: Singapore’s approach to pricing

Singapore is widely recognised as a pioneer in road pricing and congestion management and has implemented pricing strategies since the 1970s to regulate motorway usage. In Singapore, tolls vary by set times and locations, aiming to maintain target speeds on the motorway network. Traffic conditions are continually monitored, and prices are reviewed quarterly. The approach is further described in Figure 8.4.

Figure 8.4: Road pricing in Singapore

Overview

The Land Transport Authority (LTA) of Singapore is responsible for advancing the country's land transport infrastructure and systems. LTA aims to enhance connectivity through a robust land transport network, which includes substantial investment in public and active transport as well as the road network. The LTA is involved in managing traffic congestion and providing a better overall road experience for Singapore's motorists, focusing on congestion management, not revenue generation. Parking supply is also managed in line with congestion objectives.

How prices are set

A 2018 OECD paper on road pricing summarises the rule-based approach used for setting prices in Singapore: 'Singapore's electronic road pricing system uses prices determined by optimisation of traffic flow. Prices are set to ensure traffic speeds are maintained at agreed levels: 20-30 km/h on arterial city roads, 45-65 km/h on expressways. Electronic Road Pricing rates are determined by a quarterly review of traffic speeds of priced roads and during the June and December school holidays. The pricing formula was developed using a traffic flow model developed by the Land Transport Authority. When speeds fall below the target levels prices are increased. When speeds rise above the target range, prices are reduced. The benefit of this rule-based methodology is transparency. This aids understanding for both the public and decision makers and underpins public support for the system. It also permits prices to be set at the level needed to contain congestion and modified when needed, without having to revert to a political decision each time changes are required.'

How users are charged

Motorists are charged according to their location and time of travel when they pass through motorway gantries. An example of this is a trip from Woodlands to Raffles Place via Yishun - CTE - CBD, which would cost about S\$15 during peak as the driver would pass about 5 gantries, whereas during lunchtime, it would cost about S\$2. Tolling only applies during operational hours for the gantries, which are not active during Sundays, public holidays, and eve of major public holidays.

Tolls are set in half hour increments, and information on the real time level of the toll is made available to motorists with on street signage to support motorist decision making.

Outcomes

The Singapore Government's data shows that motorists speeds have been able to be generally influenced by variable electronic road pricing (ERP) (i.e. speeds have improved as ERP rates have increased and vice versa). Reports published also show a decrease in road traffic by approximately 15 per cent across Singapore's roads. The system has been credited with maintaining travel speeds of approximately 50-65 km/h on expressways and 20-30 km/h on arterial roads, despite rising traffic volumes over the years, alongside many other societal benefits, such as increases in car-pooling, public transportation use and spreading of peak hour traffic into off-peak hours.

Additionally, the ERP system has successfully managed to maintain consistent pricing over the long-term, minimising the burden of tolls on motorists. CBD ERP prices have remained the same since 2007, even though inflation and wage growth has remained positive since.

Source: Independent Toll Review. Local Transport Authority. The Organisation for Economic Cooperation and Development. OneMonitoring. Environmental Defense. The Ministry of Transport.

Dynamic pricing

Dynamic pricing entails dynamically adjusting prices for specific time periods, depending on congestion levels. When traffic demand increases and threatens to reduce speeds below the desired threshold, prices are adjusted

upward to discourage more vehicles from entering the congested section. Conversely, when traffic eases, prices may be lowered. Applications of dynamic pricing vary, ranging from entire road networks to specific roads or city areas. This report envisions its application within the toll road network. The mechanics of the pricing approach also vary, including the frequency of price resets and the advance notice given to motorists about changes.

Examples of dynamic pricing in practice for toll roads are limited, such as the 495 Express Lane in the US. Examples of dynamic pricing in other sectors include aviation pricing in Australia, where ticket prices vary by route, time of day and date booked according to demand, and rideshare services which adjust prices dynamically based on driver supply and travel demand.

Implementation considerations

Further work is required to assess and quantify the opportunities to use peak/off-peak pricing or dynamic pricing.

Despite growing interest, changes to road pricing can be complex to implement, especially dynamic pricing. Public perception of fairness can be a barrier, as seen in the negative reactions to Uber's surge pricing during high-demand periods. However, peak/off-peak and dynamic pricing should not just be associated with higher congestion charges. Lower tolls at other times should also be seen as appropriate.

Changes in road pricing can significantly impact social welfare, particularly for those with limited travel flexibility or no alternatives to tolled motorways.

The implementation considerations outlined for implementing network tolling would also apply to adopting flexible pricing techniques. Depending on the pricing technique, further investment in enabling technology and operational processes may be required. Investment may be required in capability to set and monitor prices, including data analytics, monitoring of traffic conditions, pricing effectiveness, and user satisfaction.

An opportunity to trial peak/off-peak pricing for heavy vehicles

To further explore peak/off-peak pricing, a trial could be conducted with heavy vehicles. Heavy vehicles currently have reduced incentives to use the toll road network for off-peak journeys, as travel on free alternatives becomes relatively faster and more reliable. There is an opportunity to encourage heavy vehicle movements which are going to occur in the off-peak regardless of tolling policy to use a more efficient route.

Reducing tolls for heavy vehicles during off-peak hours aligns with principles of fairness by aligning tolls more closely with the value derived from the trip. It could improve toll road network use, offering community benefits through less crowded arterial roads and possibly lowering noise and other social impacts.

Due to their focus on cost efficiency, profit margins, and the predictability of their operations, heavy vehicle operators are a good group to trial reform on as they are more likely to be attentive to and influenced by price signals such as toll costs.

The financial impact of this recommendation - whether it is revenue positive, neutral, or negative - will largely depend on the extent to which the increase in traffic volume on toll roads during off-peak times compensates for the reduced toll rates. It is anticipated that any incremental rise in toll road maintenance costs due to increased heavy vehicle use during off-peak periods would be minor and more than offset by a reduction in maintenance costs on arterial roads.

Note: the primary goal of implementing peak and off-peak pricing for heavy vehicles is not to shift freight travel from day to night, but rather to optimise the use of the road network, manage congestion more effectively and reduce social impacts like noise. It's important to recognise that the toll pricing for heavy vehicles is not the determining factor influencing the timing of freight movements. Instead, other factors in the logistics and supply chain play a more significant role in determining whether freight travels during the day or at night. Penalty rates and decisions in up and down stream markets (such as customer delivery windows and distribution centre operating hours) have greater influence on when freight moves than toll prices.

Recommendations:

Recommendation 6: Flexible pricing techniques including peak/off-peak pricing, and dynamic pricing should be available as part of a network tolling system.

Recommendation 7: The NSW Government should consider an initial focus on freight operators for peak and off-peak pricing.

Updating vehicle classifications and charges

Vehicle classification groups vehicles into different classes based on size, weight, or axle number. It is current practice in New South Wales to charge vehicles different amounts for the use of toll roads, based on their characteristics. In New South Wales currently, the level of toll imposed is largely based on vehicle dimensions, and approaches vary slightly across toll roads. The Review understands this reflects how available technology has supported different tolling arrangements over time.

Recognising these variations in classification, vehicle classes for tolling purposes could be expanded and standardised to promote a more uniform pricing system. In addition to rethinking vehicle classes, it is also timely to review vehicle multipliers and charging arrangements. This is especially pertinent considering Finding 5, which documents that the current toll pricing system for motorcycles, towed recreational vehicles like caravans, and smaller trucks does not adequately meet the principles of fairness, efficiency, and sustainability.

Approach to setting toll multipliers

Toll multipliers, employed as a pricing strategy on toll roads, involve charging vehicles a rate that is a multiple of the base rate designated for Class A. For example, a Class B) might incur a charge three times that of the base rate for Class A, reflecting its distinct characteristics and impacts.

Establishing multipliers is not an exact science and requires careful consideration of several factors:

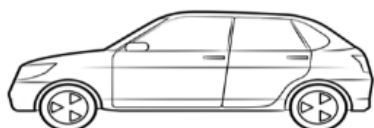
- Road space utilisation and contribution to congestion: larger vehicles, including heavy trucks, occupy more road space and impact traffic flow. This is illustrated in Figure 8.5, which illustrates vehicle lengths for the vehicle classifications the Review is considering. Higher tolls for larger vehicles can also compensate the toll road operator for their impact on motorway throughput and therefore, revenue. Whereas, conversely, smaller vehicles like motorcycles occupy less space and this is a rationale for charging them lower tolls.

Figure 8.5: Length comparison for vehicle classes considered in the Review - Motorcycle (new class), Class A, Mid Class Heavy Vehicle (new class) and Class B

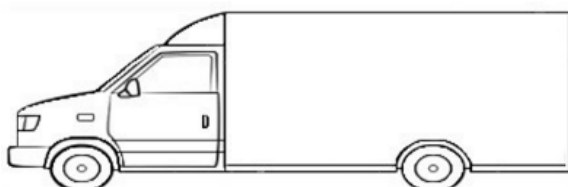
Motorcycle (a new class)



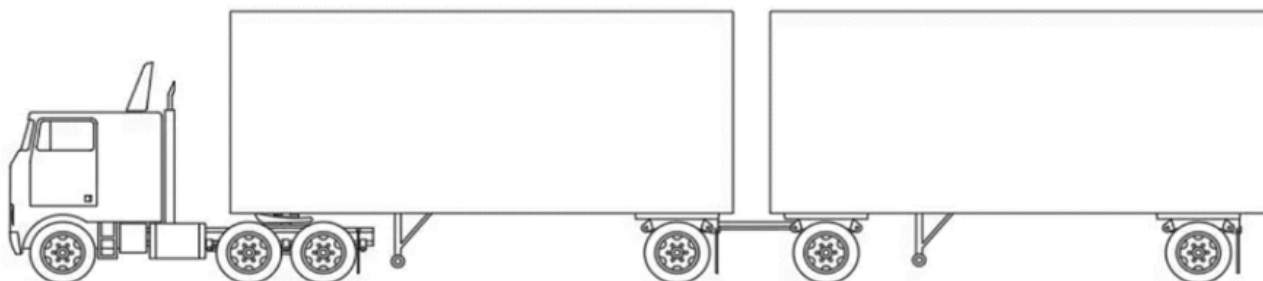
Car (Class A)



Mid Class Heavy Vehicle (a new class)



Other Heavy Vehicle (Class B)



Source: Independent Toll Review

- Charging according to the benefit the motorist receives from the trip: different vehicle classes derive varying benefits from toll road usage. For instance, commercial vehicles may value time savings and reliable journeys more due to their higher operating costs. Heavy vehicle operating costs per hour (including fuel and vehicle maintenance costs) are much higher than those of light vehicles. This means they benefit more from travel time savings and more reliable journeys offered by motorways.

- Proportionately aligning contributions to cost recovery to the relative costs of providing toll road infrastructure through upfront capital costs: The toll multiplier aims to align the toll charges with the actual costs imposed by different vehicle types. This includes considering the higher capital expenditure for building robust roads to accommodate heavier vehicles. To cater for repetitive heavy vehicle loading, the construction of a motorway requires higher upfront capital expenditure. Higher axle weight contributes to a higher amount of construction labour, plant and materials costs to deliver a safe road to acceptable standards. This includes higher and wider tunnels, stronger bridges, thicker pavements and lower grades. For example, to cater to heavy vehicles, NorthConnex and WestConnex were designed and constructed with lower grades. In a related example, motorcycles are not a major cost driver for the upfront capital cost of toll road infrastructure.
- Proportionately align the contributions cost recovery to the relative cost of maintaining toll road infrastructure: Motorways are designed to cater for the axle loading imposed by heavy vehicles. However, over time, heavy vehicle usage leads to greater pavement wear and tear than light vehicles. This requires more frequent repairs and higher road maintenance costs. The Equivalent Standard Axle (ESA) calculations is an Austroads method for determining a standardised wheel load using the material damage exponent theorem. A lower ESA score represents reduced pavement wear. An illustration of the relative difference in ESAs between light vehicles and rigid trucks is summarised as follows:
 - 2 axle light vehicle (Gross Mass of 4.5 tonne) = 0.06 ESA
 - 2 axle rigid truck (Gross Mass of 15 tonne) = 3.0 ESA

In this comparison, the pavement wear from a 2-axle rigid truck is 50 times greater than the light vehicle. This is an illustrative example, however there are a wide range of truck configurations and differences in ESA. Conversely, motorcycles contribute even less to road damage than cars.

- Tax Implications for Businesses: For commercial vehicle operators, tolls can be a business expense and may be tax-deductible, which effectively reduces the impact of the toll multiplier on these vehicles. For example, for a profitable business subject to a corporate tax rate of 27.5 per cent, a 3x heavy vehicle multiplier equates to an effective heavy vehicle toll multiplier of 2.18x.

Balancing these factors, there are opportunities to improve the fairness and efficiency of tolling by modifying vehicle classifications and multipliers and applying these consistently network wide.

A consistent definition for Class A vehicles, and a more equitable classification and charging system for towed recreational vehicles and motorcycles

Building on the need for fairness and efficiency, the Review is considering an expansion of the tolling classes, adopting a unified definition for Class A vehicles (cars), creating a new classification and multiplier for motorcycles and revising the approach for towed recreational vehicles.

Classification of vehicles and charges have evolved as the toll network has expanded, in line with available technology and policy objectives. Currently across the network there are distinct Class A and Class B classifications for the M2, Lane Cove Tunnel, Cross City Tunnel, M5, NorthConnex, M7 and WestConnex, and a variation of Class A and Class B classifications in place for the ED and M5 South-West. In contrast the Sydney Harbour Bridge and Tunnel has a single class for tolling.

The changes described In Figure 8.6 would result in more consistent, efficient, and fairer charging.

Figure 8.6: Potential NSW Tolling classes and multipliers, to apply network wide

	Definition Note: towed recreational vehicle are excluded from size dimensions.	Multiplier	Summary of change
Motorcycle (a new Class)	A two wheeled motor vehicle, including motor vehicles with a trailer or side car	0.5	Currently, motorcycles pay the same toll as cars, despite using less space on the road as smaller vehicles and contributing to less wear and tear as lighter vehicles. This recommendation introduces a multiplier of 0.5.
Car (Class A)	A vehicle that is <ul style="list-style-type: none"> • not a motorcycle, and • 2.8 metres or less in height, and • 12.5 metres or less in length. 	1	This change introduces a consistent definition of car across the network.

Source: Independent Toll Review

Refining the NSW tolling classes and excluding towed recreational vehicles from size dimensions would allow for the removal of the Large Towed Recreational Vehicle Toll Rebate and the E-Rider tolling product for motorcycles using the Sydney Harbour Bridge and Tunnel. It would also bring approaches for motorcycles in line with Victoria and Queensland.

By excluding towed recreational vehicles from size dimensions, any vehicle combination that includes a towed recreational vehicle will be charged based on the class of the towing vehicle. In most instances, this will be a Class A vehicle. This adjustment simplifies the tolling process and ensures consistency across state lines.

The implication of Figure 8.6 is that vehicles not meeting the definitions of Motorcycle, Car (Class A) or towed recreational vehicle would be considered Class B. In practice, such vehicles would be majority heavy vehicles.

Implementation considerations for the new motorcycle classification

Although experience in Victoria and Queensland suggests the feasibility of the Review’s draft recommendation on motorcycles, further consideration of safety, traffic management impacts, and technological implications of this proposal will be undertaken prior to the Final Report.

Additionally, introducing a new class for motorcycles is anticipated to decrease toll revenue. This shortfall, if not compensated by other means, necessitates increased tolls for other users. Given that motorcycles constitute a minor proportion of vehicles on toll roads, the overall impact of this change is expected to be minimal.

Directions in classification and charging for Class B (heavy vehicles)

A note on freight and freight impacts

The Review has received numerous submissions around freight and freight impacts, and has also considered government policy objectives for freight, including mode shift from road to rail freight. The Reviewers are still

considering these issues and invite further submissions. The recommendations in this section represent the preferences at this stage.

The Review notes that a two-year trial is underway, offering rebates on current Class B multipliers to vehicles travelling on the M5 East and M8.⁵⁶ The trial's aims are to reduce heavy vehicle congestion and amenity impacts on local areas, thereby improving the efficiency of the road network and local outcomes. This trial will assess the effectiveness of the rebate, which reduces the trip cost by a third, in encouraging Class B to use toll roads. The Review will consider early results as relevant.

The preferences of the Review for heavy vehicle multipliers

The Review recommends maintaining the current NSW Government policy position that vehicles exceeding Class A vehicle dimensions should be charged more than other vehicle classes. Whether the general application of a 3x multiplier is the appropriate toll price multiplier is to be determined and will require further modelling to be undertaken.

NSW freight policy is to encourage high productivity vehicles to use toll roads and therefore will set a suitable multiplier that provides value to heavy vehicles. Encouraging high productivity vehicles is considered desirable by Transport for NSW for safety and environmental reasons, as it would reduce the number of heavy vehicles on the network. This is consistent with what was heard from stakeholders such as the National Road Transport Association's (NatRoad) submission to the Reviewers:

Figure 8.7: National Road Transport Association's (NatRoad) submission

The option considered by the former government would see a new four times multiplier for 19 metre combinations and a new five times multiplier for combinations greater than 19 metres... This revenue raising measure ignores the benefits of moving freight with fewer individual truck trips. When moving 1,000 tonnes of freight, a 12.5-metre-long truck (the maximum length that would continue under the existing three times multiplier if this proposal proceeded) requires 77 individual trips to get the freight task done. A 19 metre semi-trailer can move the same freight task in 42 individual trips, while a 26 metre B-double can get it done in 26 trips.

Source: Public consultation, stakeholder submissions

The Review also considered the submission by Road Freight NSW that toll multipliers should be based on the mass of the load that a heavy vehicle is carrying. We recognise that a consideration in setting tolls is the contribution of vehicles to wear and tear on roads, and that the current approach based on size dimensions reflects available technology.

The Review would like to hear more from stakeholders on this topic, and is interested in case studies on weight based tolling in use.

Investigating a new classification: Mid class heavy vehicles (MCHVs)

The 2022 Toll Road Pricing Relief and Reform Review considered up to four heavy vehicle groups, with multipliers considered in the range of 2.5x for the smallest group to 5x for the largest. This Review recommends moving towards two classes for heavy vehicles - Class B and a new intermediate class: MCHVs.

There is potential merit in the introduction of a new intermediate class for small Class B vehicles, to incentivise them away from local roads, resulting in improved outcomes for the community, and increasing benefits (safety, travel time savings) for operators of MCHVs. This would reflect efficiency as well as fairness, as small Class B

⁵⁶ NSW Government. (n.d.). Truck Multiplier Rebate. <https://www.nsw.gov.au/driving-boating-and-transport/tolling/truck-multiplier-rebate>.

vehicles have a lower impact on maintenance costs and the cost to deliver the original infrastructure than large Class B Vehicles.

To incentivise this shift, smaller vehicles currently in Class B, could have a reduction towards a more appropriate multiplier. As an indication, Brisbane and Victoria currently use a multiplier of 1.5x-1.6x respectively for their Light Commercial Vehicle class, which is comparable compared to the proposed MCHV class. Class A dimensions are quite generous lengthwise.

The new intermediate class could therefore target vehicles that just exceed the Class A height cut-off. The potential parameters for the class are based on currently available technology; two axles, greater than 2.8 metres and no more than 3.3 metres in height, and 12.5 metres or less in length. This is illustrated in Figure 8.5. These parameters would capture motorhomes and refrigerated delivery trucks. Improvements in advanced camera technology may enable different parameters to be used and reduce the costs of administering the intermediate class.

Introducing a new class and lower multiplier is anticipated to decrease overall toll revenue, even if it attracts more vehicles to the toll roads. This shortfall, if not compensated by other means, necessitates increased tolls for other users. As with the case of the new class for motorcycles, the revenue impacts may not be significant, but further analysis is required.

Engagement with motorway operators and other jurisdictions would be required as part of the detailed cost/benefit assessment, including to understand how many vehicles would fall into this new category, and any lessons learned or challenges from similar intermediate categories in other jurisdictions.

There may also be administrative challenges. Similar intermediate tolling classes in other Australian jurisdictions have created complexities for the toll collection process. Limiting the intermediate class to 2 axle vehicles (rather than purely size dimensions) may necessitate additional individual licence plate lookups to understand the make and model of the vehicle. The next phase of analysis could demonstrate that the 2-axle criterion for MCHVs is not feasible, and the criteria should be limited to size dimensions.

Simplifying the treatment of public bus services

Apart from classifications and multipliers, another area of focus is the tolling of public bus services, where administrative burden could be simplified for bus operators.

Currently, buses providing a public transport service are subject to tolls on the Hills M2, Sydney Harbour Bridge and Sydney Harbour Tunnel. The cost of any tolls incurred providing public transport passenger services is then reimbursed under existing bus operation contracts. The Review recommends simplifying the arrangements allowing public bus services to be exempt from tolls.

This recommendation is consistent with the recommendations of the Transport Portfolio Committee Inquiry into road tolling regimes report (see Appendix A).

Recommendations:

Recommendation 8: The NSW Government should further explore refining tolling classes in NSW, adopting a uniform definition for Class A vehicles, and a fairer classification for towed recreational vehicles and motorcycles.

Recommendation 9: The NSW Government should continue to apply toll price multipliers to vehicles exceeding Class A vehicle dimensions.

Recommendation 10: The NSW Government should investigate a new classification for mid-class heavy vehicles to incentivise these vehicles to use toll roads.

Recommendation 11: Multipliers should be applied consistently across the toll road network.

Recommendations:

Recommendation 12: The NSW Government should simplify the arrangements allowing public bus services to be exempt from tolls to ensure consistency across the network.

Expanding toll coverage to improve outcomes for motorists

Alongside implementing network tolling, and updated and consistent vehicle classifications and multipliers, there could be options to optimise toll coverage of the motorway network. This could offer a more consistent and equitable experience for motorists and achieve efficiency objectives. However, the Review is mindful of the Government's commitments not to introduce tolling on existing roads not currently subject to tolling.⁵⁷

Although expanded tolling coverage is not currently under consideration by the Government, once the toll system is on a path to operating under a fairer and more effective regime (as proposed in Chapter 10), there may well be justifiable grounds to explore changes to the tolled network.

The Government could consider two phases of reform. Initially, it could explore specific improvements to Sydney's existing toll network to increase consistency, equity, efficiency, and effectiveness. Subsequently, a more comprehensive integration of Sydney's motorways into the network tolling system could be examined. This approach, envisioned as part of the third phase of reforms outlined in Chapter 10, would aim to enhance efficiency and fairness while possibly lowering current toll rates.

Targeted, near term changes to improve efficiency and fairness

Currently, the Sydney Harbour Bridge (SHB), the Sydney Harbour Tunnel (SHT), and the Eastern Distributor (ED) are tolled in one direction, while all other toll roads are tolled in both directions. These arrangements have been in place for many years, since July 1970 in the case of the Harbour Bridge and since the opening of the Eastern Distributor in December 1999, when tolls were still collected manually.

One way tolling has had a significant impact on traffic flows over this time. Where zero tolls apply motorists can be attracted to use these roads in preference to other available options. Traffic volume differences on the roads of around 20 per cent during peak periods are observed. Over time traffic management has had to work around the effects of these pricing arrangements. However, this becomes more complex as the network of toll roads expands and will be further challenged with the expected commencement of the Western Harbour Tunnel in 2028.

Two-way tolling on all parts of the network is necessary if uniformity and consistency is to apply. This is the Review's presumption. Our modelling is being undertaken on this basis and it will indicate the extent to which traffic flows and tolls will be affected.

Implementation Considerations

The introduction of new tolling arrangements will affect current concession agreements. Introducing tolling southbound on the ED would need to be negotiated. Introducing tolling northbound on the Sydney Harbour Crossings may trigger the Eastern Distributor material adverse effect provisions. Further analysis of the impact on traffic flow, traffic volumes, and revenue is required to assess the likelihood of reaching the materiality threshold.

⁵⁷ Treasurer., & Minister for Roads. (2023, June 14). Fels Toll Review considers previous reform options as it outlines public stages of the inquiry. NSW Government. <https://www.nsw.gov.au/media-releases/fels-toll-review-considers-previous-reform-options-as-it-outlines-public-stages-of-inquiry#:~:text=Another%20option%20is%20to%20consider,contrary%20to%20Labor%27s%20election%20commitments.>

Modelling of how any change to tolling arrangements may impact on traffic flow will be undertaken before our Final Report is completed. Changes could lead to traffic diversion, where motorists opt to take an untolled route because they do not perceive benefits in the toll route. Arterial roads and local roads may experience increased traffic due to the diversion of traffic from previously untolled directions. Assessing the capacity of these roads to handle additional traffic is crucial to anticipate potential congestion issues. Moreover, there is a need to evaluate whether network mitigation works will be necessary to address and alleviate any resulting congestion concerns.

Investment to put in place/remove tolling infrastructure and build new systems will be required to support the proposed changes.

Engagement with the community, industry and stakeholders, including the National Heavy Vehicle Regulator (NHVR) and trucking and motorist groups, will be required to refine the design of changes and support implementation.

Recommendations:

Recommendation 13: The Review recommends consistent two-way tolling as part of the network tolling system. Practical issues with the implementation are still being investigated.

Longer term reform: optimising the tolled motorway network

The Grattan Institute's submission noted: 'it would be more consistent and intuitive if all urban motorways were included in the tolled network, not just those that happened to have been built in the past two decades as toll roads. Including all comparable corridors but setting tolls at more affordable rates would go some way to reversing the current inequitable burden of tolls'.⁵⁸

Having tolled and untolled segments where the roads are interconnected and largely of the same standard and configuration creates distortions and complicates the operation of the roads as one network. Including them within a single tolled network may be consistent with the Proposed New Tolling Principles. This could mean that some roads are no longer tolled, or that other roads are brought into the network.

We note the position put by the Grattan Institute that revenues from expanding toll coverage could be 'reinvested' to lower toll prices across existing toll roads. Another opportunity is to contribute to funding expansion of the toll road network, or public transport. Providing tangible benefits such as these has been crucial to gaining public acceptance of tolling.

As with the proposed near-term changes, broad consultation with the community, industry and stakeholders would support successful design and implementation of the reform.

Any future consideration of the scope should have regard to the importance of open, effective competition.

Recommendations:

Recommendation 14: The NSW Government should investigate the scope of the tolled network in Sydney to achieve greater consistency, efficiency, and fairness.

⁵⁸ Grattan Institute (Public consultation, Stakeholder Submission, July 25, 2023)

9 Initial assessment of price reforms

Recommendations:

Recommendation 15: The NSW Government note the initial modelling conducted by the Review, which will continue to be refined prior to the introduction of any Network Tolling.

Transport models can assist in the assessment of policies that influence overall mobility, including changing to tolling arrangements.

To support the work of the Review, these models have been used to analyse the combined impact of a package of reforms, developed in response to the recommendations of Chapter 8. This package includes:

- A structure of tolls with a declining distance base charge and infrastructure access charges for use of bridge and tunnel toll road infrastructure
- Reform to vehicle multipliers to introduce new classes for motorcycles and mid-class heavy vehicles, and to apply consistent definitions and multipliers for Class A and Class B across the toll network
- Consistent two-way tolling across the toll road network, changing arrangements on the Sydney Harbour Bridge, the Sydney Harbour Tunnel, and the Eastern Distributor.

The initial phase of modelling has focused on formalising the network tolling reform package as a series of modelling assumptions and starting to assess the impacts of an indicative structure of tolls. Work to refine the Network Tolling pricing structure and optimise outcomes for motorists is ongoing. The initial assessment of results is presented in the spirit of transparency, and to allow stakeholders to provide feedback.

How we have modelled the network tolling reform package

Modelling approach

To understand the impact of reform, we have used an established suite of transport models to test and refine the pricing structure for the Network Tolling. The approach is described in Appendix B: Transport Modelling.

We have analysed the forecast changes to motorist behaviour from these models to understand the performance of the Network Tolling reform compared to the current state.

Modelled scenarios

Three scenarios have been modelled and are presented in this chapter - a Status Quo scenario and two reform scenarios for Network Tolling.

Status Quo

The Status Quo scenario forecasts that current conditions, trends, and policies are maintained into the future. By comparing the Status Quo case with other scenarios, it becomes possible to quantify the impacts of proposed changes and draw insight as to the potential benefits or drawbacks of moving away from the current path.

Here, the Status Quo scenario involves the continuation of current concession-based arrangements for tolling as set out in Chapter 2. This includes toll caps for the M7 and WestConnex, as well as an approximation of the M5 South-West cashback. The Status Quo scenario was based on the current and committed toll network.

The Status Quo modelling includes the two existing vehicle classes, Class A and Class B.

In 2024 and 2025, the Status Quo scenario includes the recently introduced Toll Relief packages of the \$60 toll cap and Truck Multiplier Rebate on the M5 East and M8. As these packages currently do not extend beyond 2025, they are not included in the scenario from 2026 onwards.

Network Tolling scenarios

The modelled options for network tolling reform package have a declining distance per-kilometre charge as the core pricing method, where the cost per kilometre decreases the further a motorist travels. The declining distance per-kilometre charge would reduce at a set per centage depending on the distance travelled, and a worked example is provided in Chapter 8. In addition, infrastructure access charges apply when motorists use specific parts of the tolled motorway network.

The Network Tolling scenarios also:

- assume that two-way tolling is in place on the Eastern Distributor, the Sydney Harbour Bridge and the Sydney Harbour Crossings
- include four vehicle classes: Class A and Class B, a new class for motorcycles, and a new class for MCHV
- assume the M5 cashback is discontinued.

The initial pricing structures for Network Tolling are shaped by the assumption of a redistribution of tolls

The Review proposes a network structure of tolls be introduced for the initial reform, maintaining the current level of total tolls paid. A firm constraint in the transport modelling is accordingly that the total tolls paid under the Network Tolling scenarios is equivalent with the Status Quo scenario. This constraint means that there is a redistribution of existing tolls under Network Tolling, with most motorists better off, but some motorists worse off as a result.

Our approach to toll relief in modelling the Network Tolling Scenarios

For the network tolling reform, the Review has modelled a continuation of the existing level of toll subsidies beyond 2025 and, alternatively, a removal of toll subsidies. These options are presented as two alternative extremes, which are illustrative. In the design of reform subsidies might be used flexibly or phased out over a timeframe.

This resulted in two scenarios for Network Tolling:

- Network Tolling A (no subsidy): Total tolls paid by motorists is equal to the Status Quo, although the structure of tolls is different. No subsidies for tolls are provided.
- Network Tolling B (with subsidy): Total tolls paid by motorists is equal to the Status Quo, less an assumed government subsidy of \$400 million per year (real 2026). This \$400 million is applied as a subsidy to lower toll prices network wide and approximates current government spending on toll relief. As a result, this 'B' scenario has reduced toll prices.

Indicative Network Tolling pricing structures

Figure 9.1 details indicative Network Tolling pricing structures developed through the modelling to date. These pricing structures are provided here so stakeholders can provide feedback, as part of the process to refine the pricing structures for the final report.

Figure 9.1. Indicative Network Tolling A and B pricing structure 2026

	Network Tolling A (no subsidy)	Network Tolling B (with subsidy)
Declining Distance Rate Components		

Figure 9.1. Indicative Network Tolling A and B pricing structure 2026

	Network Tolling A (no subsidy)	Network Tolling B (with subsidy)
Price for First Distance Segment	\$0.65/km	\$0.55/km
Distance Segment Length	4 km	4 km
Declining Percentage	15%	15%
Infrastructure Charges		
Sydney Harbour Bridge, Sydney Harbour Tunnel ⁵⁹	\$3.00	\$3.00
Cross City Tunnel	\$5.00	\$3.00
Eastern Distributor	\$6.00	\$4.00
Lane Cove Tunnel	\$4.00	\$2.50
NorthConnex	\$5.00	\$3.00
WestConnex- M8	\$2.50	\$1.50
WestConnex - M4-M8 Link (Haberfield to St Peters)	\$4.00	\$2.00
WestConnex - M4-M8 Link and Rozelle Interchange (Haberfield to Rozelle)	\$1.50	\$0.50
WestConnex - M4-M8 Link and Rozelle Interchange (St Peters Interchange to Rozelle)	\$2.50	\$1.50
WestConnex M4 East Tunnels	\$1.50	\$0.50
WestConnex M5 East Tunnels	\$1.50	\$0.50
M6 Stage 1	\$0.50	\$0.50
Vehicle Class Multipliers		
Motorcycles	0.5x	0.5x
Light Vehicles	1.0x	1.0x
Mid-Class Heavy Vehicles	2.0x	2.0x
Large Heavy Vehicles	3.0x	3.0x

⁵⁹ An assumption has been made that Western Harbour Tunnel will be tolled at the same rate, from opening scheduled for 2028

Figure 9.1. Indicative Network Tolling A and B pricing structure 2026

	Network Tolling A (no subsidy)	Network Tolling B (with subsidy)
Point Toll		
Military Road E-Ramps	\$2.13	\$2.13

Source: Independent Toll Review

Key assumptions

Key assumptions for the initial assessment included that:

- Modelling for the Status Quo was based on the current and committed toll network.
- Modelling for the Network Tolling pricing scenarios was based on consistent two-way tolling across the toll road network. This meant:
 - two-way tolling on Sydney Harbour Bridge and Tunnel (current arrangements are for southbound tolling only)
 - two-way tolling on the Eastern Distributor (current arrangements are for northbound tolling only)
 - status quo point tolls at the Military Road E-Ramps.
- Toll price escalation was assumed in the Status Quo, to be consistent with current concession terms. In the Network Tolling scenarios, toll prices were also escalated, at a rate of ~3.5% per annum over time.

Additionally, the key inputs for the traffic modelling process included:

- Traffic Demand: inputs were based on 2019 forecast land use and demographics for Sydney (which determines the size of the travel market) and spatial distribution of employment which significantly shapes travel patterns across the city.
- Transport Network: inputs were based on the physical transport infrastructure and services (including the road network and public transport services), as well as monetary costs (e.g. tolls, parking and public transport fares) which influence travellers’ options to travel.
- Economic and Behavioural: Sydney toll roads use a variety of measures for escalation which determine the relative affordability of using toll roads. Inputs include CPI and AWE. The most recently available VTTS (2012) input is used as an assumption for how drivers choose routes. The VTTS input will be updated to a 2023 input ahead of the final report.

Our approach to evaluation

The analysis we are considering

Transport models produce outputs key metrics for the performance of the road network, like total trips, average speeds on the road network, and vehicle kilometres driven by motorists.

Building from these outputs, the Review has analysed the forecast impacts of adopting Network Tolling on motorists, traffic and toll prices in terms of:

- Motorist impacts: motorists are better off when journey times are shorter, and if they use toll roads, from lower tolls. This analysis considers changes in travel time and tolls forecast for Class A vehicles, identifying areas in Sydney where motorists are mostly better off or mostly worse off under Network Tolling.

- Traffic impacts: an analysis of changes to motorist behaviour, showing where lower/higher volumes are forecast, compared to the Status Quo. This is complementary to the analysis of changes in travel times for motorists as part of motorist impacts. It also highlights where further road network capacity analysis is needed.
- Toll price impacts: analysis of changes to tolls under Network Tolling, as compared to the Status Quo, in terms of:
 - average tolls: the forecast average toll price paid, for Class A vehicles and all vehicles
 - motorway network: the distribution of toll changes for Class A vehicles for all journeys involving the motorway network
 - select routes: analysis of toll charges for Class A, Class B and the proposed MCHV vehicle classes for specific journeys to illustrate how the Network Tolling pricing structure compares to the Status Quo.

Modelling was conducted for 2026, considered the earliest possible year for implementing toll reform, and for 2031, when all committed toll roads and major motorway upgrades, such as Western Harbour Tunnel, M6, SG, M12, and M7 widening, are expected to be operational. However, as the 2031 trends largely mirror those of 2026, the focus of discussion is 2026.

How we are thinking about equity and fairness

The aim in exploring alternate structures for toll prices in Sydney is to improve network efficiency for the benefit of all motorists, while meeting fairness objectives. This involves ongoing consideration of the impacts across Sydney, especially in areas where relative disadvantage is observed. If overall benefit comes at high cost to areas that are already vulnerable, then change may become inequitable. In this case additional policy measures could be considered.

There are several ways of looking at relative advantage and disadvantage, including its geographic distribution. Common approaches include using the Australian Bureau of Statistics' Socio-Economic Indexes for Areas (also known as SEIFA), which ranks Australian areas by socio-economic status based on five-yearly census data, focusing on factors like income, education, and employment.⁶⁰

The Review has used a measure of mobility-related social exclusion as outlined by Stanley, Hensher et al. in 'Major Urban Transport Expenditure Initiatives: Where Are the Returns Likely to Be Strongest and How Significant Is Social Exclusion?'.⁶¹ This measure, which includes factors like income and employment also used in the Socio-Economic Indexes for Areas measure, is particularly suited for evaluating transport projects. It employs four indicators to gauge the relative risk of mobility-related social exclusion:

- the proportion of population aged 0–19, since children and youth tend to be more reliant on others, and on public transport, to access opportunities
- the proportion of population aged 75 or more, since older people also tend to be more dependent on others, and on public transport, for accessibility
- the (median) family income, as those with higher incomes are more readily able to purchase mobility solutions

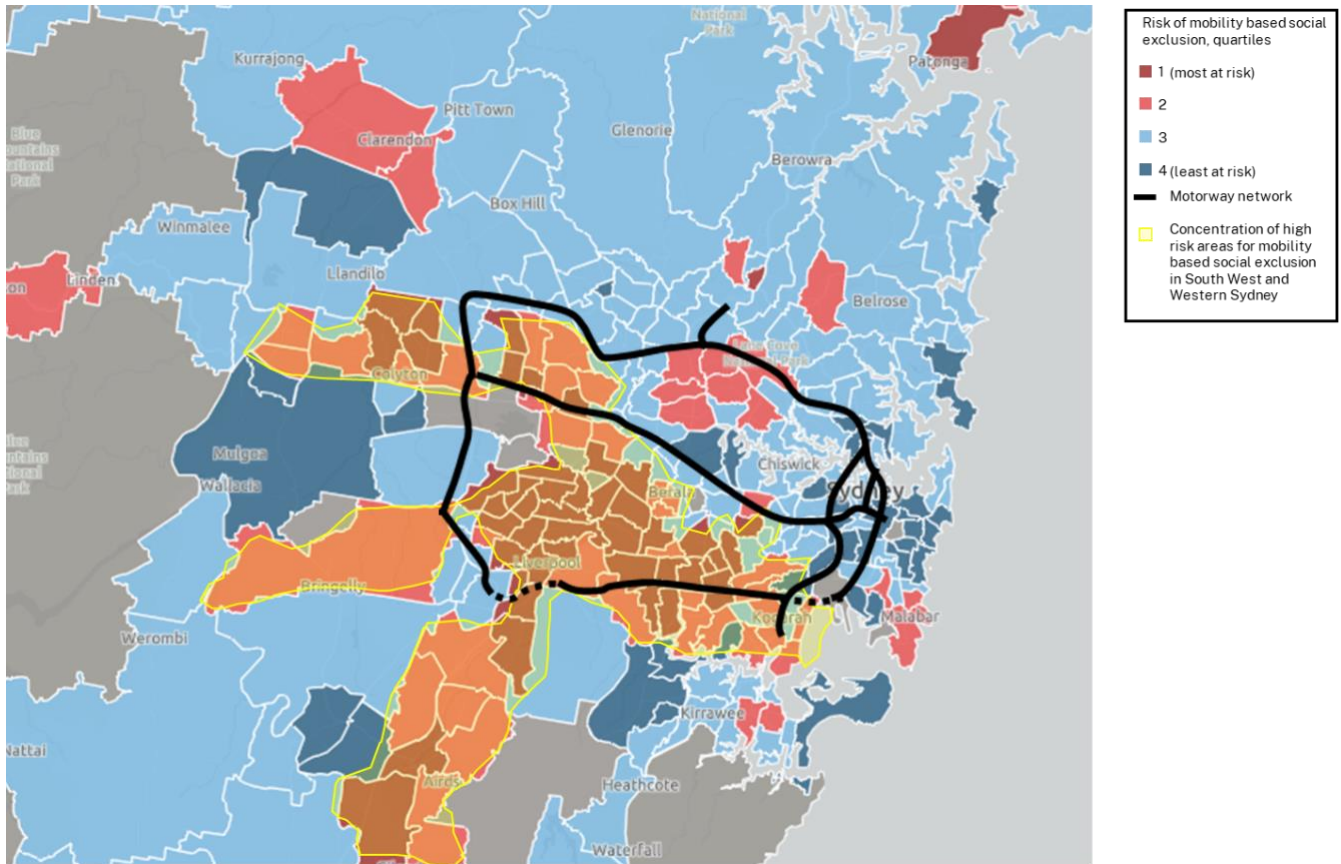
⁶⁰ Australian Bureau of Statistics. (2023, April 27). Socio-Economic Indexes for Areas (SEIFA), Australia. <https://www.abs.gov.au/statistics/people/people-and-communities/socio-economic-indexes-areas-seifa-australia/latest-release#overview>.

⁶¹ Stanley, J. K., Hensher, D. A., Wei, E., & Liu, W. (2022). Major urban transport expenditure initiatives: Where are the returns likely to be strongest and how significant is social exclusion in making the case. *Research in Transportation Business & Management*, 43.

- level of unemployment since this is a common indicator of disadvantage and of risk of social exclusion.⁶²

The risk of mobility-related social exclusion across different areas in Sydney is illustrated in Figure 9.2 below.

Figure 9.2. Index of risk of mobility related social exclusion, Sydney



Source: Transport for New South Wales analysis, based on Stanley, J.K., Hensher, D.A. et al (2022)

As Figure 9.2 illustrates, spatial mapping of the index for mobility-based social exclusion shows high risk areas in the southwest and west (emphasised with a pale-yellow overlay). Low risk areas include the eastern suburbs, northern beaches, and north shore.

Initial results

Motorist impacts

Network Tolling can potentially offer significant benefits to motorists by optimising journey travel times and toll expenses across the road network. A well-designed toll price structure aims to strike a balance, ensuring that the benefits of reduced travel times and toll costs are not offset by increased congestion due to higher road usage or by longer travel times on alternative routes due to toll avoidance.

Early analysis of Network Tolling outcomes suggests that changes in tolls and travel times under Network Tolling, when considered together, are favourable for motorists in Sydney’s north, south and west. Results are more

⁶² Stanley, J. K., Hensher, D. A., Wei, E., & Liu, W. (2022). Major urban transport expenditure initiatives: Where are the returns likely to be strongest and how significant is social exclusion in making the case. *Research in Transportation Business & Management*, 43.

strongly favourable in the Network Tolling B scenario, as a subsidy reduces toll costs for all motorists who use toll roads.

There are areas where motorists may be overall worse off, and the Review will continue to monitor and refine the pricing approach. These include the north and east of Sydney CBD, where motorists have likely been impacted by two-way tolling on the Eastern Distributor, and the Sydney Harbour Bridge and Tunnel.

Additionally, there are areas of concern in southwestern Sydney, particularly in the Network Tolling A scenario. Discontinuation of the M5 cashback results in changes to traffic behaviour as some motorists avoid using toll roads for some trips in the southwest, resulting in more traffic and longer journey times on some arterial roads.

Traffic volume impacts

The introduction of Network Tolling is anticipated to alter motorist behaviour. Where decreases in volume are forecast, this is likely to lead to increased network speeds, thereby contributing to overall travel time savings for motorists. In contrast, other areas show forecast increases in traffic volumes. This could mean better use of roads with available capacity, supporting motorist benefits. Conceivably, however, there could be added pressure on the road network, requiring further study of options, including refining tolls, to address this.

The initial modelling has forecast increases in the volume of trips taken on the tolled roads around the M2, M4, and M5 East sections of the network compared to the Status Quo. In these locations, there are often forecast reductions in volume on nearby alternative arterial road routes.

Conversely, volume reductions are forecast on the M5 South-West (impacted by the discontinuation of the M5 South-West Cashback), M4-M8, Sydney Harbour Crossings and Eastern Distributor southbound (impacted by the introduction of two-way tolling).

Toll price impacts

This analysis illustrates how the indicative Network Tolling A and B pricing structure translates to toll prices for motorists.

Average toll price

As a snapshot of the outcomes from Network Tolling, the average toll price has been calculated and compared to the Status Quo. This has been completed for Class A vehicles and all vehicles.

Figure 9.3: Average toll price by Scenario

Vehicle type	Status Quo	2026 Network Tolling A (no subsidy)	2026 Network Tolling B (with subsidy)
Class A	\$8.50	\$7.62	\$6.19
All vehicles	\$10.40	\$9.03	\$7.33

Source: Independent Toll Review

Note: The analysis assumes motorists pay the full toll price on all roads. It does not account for some motorists reducing their out-of-pocket toll costs by applying for the toll rebate from the M5 cashback scheme in the Status Quo scenario. This approach could lead to some overstatement of the average toll in the Status Quo scenario, but the effect is believed to be relatively small.

As Figure 9.3 details, average toll prices are lower in all the Network Tolling scenarios, for all vehicles, as compared to the Status Quo scenario.

A factor in the lower average tolls in the Network Tolling scenarios is that more trips in these scenarios involve paying a toll. This is largely due to the introduction of two-way tolling on the Sydney Harbour Bridge, the Sydney

Harbour Tunnel and the Eastern Distributor. In short, there are more trips paying a toll, but the average toll price (per tolled trip) is reducing. Another factor is the introduction of multipliers for heavy vehicles, including the proposed MCHV class on Sydney Harbour Bridge and the Sydney Harbour Tunnel, which will generate additional revenue.

Motorway: distribution of toll charges under Network Tolling (for trips involving the motorway network)

To explore price changes on journeys, we use a visualisation that compares the tolls paid by Class A motorists under Network Tolling to the Status Quo. The comparison is for the over 3,000 modelled journeys that include the motorway network.

The visualisation comprises:

- **X-Axis (Horizontal):** This axis represents the differences in toll prices for daily light vehicles (Class A) under the new tolling structure compared to the Status Quo. The value is in nominal 2026 dollars. A zero value indicates no change in toll price compared to the Status Quo, which could happen for example if sections of the road are untolled in both the Status Quo and the Network Tolling scenario, or if the Network Tolling scenario toll happens to be equivalent to the Status Quo toll for the journey. A point to the left of zero means the toll has decreased under the new structure of tolls, while a point to the right indicates an increase.
- **Y-Axis (Vertical):** This axis shows the weekday volume of light vehicles (referred to as ‘weekday light vehicle ons’) that use a particular route. These are average figures for a typical school weekday in the Status Quo scenario. A higher value on this axis suggests more vehicles are using that route, and therefore, the change of tolls associated with Network Tolling is impacting relatively more motorists. The use of a logarithmic scale (in powers of 10) allows presentation of a wide range of trip volumes and prevents the overemphasis of routes with low or high volumes.
- **Dot Colour:** The colour of each dot on the chart represents the total motorway distance of the trip. Blue dots signify trips less than 10 km, yellow dots represent trips between 10 and 25 km, and red dots are for trips longer than 25 km.

For example, a blue point with an x axis value of -6 and a y axis value of 5,000, means it’s a trip that is less than 10 km in length with 5,000 motorists benefitting from paying \$6 dollars less in tolls for that trip under Network Tolling compared to the Status Quo.

The analysis presented in the visualisations is complemented by summary tables. These tables break down, by trip distance bands and overall, the proportion of Class A trips where a price decrease occurs relative to the Status Quo, where prices remain unchanged, and where tolls increase.

Note: If a journey is untolled in the Status Quo, and untolled in the Network Tolling A or B, the price change is \$0.

Indicative price change by trip volume and trip distance for the Network Tolling scenarios, compared to the Status Quo, are illustrated in Figure 9.4 and 9.5.

Figure 9.4: Class A vehicles, indicative toll price difference, Network Tolling A (no subsidy) compared to Status Quo, 2026

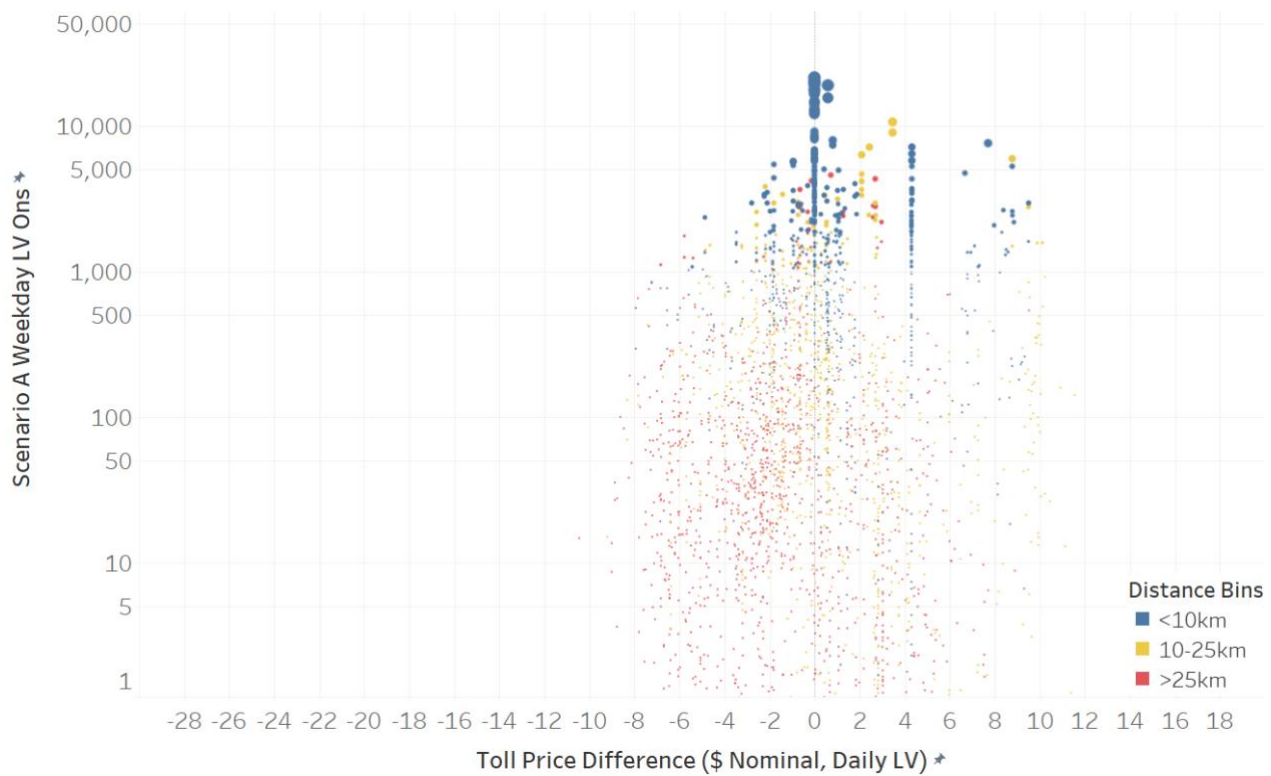
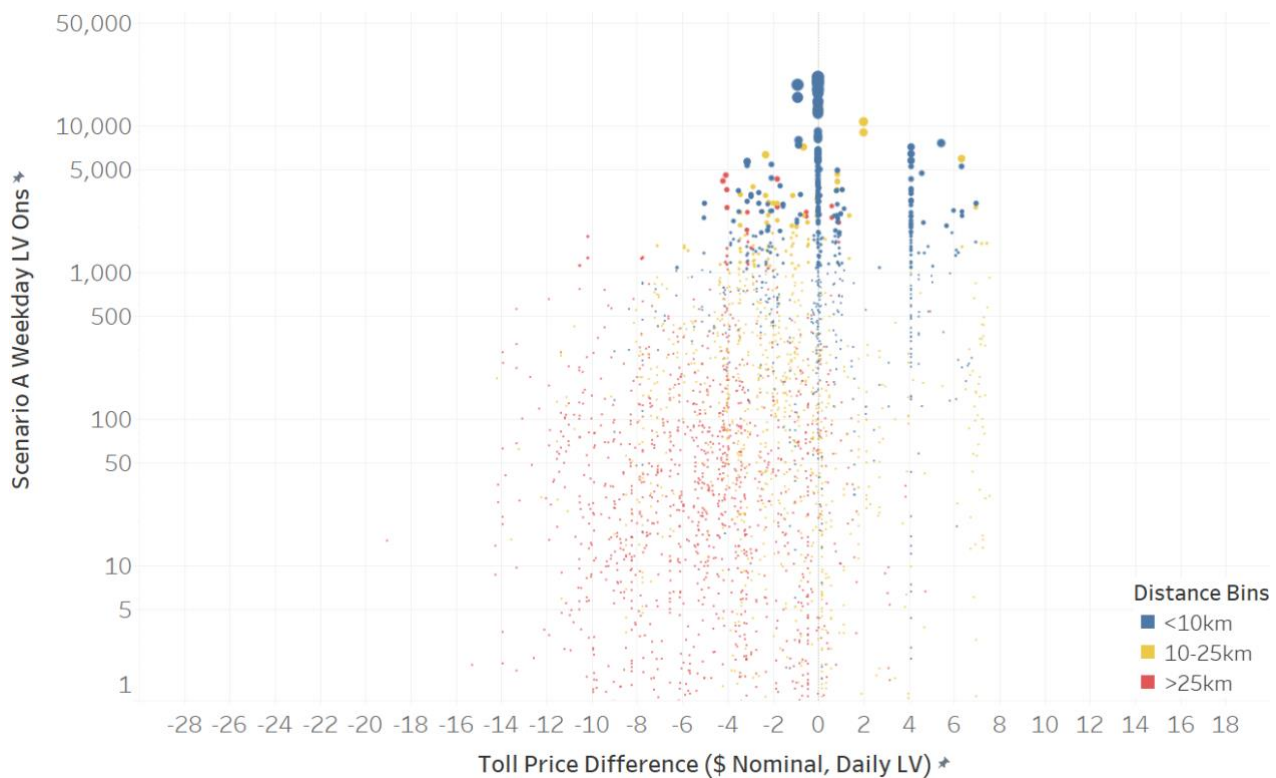


Figure 9.5: Class A vehicles, indicative toll price difference, Network Tolling B (with subsidy) compared to Status Quo, 2026



Source: Independent Toll Review

Note: The analysis in Figures 9.4 and 9.5 assumes motorists pay the full toll price on all roads. It does not account for some motorists reducing their out-of-pocket toll costs by applying for the M5 cashback scheme toll rebate in the Status Quo scenario. The analysis may overstate toll price improvements and understate increases in toll costs for motorists using the M5 South-West.

Overall, Figures 9.4 and 9.5 show:

- Most trips would be paying between +/- \$8 under the A scenario (Figure 9.4), while the B scenario (Figure 9.5), most motorists would not pay more than \$4-\$6. In the A scenario a limited number of trips are paying over +\$8 more.
- The trips that receive the greatest benefit in toll price reductions are often the longer trips (10-25 km+). This reflects the design of the declining distance charge, where the rate per kilometre reduces the further the motorist travels on the toll road network.
- Two-way tolling of the Harbour Crossings and Eastern Distributor is a key factor resulting in some <10 km trips paying more in tolls.
 - Sydney Harbour Bridge and Sydney Harbour Tunnel northbound trips: These trips are tolled in the Network Tolling scenarios. As an example, for a 2 km journey, the toll would be \$4.30 for Scenario A, compared to no cost currently.
 - Eastern Distributor southbound trips: These are also tolled under Network Tolling. The infrastructure access charges are \$6.00 in Network Tolling A and \$4.00 in Network Tolling B. These charges apply in addition to the per-kilometre declining distance base charge. This contrasts with the current cost of \$0.

Figures 9.6 and 9.7 present tables summarising the data in Figures 9.4 and 9.5. The tables detail proportion of Class A trips (by trip length band) where tolls are forecast to decrease under Network Tolling, where there would be no change, and where the toll is forecast to be higher.

Figure 9.6 Class A, indicative toll price difference, Network Tolling A compared to Status Quo, 2026

2026 Network Tolling A (no subsidy) vs Status Quo								
Trip Distance	\$3+ lower	\$1-3 lower	\$0-1 lower	No Change	\$0-1 higher	\$1-3 higher	\$3+ higher	Total
<10 km	2%	6%	5%	27%	9%	5%	11%	64%
10-25 km	2%	5%	3%	4%	4%	5%	3%	26%
>25 km	2%	2%	3%	0%	1%	2%	1%	11%
All trips	6%	13%	11%	30%	13%	12%	15%	100%

Figure 9.7: Class A, indicative toll price difference, Network Tolling B compared to Status Quo, 2026

2026 Network Tolling B (with subsidy) vs Status Quo								
Trip Distance	\$3+ lower	\$1-3 lower	\$0-1 lower	No Change	\$0-1 higher	\$1-3 higher	\$3+ higher	Total
<10 km	5%	7%	7%	27%	7%	1%	10%	64%
10-25 km	6%	8%	3%	4%	2%	2%	2%	26%
>25 km	7%	2%	1%	0%	1%	0%	0%	11%
All trips	18%	16%	10%	30%	10%	3%	12%	100%

Source: Independent Toll Review

Note: The analysis in Figures 9.6 and 9.7 assumes motorists pay the full toll price on all roads. It does not account for some motorists reducing their out-of-pocket toll costs by applying for the M5 cashback scheme toll rebate in the Status Quo scenario. The analysis may overstate toll price improvements and understate increases in toll costs for motorists using the M5 South-West.

Figures 9.6 and 9.7 show:

- The shares of trips by distance bands are consistent across all the A and B scenarios, and most trips are short trips (64 per cent).
- No change in tolls applies for almost a third of trips in both Network Tolling scenarios (30 per cent). These tend to be shorter trips that don't use tolled sections of the motorway.
- Most of the trips result in tolls that are the same or lower: 60 per cent in Network Tolling A and 74 per cent in Network Tolling B.
- The 'B' scenario, which incorporates a subsidy, results in more trips saving motorists toll costs; around 44 per cent of trips pay less tolls and 30 per cent have no change.

Toll price impacts: indicative pricing for select routes

This analysis focuses on the indicative pricing of select routes, comparing the to the Status Quo.

The select routes span a broad spectrum of trips incorporating toll roads, ensuring coverage of potential journeys across the entire motorway network. They contain a greater share of longer trips than the general trip population, is illustrated in Figures 9.6 and 9.7. While the select routes might not depict the most typical trip lengths, and trip tolls, they illustrate a relevant range of impacts.

Results are provided for three vehicle classes - Class A, the proposed Mid-Class Heavy Vehicle Class, and Class B. The classes are assumed to pay toll multipliers of 1, 3 and 3 respectively in the Status Quo, and 1, 2 and 3 respectively in the Network Tolling.

The select routes analysis complements the analysis in Figures 9.6 and 9.7. For instance, in Figure 9.8, route 5 from Parramatta to the CBD demonstrates how a journey exceeding 25 km could see a price reduction of \$0-1 for Class A vehicles under the Network Tolling A scenario. Conversely, route 20 from North Sydney to Petersham illustrates a potential price increase of \$0-1 for Class A vehicles for trips ranging from 10-25 km under the same scenario (see Figure 9.6).

Figures 9.8 and 9.9 provide a comparative analysis of indicative tolls for Class A and B vehicles, alongside the route distance, overall, and on and off toll roads. This comparison highlights differences between the Network Tolling scenarios and the Status Quo. Green values denote lower indicative toll costs under the Network Tolling scenarios, whereas red values signify higher indicative toll costs compared to the Status Quo.

Figure 9.8: Comparison of indicative toll price and journey composition (travel on tolled/untolled network) for representative routes, Network Tolling A (no subsidy) compared to the Status Quo.

#	Origin	Destination	Toll Roads	Trip Length (km)	Status Quo				Network Tolling A				
					Tolled Distance	Untolled Distance	Toll (\$) Class A	Toll (\$) Class B	Tolled Distance	Untolled Distance	Toll (\$) Class A	Toll (\$) Class MCHV	Toll (\$) Class HV
1	North of Hawksbury River	CBD	M2, LCT, SHB/SHT, NCX	58	24	34	\$29.51	\$82.61	24	34	\$22.80	\$45.61	\$68.41
2	Marsden Park	CBD	M2, LCT, M7, SHB/SHT	51	37	14	\$25.11	\$69.39	37	14	\$20.49	\$40.97	\$61.46
3	Penrith	CBD	M4	54	18	36	\$12.59	\$37.77	18	36	\$11.94	\$23.87	\$35.81
4	Campbelltown	CBD	M5E, M5W, ED	57	32	25	\$25.51	\$66.04	32	25	\$20.14	\$40.29	\$60.43
5	Parramatta	CBD	M4	26	18	8	\$12.59	\$37.77	18	8	\$11.94	\$23.87	\$35.81
6	Padstow	CBD	M5E, M5W, ED	28	20	8	\$25.51	\$66.04	21	8	\$17.30	\$34.59	\$51.89
7	Sutherland	CBD	M5E, M5W, ED	41	20	21	\$25.51	\$66.04	21	21	\$17.30	\$34.59	\$51.89
8	Rouse Hill	Domestic Terminal	M2, LCT, M7, SHB/SHT, ED	55	27	27	\$19.77	\$53.41	32	23	\$25.60	\$51.19	\$76.79
9	Campbelltown	Hornsby	M2, M7, NCX	74	56	19	\$26.33	\$78.93	56	19	\$20.54	\$41.08	\$61.62
10	Parramatta	Maroubra	M4, M8	32	21	11	\$12.59	\$37.77	21	11	\$15.29	\$30.58	\$45.87
11	Rosebery	Westfield Mt Druitt	M4, M8	45	21	24	\$12.59	\$37.77	21	24	\$15.29	\$30.58	\$45.87
12	Rosebery	Blacktown	M4, M8	39	21	18	\$12.59	\$37.77	21	18	\$15.29	\$30.58	\$45.87

#	Origin	Destination	Toll Roads	Trip Length (km)	Status Quo				Network Tolling A				
					Tolled Distance	Untolled Distance	Toll (\$) Class A	Toll (\$) Class B	Tolled Distance	Untolled Distance	Toll (\$) Class A	Toll (\$) Class MCHV	Toll (\$) Class HV
13	CBD	International terminal	M5E, ED	17	4	12	\$10.47	\$20.93	4	12	\$8.78	\$17.56	\$26.34
14	North Sydney	Domestic Terminal	SHB/SHT, ED	17	2	14	\$4.00	\$4.00	7	10	\$13.29	\$26.58	\$39.88
15	Leppington	Leichhardt	M8, M5W	50	36	14	\$18.39	\$55.15	36	14	\$18.23	\$36.46	\$54.70
16	Zetland	CBD	ED	7	2	5	\$10.47	\$20.93	3	5	\$7.69	\$15.38	\$23.07
17	Bondi Junction	Lilyfield	CCT	11	2	8	\$7.33	\$14.65	2	8	\$6.40	\$12.79	\$19.19
18	Artarmon	Pennant Hills	M2, LCT	20	14	6	\$14.89	\$46.76	14	6	\$11.66	\$23.31	\$34.97
19	Ingleburn	Rockdale	M5E, M5W	38	24	13	\$13.65	\$40.92	24	13	\$12.41	\$24.81	\$37.22
20	North Sydney	Petersham	SHB/SHT	11	2	9	\$4.00	\$4.00	2	9	\$4.30	\$8.60	\$12.90
21	Haymarket	Rosehill/Parramatta	M4	24	16	8	\$12.35	\$37.07	16	8	\$11.30	\$22.60	\$33.91
22	North Ryde	CBD	M2, LCT, SHB/SHT	16	5	11	\$8.26	\$18.90	5	11	\$10.24	\$20.47	\$30.71
23	Epping	Domestic Terminal	M2, LCT, SHB/SHT, ED	35	14	21	\$18.89	\$50.75	18	17	\$22.00	\$44.00	\$66.00
24	Parramatta	Mascot	M4, M8	27	21	7	\$12.59	\$37.77	21	7	\$15.29	\$30.58	\$45.87

#	Origin	Destination	Toll Roads	Trip Length (km)	Status Quo				Network Tolling A				
					Tolled Distance	Untolled Distance	Toll (\$) Class A	Toll (\$) Class B	Tolled Distance	Untolled Distance	Toll (\$) Class A	Toll (\$) Class MCHV	Toll (\$) Class HV
25	Glenfield	Blacktown	M4, M7	33	20	14	\$10.31	\$30.91	20	14	\$9.58	\$19.16	\$28.74
26	Glenfield	Kemps Creek	M7	24	11	14	\$5.60	\$16.80	11	14	\$6.11	\$12.22	\$18.33
27	Hornsby	Macquarie Park	M2, NCX	26	16	10	\$21.25	\$63.70	16	10	\$13.43	\$26.85	\$40.28
28	Bankstown	Blacktown	M4, M5W, M7	45	35	9	\$16.31	\$48.87	35	9	\$13.20	\$26.40	\$39.61
29	Liverpool	Revesby	M5W	15	10	5	\$6.00	\$17.96	10	5	\$5.78	\$11.56	\$17.34
30	North Parramatta	Hornsby	NCX	23	8	16	\$10.63	\$31.85	8	16	\$9.59	\$19.19	\$28.78

Source: Independent Toll Review

Note: assumes motorists pay the full toll price on all roads. It does not account for some motorists reducing their out-of-pocket toll costs by applying for the M5 cashback scheme toll rebate in the Status Quo scenario. If motorists did claim the M5 cashback on routes 4, 6, 7, 15, 19, 28 and 29 in the Status Quo scenario, the effective toll price benefit they are forecast to receive, shown in Figure 9.10 and 9.11, would be reduced by the amount of the cashback.

Figure 9.9: Comparison of indicative toll price and journey composition (travel on tolled/untolled network) for representative routes, Network Tolling B (with subsidy) compared to the Status Quo.

#	Origin	Destination	Toll Roads	Trip Length (km)	Status Quo				Network Tolling B				
					Tolled Distance	Untolled Distance	Toll (\$) Class A	Toll (\$) Class B	Tolled Distance	Untolled Distance	Toll (\$) Class A	Toll (\$) Class MCHV	Toll (\$) Class HV
1	North of Hawksbury River	CBD	M2, LCT, SHB/SHT, NCX	58	24	34	\$29.51	\$82.61	24	34	\$17.64	\$35.28	\$52.93
2	Marsden Park	CBD	M2, LCT, M7, SHB/SHT	51	37	14	\$25.11	\$69.39	37	14	\$16.91	\$33.82	\$50.74
3	Penrith	CBD	M4	54	18	36	\$12.59	\$37.77	18	36	\$8.56	\$17.12	\$25.69
4	Campbelltown	CBD	M5E, M5W, ED	57	32	25	\$25.51	\$66.04	32	25	\$15.20	\$30.40	\$45.60
5	Parramatta	CBD	M4	26	18	8	\$12.59	\$37.77	18	8	\$8.56	\$17.12	\$25.69
6	Padstow	CBD	M5E, M5W, ED	28	20	8	\$25.51	\$66.04	21	8	\$12.79	\$25.58	\$38.37
7	Sutherland	CBD	M5E, M5W, ED	41	20	21	\$25.51	\$66.04	21	21	\$12.79	\$25.58	\$38.37
8	Rouse Hill	Domestic Terminal	M2, LCT, M7, SHB/SHT, ED	55	27	27	\$19.77	\$53.41	32	23	\$20.16	\$40.32	\$60.47
9	Campbelltown	Hornsby	M2, M7, NCX	74	56	19	\$26.33	\$78.93	56	19	\$16.15	\$32.30	\$48.45
10	Parramatta	Maroubra	M4, M8	32	21	11	\$12.59	\$37.77	21	11	\$10.78	\$21.57	\$32.35
11	Rosebery	Westfield Mt Druitt	M4, M8	45	21	24	\$12.59	\$37.77	21	24	\$10.78	\$21.57	\$32.35

#	Origin	Destination	Toll Roads	Trip Length (km)	Status Quo				Network Tolling B				
					Tolled Distance	Untolled Distance	Toll (\$) Class A	Toll (\$) Class B	Tolled Distance	Untolled Distance	Toll (\$) Class A	Toll (\$) Class MCHV	Toll (\$) Class HV
12	Rosebery	Blacktown	M4, M8	39	21	18	\$12.59	\$37.77	21	18	\$10.78	\$21.57	\$32.35
13	CBD	International terminal	M5E, ED	17	4	12	\$10.47	\$20.93	4	12	\$6.35	\$12.70	\$19.05
14	North Sydney	Domestic Terminal	SHB/SHT, ED	17	2	14	\$4.00	\$4.00	7	10	\$10.63	\$21.26	\$31.90
15	Leppington	Leichhardt	M8, M5W	50	36	14	\$18.39	\$55.15	36	14	\$14.20	\$28.39	\$42.59
16	Zetland	CBD	ED	7	2	5	\$10.47	\$20.93	3	5	\$5.43	\$10.86	\$16.29
17	Bondi Junction	Lilyfield	CCT	11	2	8	\$7.33	\$14.65	2	8	\$4.18	\$8.36	\$12.55
18	Artarmon	Pennant Hills	M2, LCT	20	14	6	\$14.89	\$46.76	14	6	\$8.98	\$17.96	\$26.93
19	Ingleburn	Rockdale	M5E, M5W	38	24	13	\$13.65	\$40.92	24	13	\$9.73	\$19.46	\$29.19
20	North Sydney	Petersham	SHB/SHT	11	2	9	\$4.00	\$4.00	2	9	\$4.10	\$8.20	\$12.30
21	Haymarket	Rosehill/Parramatta	M4	24	16	8	\$12.35	\$37.07	16	8	\$8.02	\$16.05	\$24.07
22	North Ryde	CBD	M2, LCT, SHB/SHT	16	5	11	\$8.26	\$18.90	5	11	\$8.24	\$16.48	\$24.71
23	Epping	Domestic Terminal	M2, LCT, SHB/SHT, ED	35	14	21	\$18.89	\$50.75	18	17	\$17.12	\$34.23	\$51.35

#	Origin	Destination	Toll Roads	Trip Length (km)	Status Quo				Network Tolling B				
					Tolled Distance	Untolled Distance	Toll (\$) Class A	Toll (\$) Class B	Tolled Distance	Untolled Distance	Toll (\$) Class A	Toll (\$) Class MCHV	Toll (\$) Class HV
24	Parramatta	Mascot	M4, M8	27	21	7	\$12.59	\$37.77	21	7	\$10.78	\$21.57	\$32.35
25	Glenfield	Blacktown	M4, M7	33	20	14	\$10.31	\$30.91	20	14	\$8.11	\$16.21	\$24.32
26	Glenfield	Kemps Creek	M7	24	11	14	\$5.60	\$16.80	11	14	\$5.17	\$10.34	\$15.51
27	Hornsby	Macquarie Park	M2, NCX	26	16	10	\$21.25	\$63.70	16	10	\$10.13	\$20.26	\$30.39
28	Bankstown	Blacktown	M4, M5W, M7	45	35	9	\$16.31	\$48.87	35	9	\$11.17	\$22.34	\$33.51
29	Liverpool	Revesby	M5W	15	10	5	\$6.00	\$17.96	10	5	\$4.89	\$9.78	\$14.68
30	North Parramatta	Hornsby	NCX	23	8	16	\$10.63	\$31.85	8	16	\$6.89	\$13.77	\$20.66

Source: Independent Toll Review

Note: assumes motorists pay the full toll price on all roads. It does not account for some motorists reducing their out-of-pocket toll costs by applying for the M5 cashback scheme toll rebate in the Status Quo scenario. If motorists did claim the M5 cashback on routes 4, 6, 7, 15, 19, 28 and 29 in the Status Quo scenario, the effective toll price benefit they are forecast to receive, shown in Figure 9.8 and 9.9, would be reduced by the amount of the cashback.

Figures 9.8 and 9.9 illustrate many routes where Class A, Class B and the proposed MCHV class of vehicles will experience lower tolls under Network Tolling. For many long-distance routes, Network Tolling maintains a correlation between distance and tolls but due to the declining distance pricing structure, leads to lower tolls than the Status Quo.

Network Tolling also offers motorists clear benefits on the M2 and M5 West, where currently drivers incur charges when they pass fixed toll points. Under Network Tolling motorists pay instead a declining distance charge for the actual distance they travel (and infrastructure charges as applicable), leading to lower tolls. This is illustrated by routes 4, 6, 7, 15, 19, 28, and 29.

There are routes where tolls are forecast to increase. Introducing two-way tolling on the ED, SHT, and SHB, along with higher Infrastructure Charges on these routes, increases tolls for certain trips, such as those from the CBD or north of the Harbour Bridge to Sydney Airport. routes 14 and 20 in are examples of this.

Additionally, the cumulative nature of Infrastructure Charges raises tolls for routes involving multiple ventilated tunnels and/or the Sydney Harbour Bridge, despite the individual charges being relatively low. Routes 11, 12 and 24 exemplify this impact.

There are some routes where the effects of both two-way tolling and multiple infrastructure charges are evident, for example, route 8, Rouse Hill to Domestic Terminal, resulting in higher tolls. These kind of outcomes will be a focus of further consideration.

The introduction of the MCHV class generally leads to lower toll costs across the network for these vehicle types, as they pay a multiplier of 2x under Network Tolling, as compared to 3x under the Status Quo.

Heavy Vehicles also generally have a lower set of tolls under Network Tolling. Exceptions, where tolls are higher for Heavy Vehicles and the MCHV class, occur mainly where tolling has been expanded (northbound tolling on Sydney Harbour Bridge and Sydney Harbour Crossing, southbound tolling on the Eastern Distributor) or charging by vehicle class introduced (Sydney Harbour Bridge, Sydney Harbour Tunnel). For example, route 20, North Sydney to Petersham, will cost \$4.60 more for a MCHV in the Network Tolling A scenario, and \$8.30 more for a Heavy Vehicle.

Summary of results and next steps

Initial modelling, discussed in this chapter, indicates the reform package offers higher benefits to motorists than current arrangements.

Further refinement of price reforms is underway ahead of presenting recommendations in the Final Report. The next steps are for a detailed assessment of the impacts of a pricing structure based on a declining distance base charge, and infrastructure charges for access to specific parts of the toll road network. This will involve more recent traffic data and updated modelling tools.

Recommendations:

Recommendation 15: The NSW Government note the initial modelling conducted by the Review, which will continue to be refined prior to the introduction of any Network Tolling.

10 Institutional Reforms

Recommendations:	
State TollCo	<p>Recommendation 16: NSW Government should establish a government-owned special purpose entity ('State TollCo') with responsibility for improving outcomes and transparency for motorists to strengthen governance and accountability over NSW toll roads.</p> <p>State TollCo will drive and implement toll reforms:</p> <ol style="list-style-type: none"> a. State TollCo will set network toll prices payable by motorists, with periodic adjustments. b. State TollCo will improve competition outcomes. c. State TollCo will absorb current Transport for NSW toll collection functions (E-Toll retail business and issuing toll notices). d. State TollCo will have an ongoing focus on constantly innovating to improve the toll road experience for motorists in New South Wales. <p>Recommendation 17: The NSW Government should consider options for the ownership and contract management of privately operated toll roads.</p> <p>Recommendation 18: The NSW Government should consider options for administrative arrangements concerning public toll roads.</p>
Independent oversight of toll setting	<p>Recommendation 19: Tolls set by State TollCo should be subject to oversight by IPART. IPART's role may involve making its own determinations, providing recommendations to State TollCo and investigating specific toll pricing issues.</p>
Setting tolls - legislative package	<p>Recommendation 20: In addition to including establishing State TollCo and IPART roles, the legislative package should also:</p> <ol style="list-style-type: none"> a. Enable network toll prices to be set independently of contractual frameworks. b. Provide for a revenue adjustment mechanism to enable appropriate sharing of network toll revenues between toll road operators. c. Provide for an independent toll issue resolution mechanism. d. Modernise the legislative framework for NSW toll roads.

Overview

In this Chapter of the Interim Report, we outline a plan for implementing substantial reforms to tolls. We propose: (i) that a new Government-owned authority be responsible for introducing a network approach to setting tolls and periodically resetting network toll prices, and (ii) IPART provides independent oversight of tolls.

The existing system of setting tolls is not in the public interest, and we do not consider it can be adequately reformed based on current settings. A new system will need to have legislative backing. In this chapter we consider necessary institutional changes to achieve an effective new system of network tolls. The legislation will override existing concession agreements with private toll road operators in so far as those relate to the toll prices, they can charge motorists. Inevitably this will raise issues about existing contractual processes and rights. Our approach includes mechanisms to ensure fairness prevails.

Further work will be undertaken prior to the Final Report on the State TollCo governance model.

NSW Governments have successfully worked in partnership with the private concession operators over many years and we anticipate that this will continue if all parties recognise that change to the current toll pricing arrangements is necessary.

The need for legislation to achieve reform

The Review has considered carefully whether it is likely that the major reforms to tolling, including a shift to network tolling, proposed by the Review would be able to be implemented through negotiated changes to existing concession agreements. Our view is that negotiation would not achieve the necessary public interest outcomes in a timely manner. There are several reasons for this view:

- Negotiations would need to occur between Transport for NSW and each concessionaire on a concession-by-concession basis. The interests of debt financiers would also need to be considered.
- A uniform agreement would be required across all the concessions, yet the circumstances and trade-offs for each concession would be different.
- Negotiation would have the potential to open a wide range of issues, particularly where some prices may be going up and others down consistent with network tolling, and would have the potential to become very protracted, with an uncertain timeframe.
- Concession holders who are competitors could not, under existing competition laws, enter into agreements which had the purpose or effect of fixing, controlling or maintaining prices.
- The Roads Act does not currently contemplate network tolls, so may not provide an adequate framework for a negotiated network tolling approach.
- The existing concession agreements provide certainty over the life of the concessions as to toll prices. The proposed new arrangements, despite safeguards, may involve more uncertainty for concessionaires.

Transurban is the dominant player in the industry, and it would inevitably lead on negotiations for concessionaires. There is a significant risk that this position would enable the company to further extend its dominance in industry matters. If negotiations were to occur, it is likely that these would be very protracted and fail to deliver agreed outcomes from all parties. This would not be a good outcome for the community, which has strongly expressed support for early reform.

A solely negotiated arrangement would perpetuate the lack of transparency around toll roads, which is not consistent with the aims of this Review.

It is our strong view that Government will need to take more active steps to ensure effective reform is implemented more quickly and openly than negotiations between concession partners would allow for. The two

key institutional changes we are recommending are the establishment of a Government-owned State TollCo and extension of the role of IPART to include the oversight of tolls.

State TollCo

Through State TollCo, it is intended the Government will take control and reset the NSW toll network and take charge of the motorist experience. Our model provides flexibility for Government to modify tolls based on the changing circumstances of the transport network and motorists. State TollCo will be the catalyst for change.

TollCo will be a separate and dedicated entity with an independent governing board accountable to the responsible Minister. The State TollCo Board should have full day-to-day independence over the operational and commercial decisions they take to achieve the expectations placed upon them by Government. State TollCo would be expected to engage staff with the necessary expertise to perform its functions. State TollCo could comply with Treasury's Commercial Policy Framework.

State TollCo will set network tolls payable by motorists, with periodic adjustments

State TollCo will set network tolls within the regulatory and guidance framework set by the Government.

The State TollCo model enables Government to manage the toll price more effectively during operations. Through regular price review and adjustment, State TollCo will enable the most efficient operation of the toll road network so that the investments made in the toll road network can realise the greatest possible economic benefits. This directly addresses the issues we identified in Finding 3 and Finding 4.

A revenue adjustments mechanism would sit behind the scenes to ensure that each toll road operator receives the amounts due to them for traffic using their roads. The revenue adjustment model will aim to put the concessionaires in the same position they would be in had motorists been charged according to the existing toll schedules in their concession contracts.

A flexible approach to pricing will allow State TollCo to simplify toll relief schemes and make them more effective. Toll relief could be applied as a discount to the toll price charged, rather than a rebate to the user. This will save motorists time in researching and applying for toll relief. It will have significant cost savings for Government administering toll relief. The revenue adjustment mechanism will ensure the benefits from toll relief flow to the community and motorists, without excessive returns to the concessionaire.

State TollCo will improve competition outcomes

A central objective of State TollCo will be to promote competition. State TollCo will apply a pro-competition focus to every aspect of its decision-making.

State TollCo and IPART could apply a 'yardstick' competition⁶³ approach to setting network tolls to mimic a competitive market situation and generate efficient outcomes.

State TollCo will also promote competition in the market through greater transparency. For example, it will provide information to potential entrants about the framework for setting toll prices and scope for cost efficiencies in the sector. It would also provide more information to the market about consumer demand, and how this changes over time.

As discussed below, it would also be appropriate for Government to consider establishing a more vertically integrated State TollCo with road operator functions. This would increase competitive tension. Toll road asset

⁶³ 'yardstick competition' is a regulatory mechanism where revenue allowances are set by benchmarking the costs of similar regulated firms; Shleifer, A. (1985). A theory of yardstick competition. *Rand Journal of Economics*, 16(3).

management and operations capability could be built in State TollCo. This would provide a Government-owned alternative toll road operator for any new toll roads and reduce reliance on the private sector.

State TollCo will be a major market participant in the toll collection process

State TollCo will operate the network trip reconstruction engine.⁶⁴ State TollCo will receive the data collected by roadside infrastructure and determine the value of each individual trip across one or more separate toll roads based on the new pricing model. State TollCo will provide the necessary trip data to toll retailers to ensure the right amounts are charged to motorists and remitted to toll road operators.

It is proposed that the E-Toll toll retailer business could transfer from Transport for NSW to State TollCo. State TollCo as a dedicated body with greater autonomy is expected to be able to provide a stronger user focus and be a more proactive competitor.

As outlined in Appendix G, Transport for NSW currently issues toll notices (on behalf of toll road operators) to motorists who have not arranged to pay their tolls within 72 hours. It is proposed that this fee-for-service function will also transition to State TollCo. Transport for NSW is expected to implement the Government's election commitments to consolidate toll notices and reduce administration fees prior to this transfer occurring. State TollCo would then be tasked with the remaining aspects of Recommendation 16c (i.e. digitising toll notices, immediate notifications, and providing of motorist-centric information).

This approach keeps all Transport for NSW tolling functions across the toll collection process together and transitions them to State TollCo. State TollCo will then be able to pursue process improvements over all steps in the process. As a special purpose entity, State TollCo will be better placed to innovate in this area to drive down costs and improve the user experience.

State TollCo will have an ongoing focus on constantly innovating to improve the toll road experience for motorists in NSW

The establishment of State TollCo will provide the Government with greater access to richer data about how customers are using the network, across multiple toll roads. Currently Transport for NSW has limited customer level data about non-E-Toll motorist travel patterns. Because State TollCo will reconstruct (C2) all trips on the network, State TollCo will allow Government to understand for all motorists how many times they access the network and what parts they are accessing.

Richer customer level data will assist State TollCo in assessing and modelling the customer impact of price adjustments and reforms. State TollCo will be in a position to understand the characteristics, circumstances and preferences of all toll road users regardless of their choice of toll retailer.

State TollCo will work with industry and relevant Government agencies to lead the implementation of Recommendations 28, 29 and 30 for improving toll price transparency for retail customers. It will become the main customer interface for tolling information. State TollCo will work collaboratively with other providers of retail tolling information (e.g. Linkt, Google, Apple, Waze) to drive industry reform. Initiatives aimed at the retail customer include revamping toll retailer statements, projecting usage for motorists, moving away from physical tags, improved real time road signage at key decision points, and a one-stop shop holistic transport application with a corresponding website.

⁶⁴ This function is referred to as "C2" in Appendix I.

Recommendation:

Recommendation 16: NSW Government should establish a government-owned special purpose entity ('State TollCo') with responsibility for improving outcomes and transparency for motorists to strengthen governance and accountability over NSW toll roads.

State TollCo will drive and implement toll reforms:

- a. State TollCo will set network toll prices payable by motorists, with periodic adjustments.
- b. State TollCo will improve competition outcomes.
- c. State TollCo will absorb current Transport for NSW toll collection functions (E-Toll retail business and issuing toll notices).
- d. State TollCo will have an ongoing focus on constantly innovating to improve the toll road experience for motorists in NSW.

Other possible State TollCo models

The Review sees potential merit in a broader role for State TollCo as: (i) an operator of Government-owned toll roads, and/or (ii) the Government counterparty for concession agreements with the private sector. Further vertical integration could be achieved in two ways - through transferring the administration of toll road concessions from Transport for NSW to State TollCo, or through transferring toll road ownership from Transport for NSW to State TollCo.

Transport for NSW currently operates the Sydney Harbour Bridge and owns and operates the Sydney Harbour Tunnel. The M6 Stage 1 and Western Harbour Tunnel are also proposed to be Transport for NSW owned and operated toll roads. When private concession agreements expire the roads to which they relate will also revert to Transport for NSW.

Aside from Transport for NSW, other precedents for government operation of toll roads include Sydney Motorway Corporation and the Victorian Government's North-East Link State Tolling Corporation. The WestConnex concessionaires were established as wholly owned subsidiaries of Sydney Motorway Corporation. The North-East Link State Tolling Corporation holds a lease from the Victorian Government, enters into tolling agreements with the State, will receive toll revenues from toll retailers and will outsource the operations and maintenance of the motorway according to a long-term outcome-based contract.

Commensurate with its additional responsibilities, the Balance Sheet of State TollCo may be significantly strengthened through granting toll road concessions or transferring road ownership to it and its expertise and understanding of toll road operational issues would be greatly enhanced. Transferring road ownership would make it a more conventional roads authority, taking a direct role in the development and operation of the toll road network, and directly managing concession contracts. It may also be empowered to undertake direct borrowings and investment if required.

Figure 10.1: Potential State TollCo models

1. Toll price setter and toll retailer. No toll road assets.

State TollCo could be focused principally on toll reform, customer experience, regulating price and facilitating the network tolling model, without itself being a toll road owner or operator.

2. Toll price setter, toll retailer, and concessionaire

In addition to price setting and toll retailer functions, State TollCo could be a concessionaire for the Sydney Harbour Bridge, Sydney Harbour Tunnel, Western Harbour Tunnel and M6 Stage 1. The North-East Link State Tolling Corporation and Sydney Motorway Corporation provide precedents for a government-owned concessionaire. There are potential concerns about the appropriateness of one concessionaire setting network prices under this model.

3. Toll price setter, toll retailer, and toll road owner

State TollCo could own all NSW toll roads. Under this model, State TollCo would also assume wider responsibilities for the management of contracts with concessionaires. It would become the lessor (under the current legislative framework), manage refinancings (as consent agency), interface, planning and other issues concerning the operation of private toll roads and would receive the assets at concession end.

Bringing public toll road assets and PPP contract management responsibilities into State TollCo would enhance the capability of State TollCo. This model would replicate the current Transport for NSW arrangements and bring all the main touchpoints between the toll road industry and the Government together to enhance collaboration and ensure State TollCo can directly manage relationships with industry partners. With the addition of toll road ownership functions, State TollCo could be better positioned to manage the toll road network.

Source: Independent Toll Review

It would be possible to transfer other responsibilities relating to toll roads now residing with Transport for NSW to State TollCo in the long term if considered desirable but clear delineation of responsibility and co-ordination with Transport for NSW would be essential for this to occur.

In summary, there appears to be significant potential benefits to be achieved by bringing public toll road assets and PPP contract management responsibilities into State TollCo (model 3 in Figure 10.1). However, there is the potential for conflicts of interest if State TollCo was both the network toll setter as well as the operator of some toll roads subject to the same revenue adjustment mechanism as the privately operated toll roads. These potential conflicts would need to be addressed in appropriate ways, such as ring-fencing functions, or rigidly maintaining the current concession agreements so that the rights and obligations of each party are clearly delineated. The involvement of IPART in overseeing toll setting (discussed below) would also assist in dealing with any potential conflicts real or perceived if Government wished to proceed with a vertically integrated State TollCo.

Alternatively, ownership of toll roads (including operating public toll roads and PPP contract management) could sit in another entity separate to both Transport for NSW and State TollCo.

Considerations concerning the ownership and operation of toll roads are relevant to the Review's terms of reference but raise broader issues.

Recommendation:

Recommendation 17: The NSW Government should consider options for the ownership and contract management of privately operated toll roads.

Recommendation 18: The NSW Government should consider options for administrative arrangements concerning public toll roads.

IPART should oversee tolls set by State TollCo

In NSW, the main independent pricing regulator is IPART. IPART is 'an independent, strategic agency of NSW Government, charged with regulating key markets and government services to ensure effective social,

environmental and economic outcomes for the people of NSW'.⁶⁵ IPART is established through the *IPART Act 1992*, which sets out its primary functions and governance.

The Review proposes that IPART should have a significant oversight role in respect of the setting of tolls by State TollCo. IPART has significant expertise in pricing matters, and it operates in a fully transparent manner through public inquiries, including public submissions from interested parties and public reports. IPART's role may involve making its own determinations (including on maximum prices or the methodology to apply), providing recommendations to State TollCo and investigating specific toll pricing issues.

IPART can investigate pricing issues, advise on price setting methodologies, review pricing proposals and make pricing determinations depending on the specific mandate given to it by Government. IPART operates within a clear framework which recognises the importance of the criteria of efficiency, fairness, transparency and simplicity which have been central to this Review. It also is required to have regard to the importance of competition in performing its price oversight functions.

IPART has had significant experience in regulating infrastructure industries including energy, water and transport including rail, buses, ferries and taxis. It has well developed approaches to evaluating issues concerning the recovery of capital and operating costs, including determining required rates of return for long term sustainability. It has applied incentive regulation through CPI-X price cap schemes and yardstick competition principles in comparing the efficiencies of similar providers across different industries. In overseeing toll road pricing, it would be expected that IPART would develop methodologies that are consistent with generally accepted approaches to price regulation but are also relevant to the specific context of toll road pricing. We would presume that IPART would have regard to the Proposed New Tolling Principles developed by this Review although it would not be precluded from further developing these principles.

Figure 10.2: Key differences between IPART regulation and current regulation by contract

In evidence provided at our Sydney hearing, Professor Martin Locke outlined four key differences in an IPART model compared to the current concession-based toll arrangements.

1. The toll road operators' equity returns are determined by the regulator
2. Periodic regular reset (every three or five years)
3. The regulator's determination is binding
4. Everything is made public

Source: Sydney Transcript, 11 July 2023

As regards IPART's role in determining prices we agree with Professor Martin Locke's summary description of key differences (see Figure 10.2). It highlights the significant potential benefits to be gained through IPART involvement in toll price setting.

We would expect that IPART's role in overseeing tolls would evolve over time as indeed would that of the State TollCo. There will be many issues that State TollCo will be required to consider in implementing a network tolling approach including the possible application of dynamic and time of day pricing. In the early years it would be expected that IPART would provide significant guidance to State TollCo. It would be able to monitor and report publicly on State TollCo's progress. It could investigate matters of concern to stakeholders if necessary. State TollCo would develop proposals for setting the structure and level of network tolls and these proposals would be considered by IPART. Whether IPART should then have the power to determine tolls as opposed to just reporting

⁶⁵ Independent Pricing and Regulatory Tribunal, NSW. (n.d.). Our role. <https://www.ipart.nsw.gov.au/Home/About-IPART/Our-role>

on them and making recommendations will be a matter to determine in the future in the light of experience. The legislation would need to provide flexibility for all these approaches.

Concessionaires would continue to operate under long term agreements with the Government. Over time, the tolling schedule provisions may be modified by the new arrangements involving State TollCo and IPART. Service and quality issues would still be regulated under the concession agreements.

There is precedent for this kind of dual regulation by concession agreement and independent regulator. Italy has moved to a similar style of regulation in recent decades as discussed below in Figure 10.3. It is interesting also that this regulation has evolved to more clearly separate the recovery of construction and operation costs.

Figure 10.3: Regulation of toll roads in Italy

Italy has a significant national network of toll roads covering more than 3,000 km. Concessions were developed with tolls set using a variety of methodologies, until in 2014 an independent regulator (Autorità di Regolazione dei Trasporti - ART) was established and charged with developing a regulatory framework with a single toll-setting methodology. Originally, this methodology was to apply to new road concessions only.

In 2018, the collapse of a tollway bridge in Genoa resulted in significant changes in the operation of concession agreements. The Government implemented new laws to make it possible to terminate existing concessions, and where breaches of the concessions were established, early termination was provided for with entitlement of concessionaires only to the value of the works carried out plus ancillary charges, net of amortisations, or the costs actually incurred (a Regulatory Asset Base). Indemnities for profit loss compensations were excluded. A negotiation was eventually reached with the concessionaire of the Genoa motorway (ASPI), which provided for compensation, new investment and a majority sale of shares to public interests.

As a result of legislative changes, ART now regulates tolls for all existing concessions. Effectively, concessionaires operate under regulatory contracts, with 5-year resets. There are 24 concessionaires, and the ART determines tolls through use of a construction charge payment and an operational cost payment.

- The construction charge payment is effectively a capital charge (return on capital plus depreciation charge) based on a RAB from outturn expenditures.
- The operational cost payment compensates for recovery of efficient operating costs, including maintenance and any incremental operating costs associated with new investments and new laws and regulations. The regulator ART applies 'yardstick' competition between the concessionaires to benchmarking operating costs and then applies a price cap to the resulting charge.

Source: ART, https://www.autostrade.it/documents/10279/49045784/2022_01_17_Investor_Presentation_Global_call.pdf

A further example of dual regulation involving concession agreement and independent regulator in another industry context is that concerning the Thames Tideway Tunnel in the UK as noted in Figure 10.4 below.

Figure 10.4: Thames Tideway Tunnel

The Thames Tideway Tunnel is a massive water infrastructure project sitting underneath the River Thames. This project was considered a good candidate for a PPP concession by the UK Government as it was large, had a complex, long construction and was urgently required. The project also had very large risks associated with tunnelling; however, the Government was able to manage this by explicitly covering catastrophic risks.

The interest in this example is that while it was a PPP, it has economic regulation and the water regulator, Ofwat, firmly embedded in it. The regime allowed for the costs of the Tunnel to be passed through into retail charges. Bidders for the project were able to bid on the basis of the WACC they would accept in the construction phase of the project to 2030, with a WACC thereafter to be determined by Ofwat. Costs incurred were subject to a pre-determined threshold, and an incentive mechanism based on forecasts of

construction costs Ofwat issued to bidders for guidance in advance of the project. This provided assurance that Ofwat would treat bidders fairly and had a history of doing so, and many decisions could be appealed to the CMA.

This structure provided for a competitive bidding process which produced a relatively low WACC (real, post tax rate of 2.5%).

Source: Ofwat, *Ofwat guideline on approach to the economic regulation of the Infrastructure Provider for the Thames Tideway Tunnel*, August 2015.

Stakeholder views

IPART has indicated to the Review that it considers it would be well placed to provide additional oversight of tolls.

Leading commentators have also supported an independent regulator as have other organisations representing motorists. The National Road Transport Association, the Grattan Institute, NRMA, the Central Coast Council (which is also price regulated by IPART), Road Freight NSW, and Business NSW expressed support for an independent pricing regulator in their submissions or statements at the public hearings held as part of the Review's public consultation process.

Figure 10.5: Stakeholder views on independent regulation

IPART: 'IPART would be well-placed to provide additional oversight of tolls. We would bring our extensive experience in regulating transport infrastructure and setting prices for public transport services to such a review.' (submission to Review)

Professor Martin Locke: having 'transparent discussions rather than mysteries about how these tolls are priced, set, changed and how it then impacts the people who are the underlying concessionaires and the investors... would certainly help... it's important from a social legitimacy perspective for this to be clearly explained to the broader community.' (public hearing)

Grattan Institute: 'The state government should ask the Independent Pricing and Regulatory Tribunal (IPART) to advise on the initial levels of the charges, as well as if, when, and by how much charges should be changed over time. IPART should use traffic statistics such as the number of vehicles travelling specific stretches of motorway network within the relevant time periods, and average travel times between indicative origins and destinations. With regular monitoring of these traffic statistics, IPART should discern any sustained and material deviation from benchmarks to trigger a more detailed review of the level of the charge. This approach retains some objectivity and some distance from government, although the government would still retain the capacity to manage its network.' (submission to Review)

Adrian Dwyer, Infrastructure Partnerships Australia: 'We regulate water systems with a regulated asset base. We regulate energy systems with a regulated asset base. There's conceptually no reason why we couldn't do the same over a tolled motorway network, where there are [sic] sufficient revenue to cover the costs of delivery and a reasonable risk-weighted return for owners of concessions.' (public hearing)

NRMA: 'Mechanisms to vary user charges should be independently calculated (e.g. by IPART) and relate to:

- Whole of life asset costs and maintenance.
- Incentives for behavioural change.' (submission to Review)

2017 Parliamentary Inquiry into Road Tolling in New South Wales: 'Many inquiry participants called for the introduction of an independent regulator to oversee the negotiation process to ensure that the end result represented value for money for the people of New South Wales. However, this position was refuted by the NSW Government which argued that additional oversight was unnecessary.' (Report, p67)

Recommendation:

Recommendation 19: Tolls set by State TollCo should be subject to oversight by IPART. IPART's role may involve making its own determinations, providing recommendations to State TollCo and investigating specific toll pricing issues.

Legislation

This section outlines the legislative package required to give effect to the introduction of network tolling led by State TollCo, with periodic toll price adjustments and IPART oversight. We acknowledge the significant further review and consultation required to develop the draft legislation. An outline of the current framework is included at Appendix F.

Legislative changes required to introduce network tolling

Enabling toll prices to be set independently of contractual frameworks

Currently, Transport for NSW sets the tolls and charges for each private toll road by way of a contractual toll calculation schedule locked-in to a long-term lease and concession arrangement.

The challenges of this 'set and forget' model of price setting are discussed elsewhere in this Interim Report.

It is evident that, without the ability to set toll prices and charges for motorists independently of the contractual frameworks, there is limited scope to provide the necessary transparency and assurance that toll pricing remains robust and appropriate over time.

Price regulation outside the contractual framework would allow for tolls to be set on a network basis rather than per toll road. It would provide levers to use toll pricing to respond to issues such as network and traffic demands, congestion policy and cost of living concerns - the latter, without the need for expensive and inefficient toll relief programs.

The State already has the power to set maximum tolls and charges by regulation under the Roads Act section 213. These would impose lawful limits on the tolls and charges which can be levied by any toll road operator, regardless of whether public or private. However, the existing regime does not clearly facilitate network tolling, and a regulation would be subject to disallowance, creating uncertainty.

Under the proposed new statutory framework, amendments to the Roads Act would likely include:

- ability to set and collect tolls and charges on the basis of a trip across the network, and not simply on a per toll road basis
- explicit statement that the tolls and charges set by law are the tolls and charges that must be levied by toll road operators
- provision for regulations to further detail process for setting tolls and charges
- provision for a revenue adjustments mechanism and fund, with further details set out in regulations
- setting out the purposes to which toll revenue may be applied (this would inform the price setting, as well as providing transparency and clear criteria to help motorists understand why they are paying tolls)
- a centralised independent issue resolution process for resolving revenue issues or disputes between the various toll road operators or between the toll road operators and the State entity operating the revenue adjustments fund
- provision for oversight of tolls by IPART.

Revenue adjustment mechanism

The revenue adjustments mechanism will enable sharing of tolls on a network basis and ensure each toll road operator is paid the amount due for vehicles travelling on its road.

Motorists will be charged a single trip fee, based on the published toll road network price.

Behind the scenes, the toll paid by the motorist will be allocated across the toll roads travelled as part of the trip (less proportion of roaming fee), based on a pre-determined methodology. If the network toll for travel on a particular toll road is higher than the toll due for that road on an individual road basis, the excess will be credited to the revenue adjustments fund. If the network toll is lower than the toll due on an individual road basis, the revenue adjustments fund will be debited, and the toll road will be credited, the amount due.

The revenue adjustments mechanism will be developed, in consultation with relevant stakeholders, during the next phase of the Review and development of legislation. The revenue share due for each toll road will be calibrated to ensure there are no windfall returns to toll road operators as a result of increased traffic caused by the new pricing model, and likewise to ensure there are no losses that fall outside the norms of what could be expected in a long-term demand based PPP.

If there are issues with determining the correct allocation of revenue, or amounts due, the centralised independent issue resolution process (referred to above) should be the forum for determining these.

The revenue share mechanism would be subject to regular formal review to ensure it remains effective and fair.

Establishing State TollCo by legislation

State TollCo would be established under a new part inserted into the *Transport Administration Act 1988* (TAA). The Part would constitute the entity as a statutory corporation. State TollCo would have the functions conferred on it under the TAA, the Roads Act, and any other relevant Act. A list of suggested functions, powers and obligations is shown in Figure 10.6. This relates to the minimum core requirements of State TollCo (Option 1 at Figure 10.1). State TollCo's legislative mandate would be modified if road operations and/or ownership were to be included in State TollCo's remit.

Figure 10.6: State TollCo's legislative mandate

Suggested functions, powers and obligations (Roads Act and TAA amendments)

- Set the toll road network price, subject to any IPART determinations, and in accordance with a transparent legislated process.
- Commission infrastructure and systems to facilitate network tolling (including powers to acquire and enter land).
- Operate the tolling back office for trip processing to ensure the right amounts are charged to motorists and credited to the appropriate road owners.
- Conduct the E-Toll business of the State on an inter-operable basis.
- Service provider to toll road operators and motorists.
- Manage the revenue adjustments fund.
- Promote and drive reform of tolling to enhance transparency and improve the experience for motorists.
- Conduct a business using the assets and staff of State TollCo.

Source: Independent Toll Review

Establishing IPART role by legislation

The IPART Act provides the framework for the role of IPART. The new legislation would empower IPART (directly or by Ministerial referral) to determine or recommend network toll prices. It would also allow IPART to give advice to the Roads Minister on the appropriate maximum roaming fee or mechanism for regulating roaming fees (Chapter 11 contains our recommendation to regulate roaming fees).

Toll road operators and toll retailers will be required to provide information to IPART to enable it to oversee toll prices and roaming fees to ensure recovery of capital and operating costs (and any other permitted costs) and a reasonable rate of return.

The legislation should also provide IPART with a more general inquiry power to consider toll industry pricing issues in more detail outside any specific price reset.

Broader review

The legislation governing tolling has not been reviewed for some time. There are opportunities to modernise the language and concepts, and increase transparency, which fall outside the scope of this Review.

Recommendation:

Recommendation 20: In addition to including establishing State TollCo and IPART roles, the legislative package should also:

- a. Enable network toll prices to be set independently of contractual frameworks.
- b. Provide for a revenue adjustment mechanism to enable appropriate sharing of network toll revenues between toll road operators.
- c. Provide for an independent toll issue resolution mechanism.
- d. Modernise the legislative framework for NSW toll roads.

Phasing

Figure 10.7 below indicates the key steps or phases of network toll price reform involving the establishment of State TollCo and the price oversight role of IPART and the introduction of a network system of tolls. More detailed analysis will occur on the timeline for implementation prior to the Final Report but it could be two years before a network system of tolls can be initiated. We understand that many will be frustrated about the length of time required to achieve substantive reform to the processes for setting tolls, however, we are dealing with a legacy of several decades and without these changes this legacy will continue until at least 2060 when the last of the current concessions are due to expire.

Figure 10.7: Implementation phases

<p>Phase 1 - Introduce price reforms</p>	<p>Legislative package introduced.</p> <p>Establish State TollCo.</p> <p>Network tolling enabling measures in place include:</p> <ul style="list-style-type: none"> • network-wide trip reconstruction engine⁶⁶ built within State TollCo • additional roadside infrastructure and systems⁶⁷ operational. <p>Introduce network tolling as outlined in Chapter 8.</p> <p>Prior to all network tolling enabling measures being in place, State TollCo could potentially introduce:</p> <ul style="list-style-type: none"> • more effective toll relief • introduce elements of the network tolling scheme in advance of the full roll-out of network tolling • toll collection process improvements and retail customer transparency reforms.
<p>Phase 2 - Reset tolls with independent oversight of price levels</p>	<p>TollCo reviews and resets network tolls. IPART provides independent price oversight.</p>
<p>Phase 3 - More consistent and efficient toll prices</p>	<p>Ongoing price adjustments and contract reform. Possible contract reforms which may provide savings and efficiencies to pass on to motorists in lower tolls include:</p> <ul style="list-style-type: none"> • harmonisation of concession agreement terms (not limited to toll prices) • reviewing the allocation of traffic demand risk • providing flexibility around re-financing by concessionaires. <p>Pursue other opportunities to reduce network tolls.</p>

Source: Independent Toll Review

⁶⁶ Component 2 function described at Appendix I.

⁶⁷ Component 1 function described at Appendix I.

11 Competition Reforms

Recommendations:	
Competition measures	<p>Recommendation 21: The NSW Government should ensure future procurement processes have greater regard for desirability of maintaining a competitive industry structure.</p> <p>Recommendation 22: The NSW Government should review existing concession agreements with the aim of enhancing competition.</p> <p>Recommendation 23: The NSW Government should place a greater focus on long term implications for control and competition rather than short term benefits in the approach to future procurement of toll roads.</p> <p>Recommendation 24: As with other aspects of toll setting, there should be clear public transparency in relation to determining the length of concession agreements. The concession period should be based on clear public interest considerations, including maintaining competitive industry structures.</p> <p>Recommendation 25: The NSW Government should favour competitive tender processes over unsolicited proposals for new toll road concessions.</p> <p>Recommendation 26: The NSW Government should regulate roaming fees to promote competition for future toll road PPPs.</p> <p>Recommendation 27: The NSW Government should disclose full details regarding the setting of tolls. This includes publication in a timely matter of:</p> <ol style="list-style-type: none">surveys and analysis concerning willingness to pay, value of travel time savings, and toll saturation,detailed traffic forecasts for proposed network toll prices,actual, forecast and benchmark concessionaire costs,the expected rate of return for each concessionaire.

Overview

Chapter 5 highlighted Transurban’s dominance in road tolling in Sydney.

Dominance can have a range of impacts on an industry, its competitors, customers and the broader community. Our view is that Transurban’s dominance in road tolling is undesirable and needs to be reduced. This is particularly so in light of the major reforms to the system of toll setting we have proposed.

This chapter outlines the concerns dominance gives rise to and the measures we consider could be taken to reduce dominance coinciding with the introduction of network tolls.

Problems created by dominance

Dominance can arise from internal growth of a firm and/or from acquisitions and takeovers of existing firms, which may be close competitors. In Transurban's case, both internal and external growth drivers have been present. Transurban has acquired other operators, some of which have experienced financial difficulties, and most recently, has acquired the concessions covering the new WestConnex roads. Transurban has expanded its influence through the two successful unsolicited proposals it has put forward to Government. It has also been able to obtain extensions to the length of existing concessions, thus further extending its long-term influence in the industry.

Dominance can be associated with good industry performance in terms of promoting efficiency and progressiveness or it could be detrimental to that performance.

In some industries, dominance may be associated with the achievement of economies of scale or scope. Here a bigger or more diversified firm may be able to supply goods or services more cheaply than a smaller or less diversified firm. Individual toll roads are normally viewed as having natural monopoly characteristics meaning that economies of scale are best exploited by having a single supplier. Where there are a number of toll roads, however, there could also be a number of operators each able to achieve available economies of scale.

Some economies may also be realised by operating several toll roads at the same time. For example, this may enable better utilisation of skilled personnel and specialised equipment across an organisation responsible for several toll roads and facilitate economies in procurement.

Transurban's dominance is likely to facilitate the achievement of economies of scale and scope and in this respect could be seen as enhancing efficiency.

Similarly, dominance has in some other industries been considered to help promote innovation and progressiveness. Dominant firms often have more resources to spend on these areas, although the lack of competitive pressure is often considered to work against this benefit. Transurban is generally seen as innovative in the toll road industry.

In competitive markets, efficiency improvements tend to be reflected over time in prices so that there is some sharing of these benefits with customers. This is not the case with Transurban. Under current pricing arrangements, tolls are fixed for long periods of time with no general requirement that gains in efficiency are passed back to motorists. Therefore, efficiency improvements enhance Transurban's profitability.

Industry dominance can be self-perpetuating to the extent that it makes it even more difficult for competitors, including new entrants, to compete effectively on the same terms as the dominant firm. In road tolling, competition for the market is a more critical aspect than competition within the market (as discussed in Chapter 5). In Transurban's case, the competition authorities have highlighted Transurban's superior access to traffic data and modelling, which are important in determining bids for new roads.

Transurban's dominance extends beyond the day-to-day operation of toll roads to the operations of Government. While it is not unreasonable that good consultation exists between parties to the PPP agreements which underlie the toll roads, it is an easy slide for this to become more influential than is desirable when dominance exists. It can, for example, have broader impacts in terms of influencing toll road integration with the road system and transport planning more generally.

An issue here is the connotation placed on the word 'partnership' in the term PPP. Partnership tends to suggest working together as equals to achieve mutual benefits. For bureaucrats, it can mean not doing things that might upset the partner, perhaps even where the public interest is the key motivation for doing so. In fact, the PPP agreements are tightly written documents which provide little flexibility for governments to do things which may be perceived as detrimental in some sense to the partner, and which would need to be negotiated if proceeded with.

Is dominance compatible with a new network system of tolling?

Transurban has tentatively supported the notion of a network structure of tolling, but its view has not been able to be informed by the views of this Review at this point in time.

Under existing arrangements where Transurban dominates virtually all the private concessions, it may not be difficult for it to come to a position as to what a network system of tolls could look like. This would no doubt be a network that did not fundamentally challenge the company's position of dominance or in the longer term, perhaps, challenge its profitability. Rather, the opposite is likely to be the case.

Whether it would accept the roles of State TollCo and IPART as proposed by this Review remains to be seen. We see these bodies as being essential to not only achieving a new system of network tolls, but also to the achievement of a more competitive tolling industry.

Perhaps another way to approach the question asked above is to ask: 'would a more competitive industry structure enhance the benefits of a network system of tolling?'

Our response to this question is a strong 'yes, it would'. There are two reasons why. First, reforms to concession agreements could be adopted in conjunction with measures to enhance industry competition and second, these measures could also enable State TollCo, rather than the concessionaires to retain efficiency benefits and reflect these in tolls.

How can a more competitive tolling industry structure be achieved?

The NSW Government needs to be more proactive in promoting competition in road tolling.

The most direct way to do this in the short-term would be to encourage the sale of some of the Transurban roads to other operators.

More realistically, perhaps, the Government could look to revamp tender processes to better reflect the importance of promoting effective competition for the market.

This may involve:

- ensuring that there are always a number of competing bids
- ensuring that the bidders are all well informed about the operation of the network, traffic flows and volumes and financial performance of roads that make up the network
- ensuring that bid evaluation criteria focus on the importance of minimising tolls (or adhering to network tolls where these apply) and costs subject to achieving other relevant quality and service outcomes
- ensuring that bid evaluation criteria include consideration of the impact on industry concentration.

A significant longer-term matter to consider is the basis on which the PPP contracts are specified. In particular, the Review considers competition would be significantly enhanced if concession agreements could be re-framed as availability PPPs rather economic PPPs, as at present. The latter involves the recovery of costs through tolling, with the concessionaire taking the risk for traffic volumes, whereas the former involves recovery of costs by concessionaires through periodic payments from the Government, or, under the new system proposed by the Review, from State TollCo. This could obviously be more easily done with new agreements, but it may also be possible to re-negotiate existing agreements.

Other pro-competitive changes to concession arrangements should also be considered by Government. These changes include:

- generally avoiding increasing the length of existing contracts

- adopting a more rigorous, pro-competitive approach to reviewing unsolicited proposals for new roads or road capacity
- regulating roaming fees.

Following sections of this Chapter discuss a number of these matters in further detail.

Recommendation:

Recommendation 21: The NSW Government should ensure future procurement processes have greater regard for desirability of maintaining a competitive industry structure.

Retaining demand risk

Currently, NSW Government has structured its arrangements in a way that it does not suffer financially if a project underperforms in terms of traffic demand and shares some of the benefit if the project performs better than expected.

Ultimately post construction in particular, the NSW Government is probably in a better position than the private sector operators to influence traffic on the motorways. The Government can have a significant influence on traffic flows through its general management of the transport network, land use planning, toll relief and related strategies. This is noted by Professor John Quiggin and Dr Jiayu Wang:

‘The basic problem is that the government is in a better position to manage demand risk. The flow of traffic on any given road will depend on subsequent decisions about urban development and about the development of the transport network as whole. A private owner of a single road will demand either a high rate of return or a guarantee that future management decisions do not adversely affect traffic on the road in question. By contrast, for the government which owns the road network as whole, and can tax all road users, risk about traffic flows on any one road is unimportant. The government’s concerns go beyond the road network — what matters is the performance of the transport system as a whole.’⁶⁸

By assuming a greater share of demand risk in toll roads, the NSW Government could mitigate market competition concerns, particularly those arising from Transurban’s dominance. Transurban’s in-depth knowledge and management of demand risk gives it a clear advantage over rivals, as discussed in Finding 10. It will also attract new classes of investors who are looking to invest in more stable and certain income streams such as superannuation funds. Therefore, if the NSW Government took responsibility for traffic risk, it may open the market to more competition in the future.

NSW Government procurement and PPP guidelines outline the need to undertake delivery model assessment during the upfront project development phase. When the government decides to retain demand risk other procurement models, such as availability PPPs or Design & Construct without private finance, may be appropriate.

The NSW Government retains demands risk for the Sydney Harbour Bridge and Sydney Harbour Tunnel. It will also retain demand risk on the Western Harbour Tunnel project and M6 Stage 1 (both in delivery) when they

⁶⁸ Quiggin J., & Wang J. (2018). Unscrambling the toll road egg. *Economic Analysis and Policy*. <https://doi.org/10.1016/j.eap.2018.07.002>.

open. Looking to other jurisdictions, North East Link and Peninsula Link in Victoria, and Toowoomba Bypass in Queensland are examples of State Governments retaining demand risk through availability PPPs.

Reducing concession length

Many of the current concession agreements have long contract terms, reflecting the increasingly complex and costly nature of projects, for example extensive tunnelling, as well as provisions about concession length, government contribution and starting tolls as determined by the government.

There is a trend toward longer contract terms: for example, the WestConnex concessions lasts for about 40 years out to 2060. There is an inherent trade-off in contracting for longer concession terms which weighs up greater private sector funding today against the requirement for longer term motorist contributions. By extending a concession from 30 to 40 years, government is effectively unlocking a greater funding pool to pay for a project or reinvest (as is the case in sale of WestConnex), yet motorists bear the cost of this far longer.

While governments have had a strong rationale and received significant benefits from agreeing to longer concession terms, the approach has come at a cost, particularly in terms of lost government control over price setting arrangements and flexibility for innovation. The heavy discounting applied to the outer years of the concession contract means that the upfront revenue benefit is low, but the loss of control is significant (as the longer you look into the future the greater the chance of technological/social disruption).

Shorter contract durations, or more frequent contract resets, would allow for regular adaptation of terms and tolls in response to changing circumstances. They can also help distribute risks more evenly between government and concessionaires and allow for periodic adjustments to risk sharing mechanisms. As the length of concessions grows, the risk of unforeseen events or changes in demand can disproportionately burden one party.

The financial implications of shorter concession periods will require evaluation. Investors are typically seeking to extend concessions (rather than shorten them). If concession lengths are shorter, governments may need to provide additional funding to reduce the private capital required or share traffic demand risk or other risks with the private sector. Alternatively, tolls may need to be higher to ensure an adequate return to investors and debt repayment.

Recommendation:

Recommendation 22: The NSW Government should review existing concession agreements with the aim of enhancing competition.

Recommendation 23: The NSW Government should place a greater focus on long term implications for control and competition rather than short term benefits in the approach to future procurement of toll roads.

Concession lengths should be based on clear public interest considerations

The problems associated with inflexible concession terms, high tolls and long concession periods have previously been discussed in Chapter 4 and Chapter 5. Lengthening the term of concessions simply perpetuates these problems for longer. The Review understands that this is partly why concessions in the European Union countries generally do not exceed 30 years. In the USA it is understood concession period lengths are often longer than this.

Flexible concession lengths could reflect the period required by concessionaires to obtain sufficient revenue to achieve the required rate of return underlying their contract.

It is sometimes suggested that a trade-off could be negotiated with concessionaires involving lower tolls in the immediate period in return for allowing an increase in the length of concessions. While this would lower tolls in the short term, it would not reduce the overall level of tolls users are required to pay over the long term or address the concerns about government control over price setting arrangements and lack of innovation referred to above.

If the trade-off proposal related to genuine reform of tolling arrangements for example, acceptance by concessionaires of government setting toll levels or periodic resets of tolls or reductions in tolls, there may be a stronger case for this type of action.

Recommendation:

Recommendation 24: As with other aspects of toll setting, there should be clear public transparency in relation to determining the length of concession agreements. The concession period should be based on clear public interest considerations, including maintaining competitive industry structures.

Unsolicited Proposals (USP) for new toll roads advantage incumbents

An Unsolicited Proposal (USP) arises when a proponent independently approaches the Government with a commercial proposition, without any prior request from the Government. They are a separate pathway for procurement and involve negotiations with one party rather than competitive bidding. In 2012, the NSW Government introduced the USP Guide for Submission and Assessment to establish a transparent framework for assessing USPs, initially focusing on three main criteria: uniqueness, value for money, and alignment with whole of government strategic objectives before assessing all remaining criteria including affordability, return on investment, capability and capacity and risk allocation. The USP Guide for Submission and Assessment underwent enhancements and updates in 2014 and 2017 after extensive review and industry feedback. The latest 2022 update reflects changes in the machinery of government.

It is significant that two major motorway projects in Sydney in recent years have arisen from USPs from the M7 Westlink consortium (including Transurban). These are NorthConnex and the M7-M12 Integration Project. NorthConnex, was a wholly new toll road concession, while the M7-M12 Integration Project was an augmentation to widen and link the existing M7 motorway to the non-tolled M12 motorway.

USPs as related to toll roads can be controversial. The ACCC, for instance, has argued they advantage incumbent toll operators and that competitive processes offer better value for money.⁶⁹

Governments will generally only consider USPs where both the proposal and the proponent (on the face of it, or after a market test has occurred) have unique attributes such that others could not deliver a similar proposal with the same value for money outcome. However, caution should be exercised when assessing toll road USPs, noting Transurban's market dominance and incumbency advantages.

Further, USPs typically seek to expand capacity (e.g. by widening). Ideally, the option of utilising pricing strategies for demand management on the existing road should be considered in the first instance before capacity increases.

⁶⁹ Australian Competition & Consumer Commission. (2018, August 30). ACCC will not oppose Transurban consortium WestConnex bid following undertaking. <https://www.accc.gov.au/media-release/accc-will-not-oppose-transurban-consortium-westconnex-bid-following-undertaking#:~:text=%22The%20ACCC%20considers%20that%20state%20governments%20should%20only,to%20taxpayers%2C%20drivers%2C%20or%20both%2C%22%20Mr%20Sims%20said.>

The NSW Government's USP Guide to Submission and Assessment places significant emphasis on uniqueness and requires that 'for unsolicited proposals to progress through the assessment process, the uniqueness needs to apply to both the proposal and the proponent.' That is, the 'demonstration of unique benefits of the proposal and the unique ability of the proponent to deliver the proposal.'

Stakeholders in their submissions noted the use of unsolicited proposals but did not comment on the process.

The distinction between a USP for a new toll road and a USP to augment an existing toll road may be significant, The ACCC in its submission to the NSW Legislative Council inquiry into Road Tolling Regimes recommended that:

'State governments should run competitive tender processes for new toll road concessions and not accept unsolicited proposals for them.'

The ACCC additionally noted:

'Assuming that the guidelines remain as they are, and that the NSW Government continues to consider unsolicited proposals for new toll road concessions under the guidelines, our view is that such proposals should only be accepted if there is a clear case that it benefits the public, and that the uniqueness criterion should not be interpreted in a way that advantages incumbent toll road operators'.⁷⁰

It may in practice be more difficult to have extensions to an existing concession operated by a new player so competitive bidding processes in these circumstances may be more difficult. However, governments could consider competitive tendering or building in pre-agreed augmentation regimes in the original concession contracts. This would provide an alternative to conventional USP processes to ensure value for money. This approach has been utilised on privately financed projects such as Sydney Metro City and Southwest.

Recommendation:

Recommendation 25: The NSW Government should favour competitive tender processes over unsolicited proposals for new toll road concessions.

The regulation of roaming fees will promote competition

This recommendation seeks to provide certainty to potential new investors and so improve opportunities for competition.

Under the Roads Regulation, the Roads Minister has the power to (i) set a maximum roaming fee that may be charged by toll retailers, or (ii) determine an appropriate mechanism to regulate roaming fees. The Roads Minister has not exercised this power and the threat of doing so may have been considered a sufficient response to date.

This recommendation echoes a recommendation made in the 2019 Independent Inquiry into the Regulation of Toll Road Roaming Fees, which identified that regulating roaming fees could promote competition (and therefore innovation and efficiency) in the market for toll road concessions in New South Wales. Even though in 2019, a

⁷⁰ Australian Competition and Consumer Commission. (2021, October 14). Inquiry into Road Tolling Regimes, Submission No 232. <https://www.parliament.nsw.gov.au/lcdocs/submissions/76469/0232%20ACCC.pdf>.

finding revealed no evidence of toll retailers using market power to set roaming fees, stakeholders provided evidence that the risk of higher roaming fees served as a barrier to competition.

There is a possibility of conflict for State TollCo if it was to be involved in regulating roaming fees. As a toll retailer, State TollCo will be entitled to receive roaming fees. State TollCo may, as a toll road operator, also be obliged to pay roaming fees. We therefore are of the view that IPART, rather than State TollCo is best placed to support the Roads Minister in regulating roaming fees.

Recommendation:

Recommendation 26: The NSW Government should regulate roaming fees to promote competition for future toll road PPPs.

Data and analysis used in determining tolls should be published

Information considered by IPART under the new system for toll setting should be made public. In addition, State TollCo must provide the public with detailed information explaining how it periodically sets network tolls. Information to be disclosed under this recommendation includes:

- surveys and analysis concerning willingness to pay, value of travel time savings, and toll saturation
- detailed traffic forecasts for proposed network toll prices
- actual, forecast and benchmark toll road operator costs
- the expected rate of return for each toll road operator.

This recommendation aims to enhance public trust and confidence by providing additional information. It also creates further accountability for State TollCo, by making public additional details of the implications of their decisions. Additionally, the improved transparency will increase the amount of information available to non-incumbent players, reducing the knowledge asymmetry between the dominant incumbent and other parties. Finally, the recommendation seeks to foster market confidence, as increased transparency supports greater market understanding of toll pricing decisions and therefore encourages their continued engagement.

In our view, an overly conservative approach for release of commercial information contained in concession agreements has applied to date. Specifically, BCFMs have not been published on the basis that there is an overriding public interest against disclosure of detailed construction costs, traffic forecasts, operational and major maintenance cost forecasts, and the concessionaire's expected rate of return. It is our strong view that these elements of toll road PPPs must be made public.

In 2006 and 2017 two separate parliamentary committees⁷¹ recommended the publication of the base case financial model for toll road PPPs. The 2017 Inquiry into road tolling report also recommended the publication of the expected internal rate of return for future individual privately operated toll roads, at suitable intervals. The Government response to both reports did not accept these recommendations.

The Lane Cove Tunnel and the Westlink M7 base case financial models were tabled in the Legislative Assembly on 9 November 2005.

Any agreed changes to improve transparency may require changes to the *Government Information (Public Access) Act 2009* and the PPP Guidelines.

Figure 11.1: Stakeholder perspectives on information disclosure

Support for further transparency, specifically around the disclosure of the concession agreements at contractual close, was expressed by stakeholders including the Hills Shire Council and City of Sydney.

The Hills Shire Council: ‘Council supports actions to publish the contracts that have been put in place historically between the NSW Government and the various private toll providers.’

City of Sydney: ‘To understand the impacts of any proposed changes the tolling system, the Government (and Transport for NSW) and Transurban would need to disclose the financial details of the various motorway deals and current motorway patronage.’

Source: Stakeholder submissions, 2023

Recommendation:

Recommendation 27: The NSW Government should disclose full details regarding the setting of tolls. This includes publication in a timely matter of:

- a. surveys and analysis concerning willingness to pay, value of travel time savings, and toll saturation
- b. detailed traffic forecasts for proposed network toll prices
- c. actual, forecast and benchmark toll road operator costs
- d. the expected rate of return for each toll road operator.



D

A better system
for motorists

12 Improving the motorist experience

Recommendations:	
Transparency for motorists	<p>Recommendation 28: Improve the retail experience for motorists by providing personalised insights into past and projected toll spend.</p> <p>Recommendation 29: The NSW Government should simplify and modernise the toll compliance process.</p> <p>Recommendation 30: The NSW Government should improve decision making and trip planning information available to motorists online, on the road and through Service NSW.</p>
Enforcement and debt recovery	<p>Recommendation 31: The NSW Government should review legislation and policies around the issuing of penalty notices for toll non-payment.</p>
Complaints	<p>Recommendation 32: An independent, external dispute resolution function for the toll road industry should be established within State TollCo.</p>

Overview

Chapter 12 focuses on fairness and transparency for the motorist as a retail customer of Sydney toll roads. Recommendations 28-30 address Finding 13 that current toll pricing information fails to adequately enable, inform, and educate motorists. These recommendations are focussed on the ‘front-end’ of the retail customer experience - deciding to use a toll road and paying tolls. The Minns Government already has some commitments in this area which we support. Our recommendations go significantly further to help motorists navigate tolls and bring the retail experience more into line with other industries.

Recommendations 31 and 32 are focussed on the frameworks which apply when something has gone wrong, e.g. a toll is unpaid after two toll notices or a motorists disputes an amount charged to their account. We anticipate that the successful implementation of the ‘front-end’ Recommendations 28-30 would reduce the number of motorists who interact with these frameworks. Our proposal is that the threshold for issuing a fine for toll non-payment should be lifted and State TollCo should provide the external dispute resolution function for private participants in the toll road industry.

Transparency for motorists

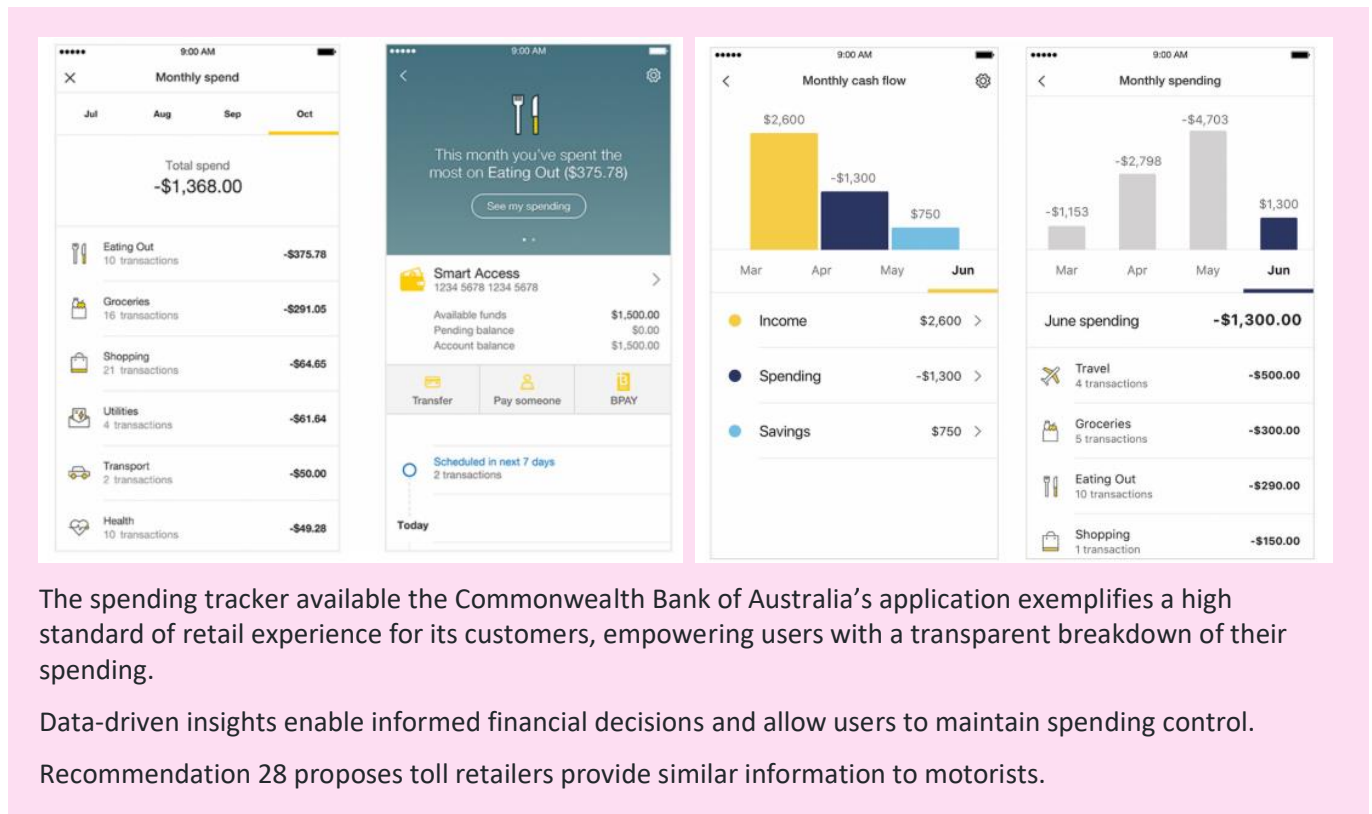
Retail accounts

There are significant opportunities to improve the retail experience for motorists, including:

- revamping statements to be more informative and user-friendly, including:
 - fee breakdowns and links to fee information
 - historical usage data so that motorists can understand how much they spend on tolls.

- projecting usage for motorists based on factors such as historical usage, seasonality, and personal factors to predict their usage
- improving information on retailer websites to improve access to existing toll calculators and content which is currently hard to find
- improving information about cashback and rebates with more prominence to each
- providing personalised reminders and notifications to motorists about their eligibility to claim toll relief
- increased convenience by moving from physical tags to tagless technology.

Figure 12.1: CommBank App, Spend Tracker, Commonwealth Bank of Australia⁷²



Source: Stakeholder submissions, 2023

The 2019 Independent Inquiry into Regulation of Toll Road Roaming Fees recommended that E-Toll should be restructured to operate commercially. The commercial restructuring of the Government retailer is not a specific recommendation of this Review. However, transitioning E-Toll’s customer base and capabilities to State TollCo (Chapter 10) would be consistent with the 2019 recommendation and would better position E-Toll to take advantage of the opportunities above.

The toll compliance process (toll notices)

The Minns Government’s election commitments to consolidate toll notices and reduce administration fees⁷³ are an important step towards improving the toll payments process in New South Wales. In addition, the Government

⁷² McLachlan, T. (2021, March 1). Bank apps that help you budget and reach your savings goals. Tilly Money. [Bank apps that help you budget and reach your savings goals - tillymoney.](#)

⁷³ Legislative Council. (2022, August). Transport Portfolio Committee Inquiry into Road Tolling Regimes (Report 16). Parliament NSW.

should look at digitising toll notices and introducing immediate notifications. Transurban noted its support and advocacy for improvements to the toll compliance process in its submission to the Review.

Figure 12.2: Transurban comments on toll compliance process

Transurban: 'Around 95% of drivers who travel on our roads have an active account or pass in place or set one up during the grace period of around 10 days before a Toll Notice is issued.

For the approximately 5% of trips that do proceed to a Toll Notice, there is an opportunity to improve this experience across the entire NSW network, and Transurban supports and has advocated for reforms to the Toll Notice process.

This could include consolidation and digitisation of Toll Notices and reviewing Toll Notice administration processes and fees. These changes could provide benefits including a:

- better customer experience
- reduction in Toll Notices issued, and
- reduction in the amount of fees paid.

Transurban would need to work closely with Transport for NSW, E-Toll and the broader industry, both at an NSW and national level on any change.

This is an opportunity for a holistic solution that could significantly reduce the number of Toll Notices issued in NSW - the highest of any state - and deliver significant benefits to the people of NSW.'

Source: Stakeholder Submissions, 2023, Independent Toll Review

Toll notices should also be accompanied with motorist-centric information. For example, motorists should be provided with helpful advice about how the most common underlying causes for inadvertent toll non-payment (e.g. flat E-Tag battery and the licence plate number is not linked to a retail account, insufficient credit card balance) so motorists can act to resolve the problem from causing further unpaid tolls.

Real-time road signage⁷⁴

Signage should be improved and incorporate electronic signage where practicable showing prices, travel times and hazards at key decision points as well as along toll routes. Submissions to the Review were almost universal in their support for tolling information to be more readily available and targeted to ensure consumers had the relevant information to make informed choices on toll road conditions and associated costs in real time. Public submissions requested that information be displayed about both toll prices and traffic conditions. Increased use of colours and pictures were suggested.

Figure 12.3: Public submissions - comments on road signage

'Early alerts of any major traffic incidents on toll ways should be displayed before entry.'

'Please ensure tolls are electronically signposted with the exact price so people know what they are paying as they pass through - currently it is almost impossible to know what the toll is when driving and calculate how much we are spending in a day/week/month/year on tolls.'

'Toll road costs aren't transparent while driving. I don't see signage of the price before entering (M4 tolls), the highways which make it hard to judge if I should take it over public roads.'

⁷⁴ The Independent Reviewers thank Jonathan Tang for a detailed and carefully considered Submission particularly in relation to improved road signage.

'My complaint is cost if tolls and no signage to the cost and any delays and for how long thereby being unable to make an informed decision.'

A.



'Improved models of [Variable Message Signs] could be introduced to show 'rich' content such as different coloured text, images, or graphics, as opposed to the current situation, just orange text.'

Image A⁷⁵ is a typical variable message sign in NSW, with only orange font.

B.



Image B⁷⁶ is an example variable message sign which includes two colours and icons.

C.

'To better distinguish toll roads from toll-free roads, signs for toll roads should visually 'stand out' from other road signs.'

Image C⁷⁷ is a typical NSW decision point road sign. A yellow 'badge' is used to show which the tolled option.

⁷⁵ Roads and Maritime Services., & Transport for NSW. (n.d.). Warning Road Signs. NSW Government. <https://www.nsw.gov.au/driving-boating-and-transport/roads-safety-and-rules/warnings-and-hazards/warning-road-signs>.

⁷⁶ Dysten. (n.d.). Variable Message Signs - VMS. <https://smartcitydisplays.com/en/product/variable-message-signs-vms/>.

⁷⁷ Google Maps. (2023, September). Artarmon, New South Wales. <https://www.google.com/maps/@-33.8127874,151.1928057,3a,75y,242.29h,96.44t/data=!3m6!1e1!3m4!1sY3bou7GC7uVSepbWIP1nGQ!2e0!7i16384!8i8192?entry=ttu>.



Image D⁷⁸ is an example decision point road sign. This sign better distinguishes the toll road from the untolled roads.

D.



Source: Public Consultation Submissions, 2023, Independent Toll Review

In 2006 the Joint Select Committee on the Cross City Tunnel also recommended signage improvements. The committee recommended in its second report that all toll roads, whether publicly or privately operated, advertise the cost of use at entry points.⁷⁹ The government response at the time accepted this recommendation. However, 18 years later, it has not been implemented well to date. Submissions to the Review were almost universal in their support for tolling information to be more readily available & targeted to ensure consumers had the relevant information to make informed choices on toll road conditions and associated costs in real time.

Improved signage will be critical for the full benefits of more sophisticated pricing strategies like peak/off-peak pricing and dynamic pricing to be achieved, should they be implemented in future. Peak/off-peak pricing and dynamic pricing will only prevent congestion from occurring, or encourage motorists to use an under-utilised road, if motorists are informed of the higher or lower pricing in advance of the toll road access point. This advance warning must allow sufficient time for motorists to decide whether or not to use the toll road.

Online trip planning tools

Transport for NSW, State TollCo and Linkt should work together to develop a ‘one stop shop’ holistic transport application and corresponding website that provides a single ‘source of truth’ for motorists and facilitates trip planning. It should also offer features such as trip information and statements, historic spending breakdowns, predictive spend, costs comparisons, rebates, and notifications. This application should leverage and expand the

⁷⁸ Vic Roads. (2019, September 23). About Victoria’s toll roads. <https://www.vicroads.vic.gov.au/traffic-and-road-use/road-network-and-performance/toll-roads-in-victoria/about-victorias-toll-roads>.

⁷⁹ Joint Select Committee on the Cross City Tunnel. (2006, May 18). Inquiry into the Cross City Tunnel (Report 2). Parliament NSW. [Microsoft Word - 060518 Second Report Media release.doc \(nsw.gov.au\)](#).

capabilities of both the Transport for NSW's official Opal Travel App and Transport Connect's central hub (and integrate with Service NSW for identity management) (features and functionalities are outlined in Figure 6.2).

As an interim step to the 'one-stop shop', Transport for NSW and State TollCo could create a personalised trip planner leveraging the existing Transport NSW trip planner and calculator showing personalised pricing and route alternatives (for all transport options including public transport). The trip planner could include information on pricing, time, traffic, fuel consumption, and environmental impact of all potential routes (both tolled and untolled). A virtual assistant through the app would also further improve the motorist experience.

Third-party navigation applications should be further customised to be more personalised for the motorist (by allowing them to choose which toll roads they are comfortable travelling with as well as showing emissions usage and fuel consumption data for their specific vehicle type) and further integrate toll pricing within these apps. Relevant apps include Google Maps, Apple Maps, and Waze.

Non-digital communication

Non-digital education options should be provided to motorists for tolling-related topics. This could include hardcopy pamphlets and brochures distributed at Service NSW centres and via direct mail when a motorist receives their first toll notice, their first license or an E-Toll tag.

Recommendations:

Recommendation 28: Improve the retail experience for motorists by providing personalised insights into past and projected toll spend.

Recommendation 29: The NSW Government should simplify and modernise the toll compliance process.

Recommendation 30: The NSW Government should improve decision making and trip planning information available to motorists online, on the road and through Service NSW.

Debt recovery

Failure or refusal to pay a toll when due is an offence. As outlined in Appendix H, if a single toll remains unpaid after two toll notices, the toll road operator may request Transport for NSW to issue a penalty notice to the registered owner of the vehicle. The penalty notice is a fine, typically \$180. We consider the current approach to be too heavy handed and out-of-step with how debts for other services are pursued.

Recommendations 28-30 are focussed on streamlining and modernising the 'front end' of how motorists interact with toll roads and pay for tolls. The successful implementation of these reforms should reduce the number of tolls still outstanding after two toll notices.

We consider the threshold to trigger a penalty notice should be lifted (e.g. to \$500 in unpaid tolls). Up until the new penalty notice threshold is reached, the motorist would still receive toll notices and the toll road operator could still pursue civil debt recovery for unpaid tolls.

Recommendation:

Recommendation 31: The NSW Government should review legislation and policies around the issuing of penalty notices for toll non-payment.

Complaints

Currently each toll road operator is required to resolve complaints relating to tolling on its roads. They are required by law to deal with objections to tolls and charges. The process they are required to follow includes internal review. Private toll operators (supported by toll account retailer, Linkt) have established and funded a body called the Tolling Customer Ombudsman (TCO), which assists in discharging those obligations. The TCO provides its services to Linkt customers across NSW, Queensland and Victorian roads. It acts as an internal dispute resolution body.

There are concerns about the operation of the TCO. Motorists lack confidence in the TCO and are dissatisfied with current dispute resolution mechanisms. There is a lack of transparency about the funding and resources available to the scheme. Complaint resolution times are high. The TCO is not a government agency or statutory body, it is notably also not a member of the Australian and New Zealand Ombudsman Association (ANZOA). Transurban initiated the TCO, and it is understood funds the scheme giving rise to questions about its independence. Motorists are confused about where they should take their complaints.

In the absence of a clear external dispute resolution body resolving complaints in relation to tolling in NSW, motorists sometimes direct their complaints to the NSW Ombudsman. The NSW Ombudsman has an important role to play, overseeing matters of public administration across all State and local government agencies, and community service providers.

Figure 12.4: Ombudsman NSW Submission

‘Over the past 2 financial years, at least 20%⁸⁰ of contacts to the NSW Ombudsman about tolling issues were classified by us as ‘misdirected’ - meaning that they concerned matters outside of our jurisdiction. When the NSW Ombudsman receives a complaint about Transurban/Linkt, we will if appropriate refer that person to the TCO.’⁸¹

Figure 12.5: Mr Marabani perspective

‘Now, the Tolling Ombudsman, in my honest belief, should be a government agency that actually looks after it.’⁸²

Source: Public Hearing Transcripts, 2023, Independent Toll Review

Importantly, the TCO’s remit includes complaints relating to toll notices issued under a concessionaire’s letterhead and civil debt recovery pursued by concessionaires.

There should be a single external dispute resolution framework for motorists, on complaints and dispute resolution for all NSW toll roads. In the first instance, State TollCo should undertake this function for all toll roads. State TollCo would be well-placed to respond to systemic issues it becomes aware of through its complaints functions, and to make recommendations to Government about further areas for reform. Issues with State TollCo’s conduct would be subject to oversight by the NSW Ombudsman.

State TollCo, in its complaint handling role, should endeavour to meet the six essential criteria set out by the Australian and New Zealand Ombudsman Association - independence, jurisdiction, powers, accessibility,

⁸⁰ The NSW Ombudsman notes the following about data referred to in this submission: searches were made for complaints including the words ‘toll’ or ‘tolling’; data for the 2022-23 financial year has not yet been finalised and is subject to change.

⁸¹ Ombudsman NSW. (2023). Have Your Say Submission. Independent Toll Review.

⁸² Independent Toll Review. (2023, July). Public Hearing Transcripts, pp. 117.

procedural fairness and accountability.⁸³ It would not be fully independent when determining matters relating to its retail functions, but the separation of levels of decision-making mandated by legislation would ensure some independence in decision-making. This could be strengthened by internal governance arrangements and by a more tailored legislative mandate. State TollCo should be the single point of contact for NSW toll road complaints about State TollCo (including E-Toll), Transport for NSW, Service NSW, Revenue NSW, Transurban (including Linkt) and concessionaires.

Linkt customers may still choose to use the services of the TCO, but that would have no impact on the complaint handling powers and responsibilities of State TollCo. There would no longer be a statutory obligation on toll road operators to resolve complaints about their tolls, but they would of course still be free to do so, in their own commercial interests. They would also be able to forward complaints to State TollCo for resolution.

Recommendation:

Recommendation 32: An independent, external dispute resolution function for the toll road industry should be established within State TollCo.

⁸³ Australian and New Zealand Ombudsman Association. (2010). Essential criteria for describing a body as an ombudsman. https://anzoa.com.au/ws/media-library/e496946f33294277ad3974c7d27da483/2010_anzoa_policy-statement_essential-criteria-for-describing-a-body-as-an-ombudsman.pdf.

Appendices

Appendix A: Past reviews

Ministerial Inquiry into sustainable transport in New South Wales Final Report ('Parry Report'), December 2003

Key Findings:

1. A large amount of taxpayer money goes to fund passenger transport services of one sort or another across NSW every year. This funding is equivalent to one-fifth of the NSW Government annual health budget and about the same as the annual State police budget.
2. An even larger amount of money will be required to maintain and improve the current transport network—over \$2 billion per annum. Still more would be required if this network was to be extended to any significant degree to service new areas.
3. The current arrangements are not delivering the most appropriate transport solutions to best meet the needs of the broad community. Taxpayers are not getting the best possible value from the large amounts of money being spent each year on public transport. This has been a problem for many years, facing governments from all sides of politics.

Recommendations:

1. A twenty-first century solution to create a sustainable transport system for the benefit of the broad community, the cost of which will run into billions of dollars.
2. Better deployment of funds and greater efficiency to improve value from the nearly \$2 billion that taxpayers currently spend each year on passenger transport.
3. Improved cost recovery at the same time as extra funding for system improvements—from taxpayers; from users via modest real fare increases; from the system via efficiency improvements; and from savings from refocusing existing subsidies for school students and seniors.
4. Any implementation of road use pricing must be accompanied by rationalisation of the current taxation of motorists.
5. Undertake a joint review with the Commonwealth Government of taxation, expenditure and other policies that are detrimental to public transport.
6. Consider implementing electronic road pricing (ERP) within the next 5-10 years to address external costs such as congestion, pollution, road wear and tear and accidents. In the interim, introduce two-way tolling and harmonising tolls across existing and new tolled arterials.

Review of Future Provision of Motorways in NSW Report ('Richmond Review'), December 2005

Key Findings:

1. The use of tolls is an effective mechanism for funding roads where there are high levels of traffic and the toll can be levied fairly on users, considering the needs of different user groups and the toll's value for money to users.
2. In the application of the 'no cost to government' policy on projects, the capacity of Government to negotiate more flexible outcomes is constrained.
3. Public domain improvements priced and delivered separately to the motorway allows flexibility in the funding source.
4. The RTA procurement approach results in a technically efficient process, providing a high degree of certainty, while minimising subjectivity and probity risks, although, the ability for Cabinet to this to review policy and financial trade-offs will be constrained by this approach.
5. It is inappropriate to finance future motorways as if they were stand-alone projects.
6. Based on the experience of other toll roads there is often a period of 2-3 years until traffic usage patterns are fully established and the benefits/community acceptance or otherwise can be properly understood.
7. Early indications do suggest that CCT toll levels and re-arranged road routes do not accord with user preferences.

Recommendations:

1. The NSW Government, in appropriate circumstances, should continue to utilise PPPs, including where appropriate PFPs, to deliver motorway projects, subject to existing Government policies and processes and those proposed in this Report.
2. The Government should carefully consider options for the structure of future motorway projects, ranging from projects with exclusively government ownership, to full private equity, and combinations thereof.
3. The policy of motorway procurement at 'no cost to government' should be abandoned.
4. In tendering a PFP for a toll road, the Government should be flexible about the toll and the term.
5. Where appropriate, the Budget Committee of Cabinet (BCC), at the initial stage of the business case and funding model approval, may determine that an upfront payment to recover costs is an appropriate mechanism for a specific project.
6. All project deeds and other agreements signed on behalf of the government with consortia should be released.
7. The Government should continue to table in Parliament timely summaries of PPP contracts.
8. During the life of major PPP contracts, amendments and material variations to project deeds and other agreements signed by the Government with consortia should also be publicly released and accompanied by a summary of impacts on the parties and on the public interest.
9. Where there is an existing arterial road available as an alternative route to a toll road, with the introduction of the toll road the existing arterial road will have at least the same number of general traffic lanes as it had prior to the toll road opening.

10. If planning objectives or conditions compromise the alternative route policy (as in the CCT), this issue should be the subject of very focused community and user consultation prior to any government decision.
11. Local road changes must remain at the total discretion of government.
12. Ensure the government maintains control of the road and transport network.
13. The RTA, in conjunction with the relevant parties to a PPP contract, should develop a seamless process of consultation and stakeholder management through all phases of a project.
14. The company created as the contracting party under a PPP must be required to co-ordinate their activities with the RTA in relation to the operations, marketing, public information, and stakeholder management processes associated with the project over the full concession period.
15. Specific requirements, including KPIs, should as a matter of policy ensure that adequate project implementation, public information and marketing strategies are developed by toll road operating companies, particularly addressing the commissioning and the ramp-up phases of projects.
16. Future toll road contracts should include a mandatory requirement for the toll road operator to provide an initial toll-free period to assist user familiarity and allow users to make informed choices.
17. During the project delivery phase, the Steering Committee and the Project Control Group (PCG) for a project should continue to involve representatives from Government agencies, as well as appropriate external parties.
18. There must be greater alignment between explicit project objectives and the objectives that the planning process sets out to achieve.
19. The Minister for Planning in consultation with relevant Ministers should prepare for the Cabinet Standing Committee on Infrastructure and Planning (IPCC) agreement a consolidated set of environmental and amenity criteria and standards (e.g. noise, air, vibration, pollution etc) for the construction and operational phases of major infrastructure projects.
20. Unless there are very exceptional circumstances, a toll road project should be part of the major road projects within the State Infrastructure Strategy reviewed and endorsed by the IPCC and then approved by the BCC each year.
21. Toll roads should be considered under Part 3A of the EP&A Act.
22. At an early stage of a toll road project the IPCC should request the Minister for Planning to undertake an appraisal of the project identifying the potential key planning, environmental and community impact factors and matters which could have a significant bearing on a later full assessment.
23. Before formal community consultation for potential new motorway projects is announced, the IPCC and BCC should have confirmed to the relevant portfolio Minister that the proposed project has been assessed against clear project objectives and broader government strategies. When the project business case and the financing model is approved, the BCC should also identify milestone points at which further reviews are to be undertaken and reported back.
24. If during the environmental assessment process the proponent Minister, as a result of the legislative requirement to be consulted by the Minister for Planning, identifies that the proposed conditions of approval will adversely impact the business case, the BCC should consider whether to proceed with the project or how the proponent Minister might modify the project to meet the environmental and other imperatives while still achieving the project objectives.
25. Prior to the execution of the contract and the Treasurer signing under the *Public Authorities (Financial Arrangements) Act 1987* (PAFA Act), Treasury should ensure that the RTA has met all the conditions of Cabinet approval, including value for money overall and for the user.

26. RTA project assessment should include value for money (i.e. the toll) for the user as a specific and appropriately weighted evaluation criterion.
27. The RTA's project assessment methodologies should provide for the inclusion in evaluation and review panels of appropriate high-level non-government people with specialist skills to provide independent viewpoints regarding the assessment and decision-making process, as well as the RTA's retained legal and technical advisors.
28. RTA project assessment methodologies should provide for planned and structured face-to-face opportunities for proponents and the RTA to clarify and understand issues which may assist the parties to submit, and the RTA to receive, more informed proposals.
29. The RTA should ensure that its modelling methodologies for any new toll roads, from which project benefit/cost ratios are generated, are regularly independently reviewed, with the results of these reviews being provided to the Minister for Roads and the IPCC.

Joint Select Committee on the Cross City Tunnel

1st Report, February 2006

Key Findings:

1. In determining the value for money for the CCT, the Government focused on a policy of 'no cost to government'. The value for money to those paying for the project, that is, the tunnel users, was not adequately considered.
2. No formal public interest evaluation was undertaken for the CCT project.
3. There was an insufficient evaluation of the public interest before the decision was taken to open the project to the private sector.
4. The current public interest evaluation contained in the Working With Government Guidelines is not clear.
5. Some benefits that may have been lost as a result of providing the CCT project through a PFP include the flexibility to make changes to the road network without exposure to financial liability, or the capacity to reduce the level of the toll to encourage greater use of the tunnel.
6. While the project may have resulted in no net cost to government, it has resulted in significant cost to the community, through higher than anticipated tolls and added inconvenience for the users of local roads in the area between the East and West tunnel portals.
7. Insufficient detail in the Working With Government Guidelines and the general nature of the document, and its wide audience, limits its effectiveness for agencies.
8. Subsequent alterations to tolls, traffic levels and traffic management measures were made both during and following the supplementary environmental assessment process. These changes appear to have occurred without the depth of analysis or assessment that was undertaken for the initial EIS.
9. The 'no net cost to government' imperative has adversely impacted on the CCT project's primary objectives.
10. Not enough attention was given to strategic planning at an early stage of the project, despite agencies that gave evidence to the Inquiry indicating that they followed Government policy in the consideration, planning and assessment of the CCT project.

11. A clearer understanding of how the toll level is calculated would be of public interest. The lack of transparency about the level of the toll and the way in which it is calculated only increases public suspicion of toll roads.
12. The community living in the area affected by the surface road changes associated with the tunnel felt that they had been ignored, misinformed, and treated with indifference or even contempt.
13. The Committee invited the former and current Premier, and former and current relevant Ministers to give evidence at public hearings. The failure of the current Premier and relevant ministers to attend made it difficult for the Committee to address the issue of ministerial accountability.

Recommendations:

1. That the Working with Government: Guidelines for Privately Financed Projects be made more prescriptive in relation to the public interest evaluation of projects before the decision to consider them as a Privately Financed Project.
2. Toll levels for future toll roads should not be assessed only in terms of what the private sector offers during tender processes and contract negotiations. Mechanisms must be in place to ensure that appropriate environmental and planning consideration is given.
3. The review of the Working with Government: Guidelines for Privately Financed Projects consider specific issues raised in relation to the Cross City Tunnel project, including clearer guidance on the role of the environmental planning and assessment process, and the process to be followed where both conforming and non-conforming bids are to be considered by agencies contemplating the use of privately financed projects.
4. That a separate, more detailed, policy on privately financed projects be developed to guide government agencies. This will be further considered in the Committee's second report.
5. That both the Working with Government: Guidelines for Privately Financed Projects and the detailed policy on privately financed projects include review mechanisms to ensure that changes to relevant government policy, changes to key agencies and structures, and significant issues arising out of project reviews of privately financed projects can be incorporated in an efficient and timely manner.
6. That the Summary of Contracts for future infrastructure projects include a summary of the comparison of the Public Sector Comparator with private sector proposals.
7. That the NSW Roads and Traffic Authority request that CrossCity Motorway place daily and monthly Cross City Tunnel traffic use figures on their website.
8. That any policy of charging private consortia a fee for a 'right to operate' a piece of infrastructure be expressly discontinued.
9. That any information relevant to an increase in toll pricing resulting from contract variations should be transparent and publicly available.
10. That the Government review existing community consultation practices, particularly in relation to major infrastructure projects, and develop standardised, plain English guidelines available to the community defining 'community consultation' in relation to such projects.
11. That the Government refer the issue of community consultation to the Standing Committee on Social Issues to conduct a review of the experiences of New South Wales residents with consultation processes and perform a comparative study of best practice consultation methods.
12. That the NSW Roads and Traffic Authority ensure that the community consultation process in relation to Bourke Street's future status is inclusive and considers the wide variety of opinions and views in the community.

13. The trial closure of Bourke Street ends on 28 February 2006. The Committee recommends that the NSW Roads and Traffic Authority immediately reopen the street while the review is being conducted.
14. That the NSW Roads and Traffic Authority immediately reverse the traffic measures identified in Appendix 5 of this report and categorised as category B, C or D and further investigate reversing those referred to as category A as soon as possible.
15. That the Government continue to encourage the operators of the Cross City Tunnel to lower the toll. A reduction of the toll to \$2.90, as suggested by the NSW Roads and Traffic Authority's traffic consultants, would be revenue neutral and improve patronage of the tunnel.
16. That the Government finalise the revised guidelines for public release of documents, taking into consideration the recommendations of the Infrastructure Implementation Group's Review of Future Provision of Motorways in NSW and the Auditor General.
17. That the revised guidelines for the public release of documents clarify the status of amendments or variations to existing contracts.

2nd Report, May 2006

Key Findings:

1. If the toll is returned to its former level of \$3.56 for cars at the end of the reduced toll period, there may be a backlash by motorists against using the tunnel.
2. The increase in traffic using the tunnel following the halving of the toll was in the order of 18 per cent, translating to a daily average of 33,500 vehicles. This is a long way from the estimate of 90,000.
3. Direct financial impact is being borne by the private operators of the tunnel as a result of the transfer of patronage risk from the public sector to the private operator that the Cross City Tunnel PPP established.
4. The community continued to pay the price of congested road surfaces during the construction of road changes and associated inconvenience, as well as the monetary price of the toll for tunnel users.
5. PPPs have averaged around 11 per cent of the overall NSW capital works budget since 1993-1994, this percentage is expected to remain between 10 per cent and 15 per cent in future.
6. The widespread nature of PPPs provided by government agencies, and potentially by local governments, underscores the importance of an authoritative and effective framework to support agencies through the PPP process.
7. While it is appropriate that Government make policy decisions about levels of expenditure and public debt, one of the consequences of not using public debt is the potential impact on the future flexibility of government in relation to the State's infrastructure.
8. Financial risk has been removed from the public sector and placed with the private sector.
9. The standardisation of approaches by Australian jurisdictions to PPPs is sensible and appropriate.
10. The nature of the funding of the projects is of secondary importance to their priority within the strategic framework.

Recommendations:

1. That the Government encourage the operators of the Cross City Tunnel to lower the level of the toll to \$2.90 at the conclusion of the current reduced toll period.

2. That the RTA ensure that all toll roads, whether publicly or privately operated, advertise the cost of use at entry points.
3. That the Government ensure that motorists are advised to take appropriate precautions against possible adverse air quality in tunnels, with such advice displayed on entry to road tunnels or by any other means.
4. That the Roads and Traffic Authority investigate ways to improve the operation of bus lanes in the Central Business District.
5. That the Roads and Traffic Authority investigate methods of improving the dissemination of information regarding changes to metropolitan Sydney road infrastructure to potential country users.
6. That for future private toll road infrastructure projects, information on vehicle numbers be made publicly available on a regular basis.
7. That NSW Treasury, and relevant government agencies or parliamentary committees, conduct regular reviews of world best practice in the area of PPP policy, including examples of failed or problematic PPP projects, with the reviews to be made publicly available.
8. That the documents to be publicly released for any Public Private Partnership or Privately Financed Project include:
 - a. the full contract and any material variations
 - b. a contract summary (verified for accuracy by the Auditor General)
 - c. details of the public interest evaluation conducted prior to the decision to enter into the PPP or PFP
 - d. a summary of the Public Sector Comparator and the comparison between it and the successful project (verified for accuracy by the Auditor General)
 - e. the base case financial model
 - f. the Public Sector Comparator.
9. That the NSW Treasury continue to collaborate with other Australian jurisdictions and pursue a standardisation of approaches in relation to Public Private Partnerships.

3rd Report, Lane Cove Tunnel, August 2006

Key Findings:

1. While the Cross City Tunnel project implemented a non-conforming proposal that required substantial changes to the project and a subsequent supplementary Environmental Impact Assessment process, the Lane Cove Tunnel project complied with the original parameters of the project proposal.
2. Many of the concerns that the Committee raised and addressed in the First and Second Reports remain applicable to the use of the Public Sector Comparator (PSC) in relation to the Lane Cove Tunnel project.
3. the recommendations of the First and Second Report relating to the PPPs, particularly the recommendation that there be greater explanation and information provided in the Summary of Contracts about the PSC and how the comparison with the private sector proposal is actually conducted.
4. It is likely that there will be confusion arising from the proposed changes to existing roads and associated roadworks once the Lane Cove Tunnel project moves into Stage Two, with the tunnel open.
5. The change to the Lane Cove Tunnel's ventilation system, given the obvious and demonstrated importance of air quality to the community, should have been widely advised by the RTA.
6. The changes made to the Falcon Street ramps demonstrate a lack of community engagement.

7. The difference between the traffic estimates by RTA and Connector Motorways, and highlights the concerns raised by a number of witnesses over the possibility of congestion when the Lane Cove Tunnel opens.
8. The Committee notes that the community frustration over the Cross City Tunnel project did not fully appear until the surface road works commenced.
9. In response to concerns over the effect of air pollution on the health of the community, NSW Health has commissioned a research study to measure the present pollution levels and health of local residents and compare with measurements once the Lane Cove Tunnel has opened.
10. Air quality and air pollution are complex areas, and the potential for misunderstood information to be disseminated to the community is great.

Recommendations:

1. That Consistency Assessment and Environmental Reviews prepared for variations to major infrastructure projects be made publicly available by the proponent at the same time as they are provided to the Department of Planning.
2. That Connector Motorways Group Pty Ltd publish monthly reports on its website of the number of vehicles using the Lane Cove Tunnel, commencing the month after the date of its opening.
3. That community information strategies for projects of long duration be maintained through all phases of the project, with the relevant government agency taking a key role in the community information strategy.
4. That the Roads and Traffic Authority work with Connector Motorways to ensure that the monthly information sheets provided by Connector Motorways include clear and concise descriptions of the surface street changes that will follow once the Lane Cove Tunnel opens. This work should be done in conjunction with the Lane Cove Tunnel Transition Working Group.
5. That the NSW Government give consideration to reviewing the current proposal to have one general traffic lane and one 24-hour bus lane in each direction on Epping Road.
6. That the Roads and Traffic Authority retain the shared pedestrian path and cycleway associated with the project.
7. That the imposition of up-front fees for major infrastructure projects delivered by Public Private Projects be limited to reasonable development costs incurred by the public sector, and details should be made public with the contract.
8. That the Department of Planning have an increased role in assessing the Consistency Assessment and Environmental Review process, relating to any modifications submitted subsequent to the Preferred Activity Report and the project's Conditions of Approval, to ensure that the community is fully informed of substantial modifications.
9. That in order to ensure a broad range of community representation on Community Construction Liaison Groups, the Department of Planning increase the minimum number of community representatives on these groups from two.
10. That the RTA consider constructing a scale model of future projects for public display, in order to assist residents, visualise the project as a whole.
11. That NSW Health ensure that information about, and the results of, the Lane Cove Tunnel Air Quality study are made available on the Department's website, and that progress updates on the study are made to the Lane Cove Tunnel Air Quality Consultative Committee and promptly made available on the Department's website.

12. That the NSW Government continue to implement the requirements of the Action for Air plan and strive to constantly improve and update the air quality standards.
13. That future road tunnel projects include within the call for tenders a requirement for tenderers to design and cost in-tunnel filtration as a component of the ventilation systems.
14. That the decision on whether or not to install in-tunnel filtration in future road tunnel projects be made by the Budget Committee of Cabinet, on the basis of advice received from relevant Government departments.
15. That the NSW Government continue to work with the Commonwealth Government to ensure that Australian standards for vehicle emissions meet international best-practice standards.
16. That the proposed in-tunnel filtration trial for the M5 East be monitored carefully by the RTA, and that the assessments be promptly made available on the RTA's website.
17. That the Government ensure that a timetable for the installation of filtration technology in the M5 East Tunnel is publicly announced before the end of 2006.

Post Implementation Review: M7 Motorway, Cross City Tunnel and Lane Cove Tunnel, March 2010

Key Findings:

1. Identification of project objectives - Recognising that project objectives drive the selection of a preferred option, the objectives adopted for future motorway projects will need to be developed from rigorous analysis of transport deficiencies and predicted changes in employment and land use.
2. Economic appraisal - Further research is required to develop a framework for assessing wider economic benefits and analyse the contribution of this assessment to project decision making.
3. Programme alignment - Recent changes to the major project assessment and planning approval process have the potential to better align project development, environmental assessment and procurement processes and enable earlier involvement of the construction industry.
4. Public interest evaluation - The development of a framework for public interest evaluation of motorway proposals will assist in selecting an appropriate procurement model for future motorway projects.
5. Traffic modelling - Methodologies utilised to assess future motorway projects should utilise the latest techniques, include sensitivity analysis and consider the implications of 'ramp up'.
6. Network performance - Integration with the surrounding road network and incident management planning should commence early in developing a motorway project.

Recommendations:

1. Ensure project objectives are developed to take into consideration the relevant NSW Government plans and strategies and target users.
2. Ensure project objectives are specific and measurable.
3. Ensure project objectives are a focus of community consultation throughout the project development and delivery phases.
4. Development of a framework to assess wider economic benefits on a pilot project to analyse the contribution of this assessment to project decision making as part of the economic appraisal completed at each of the WWG phases.

5. A procurement process which continues to require submission of proposals based on a concept design developed by the RTA, with the option to submit nonconforming design innovations.
6. The potential for earlier involvement of the construction industry in projects through Concept Plan Environmental Assessment under Part 3A, to be further investigated.
7. RTA tender assessment methodologies should provide opportunities for planned and structured face-to-face meetings for proponents and the RTA to clarify and understand issues which may assist the parties to submit, and the RTA to receive, more informed proposals.
8. Develop a framework for public interest evaluation of future motorway proposals as privately financed projects.
9. The traffic modelling undertaken in assessing future motorway projects should utilise latest and up to date modelling techniques and consider the implications of 'ramp up' in detail.
10. Undertake more rigorous sensitivity analysis on traffic modelling inputs such as forecast population and employment growth, land use changes and tolling strategies to assess the potential impacts of variations.
11. Consideration of the merits of undertaking discrete traffic modelling approaches for each of the following:
 - Environmental assessment (which needs to focus on worst case maximum growth scenarios).
 - Project design (which needs to focus on required morning peak hour capacity).
 - Revenue prediction (which needs to focus on total daily traffic).
12. Undertake more rigorous stress testing on financial model assumptions in assessing bids. Reconsider funding options for the procurement of future motorway projects, ranging from projects with exclusively government funding, to full private funding, and combinations thereof.
13. In procuring privately financed partnerships to deliver future motorway projects, the NSW Government should consider the benefits of a range of tolling and concession scenarios.
14. If the imposition of a toll is proposed, the RTA tender assessment should also include value for money (i.e. the toll) for the user as a specific evaluation criterion.
15. Ensure traffic modelling undertaken to assist in forecasting revenue includes consideration of other tolls on the network and the likely impacts of traffic ramp up.
16. Consider the merits of research into willingness to pay for tolls.
17. Consider the use of distance-based tolling for future motorway projects and or time of day tolling, if appropriate.
18. Comprehensive incident management planning to be undertaken as early as possible in both the development and delivery phases of all tunnel projects in close consultation with relevant authorities.
19. A network integration plan to be developed prior to project opening including consideration of results from updated traffic modelling and development of education and monitoring strategies as required.

NSW Legislative Council Health and Community Services Portfolio Committee Inquiry into road tolling in NSW report, October 2017

Recommendations:

1. That the NSW Government publish a contract summary of the WestConnex - M4 Widening Project Deeds on the WestConnex website.

2. That the NSW Government publish the expected internal rate of return for future individual privately operated toll roads, at suitable intervals.
3. That the NSW Government:
 - a. Mandate the disclosure of strategic business cases, appropriately redacted of commercial in confidence information, for major infrastructure projects such as toll roads,
 - b. Publish the base case financial models for the NorthConnex and WestConnex projects, and future projects, 18 months after either: (a) the commencement of construction on a project, or (b) after the opening of the first stage of a project, whichever comes first,
 - c. Mandate the disclosure of cost benefit analysis at the same time as the base case financial model is published, and
 - d. Mandate the disclosure of traffic forecast modelling and any reviews of this traffic forecast modelling, appropriately redacted of commercial in confidence information, for major infrastructure projects such as toll roads, at the same time as the base case financial model is published.
4. That the NSW Government ensure that the consumer price index be considered as the default position of the road toll escalation rate for future concession agreements.
5. That the NSW Government ensure that the same level of transparency and accountability as required by a public sector agency be applied to the Sydney Motorway Corporation and any future infrastructure delivery entity.
6. That the NSW Government:
 - a. annually publish remuneration for the senior executives of Sydney Motorway Corporation
 - b. issue directions to the Sydney Motorway Corporation so that it complies with the Government Information (Public Access) laws.
7. That the NSW Government, prior to signing any future road tolling concession agreement, establish an independent entity that can publish an informed statement on whether any proposed road tolling agreement safeguards the public interest.
8. That the NSW Government investigate the costs and benefits of implementing a capped toll across all of Sydney's road network and publish this information so that the community can have an informed debate.
9. That the NSW Government identify and publish the evidence supporting its decision to toll heavy vehicles three times that of light vehicles.
10. That the NSW Government ensure that new or renegotiated road tolling concession agreements enhance the ability of future governments to manage the wider road network.

Independent Inquiry into Regulation of Toll Road Roaming Fees final report, December 2019

Key Findings:

1. Current NSW toll road roaming fees are consistent with global and national benchmarks and our assessment of the retail cost to provide toll retail functions - with no evidence presented to the contrary.
2. The NSW toll retail market has consolidated over time, seeing effectively two vertically integrated retailers serving around half the market each - one owned by the NSW Government and the other by the private sector.

3. There was no evidence to demonstrate the exercise of any market power to date through increased roaming fees in New South Wales.
4. There was some evidence from stakeholders that a contingent risk of higher roaming fees could reduce competition for new toll road concessions in New South Wales.
5. It is worth noting that the ACCC has not previously found that vertically integrated toll retailers impact competition for toll road concessions. Nonetheless regulation could act as a 'safeguard', providing additional certainty and transparency regarding maximum roaming fees in New South Wales.

Recommendations:

1. The NSW Minister for Transport should regulate toll road roaming fees by specifying the maximum trip-based retail fee (price cap) that can be charged by toll retailers to motorway companies, for each trip on NSW toll roads.
2. From 1 July 2020 a roaming fee price cap of \$0.20 per motorway trip should be applied in New South Wales.
3. This maximum price cap should apply for five-year periods, before being reviewed.
4. In the intervening years, the roaming fee price cap should be escalated on an annual basis by the greater of (CPI - 1 per cent) or zero.
5. For the first five years, a 'side constraint' will limit any roaming fee increase beneath the price cap to less than CPI + 3 per cent per annum to limit any transitional risks.
6. The price cap and regulatory framework should be reviewed by the Minister after five years, or beforehand if significant unanticipated changes occur that either impact the cost of providing toll retail services, the number of tolled trips or the structure of the market, potentially based on independent advice and consultation.

Complementary Recommendations:

1. The NSW Government should consider modernising the toll road industry's current self-regulation of the entry of new toll retailers; via a simple regulation allowing access for new entrants, while protecting the legitimate commercial interests of motorway companies.
2. However, with few signals for 'in market' competition and no obvious entrants, this consideration should be balanced against any change costs, via a regulatory impact statement or similar.
3. The NSW Government's 'E-Toll' business should be restructured to operate commercially, including through transparent financial accounts, with clear cost and revenue allocation between publicly owned motorways and the toll retail business.
4. E-Toll should commence charging a 'roaming fee' for all trips undertaken by E-Toll customers on NSW roads, including those on the Sydney Harbour Bridge corridor, reflecting that 'roaming fees' now serve as a general toll retail service fee. This should not impact motorists.

NSW Legislative Council Transport Portfolio Committee Inquiry into road tolling regimes report, August 2022

Key Findings:

1. That New South Wales drivers now undertake more than one million toll trips a day, raising more than \$2 billion in total revenue every year.

2. That the NSW Government has failed to provide information to this inquiry about the total toll burden that drivers will be forced to pay under existing toll contracts despite estimates that it is more than \$100 billion in today's dollars.
3. That the decision by NSW Treasury to withhold from public release contract details and traffic relating to WestConnex until 2060, and possibly longer, is an abuse of executive power.

Recommendations:

1. That the NSW Government as part of its Toll Road Pricing and Relief Reform Review commit to:
 - a. genuine and meaningful reform of road tolling,
 - b. consulting with affected stakeholders in government, industry and the community,
 - c. no new tolls or new or revised toll road contracts being issued prior to consideration of such reform, in order to not further limit the government's flexibility and control over toll road pricing.
2. That the NSW Government move to realign toll pricing in corridors where trucks are on suburban streets to ensure trucks can feasibly use toll roads where possible, including the option of the extension of current toll relief schemes to the road freight industry.
3. That the NSW Government immediately release the traffic network performance review for the M8 and M5 toll roads, given its release was promised one year ago.
4. That the NSW Government implement a scheme to ensure that buses are not required to pay tolls when carrying passengers.
5. That the NSW Government implement Recommendation 3, relating to transparency for tolling contracts, of the 2017 Upper House inquiry into road tolling in New South Wales without further delay.
6. That, when a network approach to toll road pricing is considered by the review, the NSW Government should:
 - a. consider the introduction of toll caps and appropriate flag falls, rather than just distance based tolling
 - b. review the application of toll escalation rates which often include both a minimum four per cent toll increase and inflation, whichever is higher, rather than take account of real wages growth
 - c. review toll relief and cashback schemes to ensure that toll relief is going to the people who most need it based on their ability to pay as well as the existence of public transport alternatives.
7. That the NSW Government considers concerns raised by the Australian Competition and Consumer Commission throughout this inquiry and adopts the Commission's recommendations:
 - a. to compel toll road operators to publicly release traffic data
 - b. for governments to allow sufficient time in their tendering processes for bidders other than Transurban to model traffic forecasts and other relevant commercial considerations.
8. That, as a priority, the NSW Government:
 - a. reduce administration fees for trips on toll roads without a payment arrangement in place to \$1.10 for the first notice and \$2.20 for a second notice
 - b. ensures Transurban implements the reduced administration fees
 - c. make it compulsory for all toll road operators to move to aggregated/consolidated toll notices, as has occurred in Queensland.

9. That the NSW Government mandate the adoption of an industry-wide Code of Practice for all toll road operators which includes a framework for managing debt for vulnerable customers, consistent with the codes and guidelines used in other sectors.
10. That the NSW Government establish an independent Tolling Customer Ombudsman with a legislative basis similar to, for example, the Energy and Water Ombudsman NSW, and that:
 - a. the ombudsman has the power to resolve disputes against all toll road operators
 - b. all private toll road operators be required to contribute funding to enable the delivery of a full-time, professional service
 - c. the ombudsman has the power to enforce the Codes of Practice foreshadowed at Recommendation 9, including a framework for responding to debt incurred by consumers struggling with financial hardship, mental illness, and domestic and family violence.

Toll Road Pricing and Relief Reform Review, December 2022

This review identified that further phases of work were necessary to assess policy options before recommendations could be made to government. A summary of work completed for the Toll Road Pricing and Relief Reform Review was published in June 2023.

Appendix B: Transport Modelling

Transport modelling and forecasting overview

Transport models serve as tools for stakeholders in the evaluation of proposed infrastructure projects and the assessment of policies that influence overall mobility.

Transport models are computational representations of transport systems and aim to capture the dynamic interactions among various elements such as the road and public transport networks, land use systems, and the derived travel demand. Utilising mathematical algorithms and data analytics, these models simulate real-world scenarios, enabling decision-makers to understand, predict, and optimise transport outcomes through a systematic analysis.

A widely adopted framework in transport modelling is ‘the classical’ or ‘four-step’ modelling approach, which breaks down the forecasting of travel behaviour into four distinct elements as illustrated in Figure B.1.

Figure B.1: 4 Step Modelling Approach

Model Step	Question it aims to resolve	Step purpose
Trip generation	How many trips?	Estimates the total number of trips originating and attracted to different zones.
Trip distribution	Where will these trips go?	Determines the distribution of trips between origin-destination zones.
Mode choice	What modes will they use?	Evaluates the transport modes chosen by travellers.
Traffic assignment	What routes will they take?	Allocates trips to specific routes within the transport system.

Source: Transport for NSW

When modelling following this approach, various performance metrics can be extracted from the transport models to enable measuring the effectiveness of the assessed options. These metrics include travel time, congestion levels, mode share, and revenue generation.

A significant application of transport models is in the assessment of toll road schemes. For these kinds of projects, transport models measure the impact of tolls on travel behaviour, congestion levels, revenue, and the overall system performance.

Specifically, in the assessment of various toll road scenarios, transport models facilitate the analysis of effects across the entire network and within specific segments of the transport system. Figure B.2 provides examples of metrics commonly used in these assessments.

Figure B.2: Network statistics and metrics

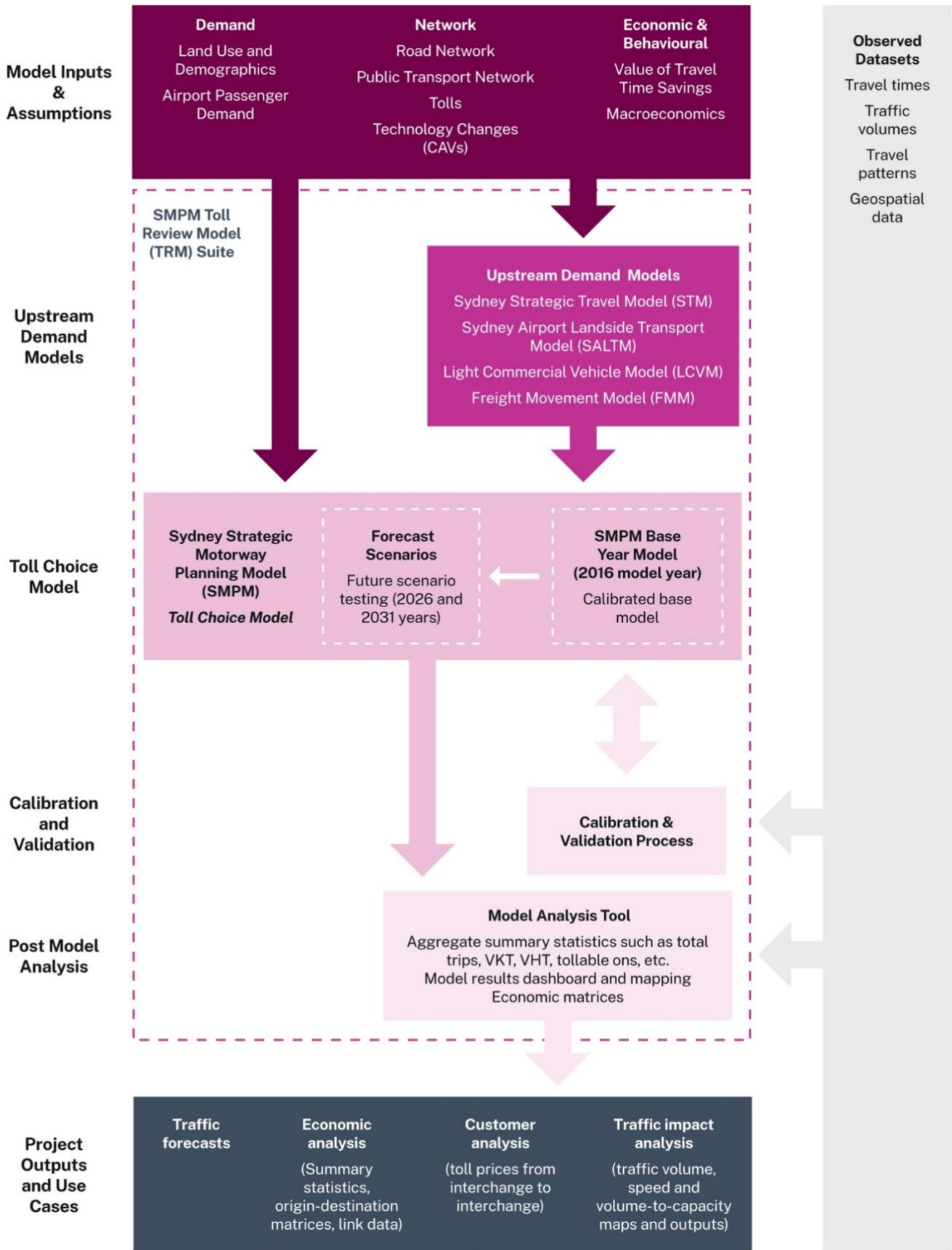
Network-wide statistics	Detailed Network Metrics
<ul style="list-style-type: none"> • Average toll prices. • Forecasts of toll revenue. • Vehicle Kilometres Travelled (VKT). • Vehicle Hours Travelled (VHT). • Average speed. 	<ul style="list-style-type: none"> • Volume to Capacity (V/C) ratio for the full road network and motorway network, categorised by motorway, vehicle type, and time period. • Traffic volumes. • Toll prices for every origin-destination pair (at the motorway interchange level).

Source: Transport for NSW

The Toll Road Pricing Review modelling forecasting methodology.

For the Toll Road Pricing Review, the traffic forecasting methodology adopted is based on the traditional four-step modelling approach. The overall architecture is schematically described in Figure B.3, and each component is outlined below.

Figure B.3: Transport Modelling Methodology



Source: Independent Toll Review

The transport models utilised in this process are maintained by Transport for NSW. These models form the basis for forecasting various toll price scenarios, including a scenario that maintains the current toll scheme arrangement or status quo.

Model inputs and assumptions

The key model inputs and assumptions used in this process are summarised in Figure B.4.

Figure B.4: Model and input assumptions

Category	Overview of input items
Demand	<ul style="list-style-type: none"> Land use and demographics. Sydney's land use and demographics sets the size of the travel market and, collectively, influence the overall transport demand. Employment. The spatial distribution of jobs, when considered alongside population data, significantly shapes the travel patterns across the city for both commercial and non-commercial trips.
Network	<ul style="list-style-type: none"> Network, PT services and costs. The physical transport network infrastructure and services, as well as monetary costs (e.g. tolls, parking and PT fares) influence travellers' options to travel. For future years, road and PT infrastructure changes are considered to reflect the configuration and timing planned.
Toll Cost	<ul style="list-style-type: none"> Toll escalations. Many of the city's toll roads currently have a toll escalation regime linked to CPI as a measure of inflation. These toll rises are included in the toll price levels.
Economic & Behavioural	<ul style="list-style-type: none"> Value of Travel Time Savings (VTTS). When choosing to use a tolled route, motorists are trading-off between time and costs. This trade reflects the value users place on saving travel time. In the Toll Choice Model, this behaviour is considered by incorporating assumed VTTS per road user type based on survey data. Affordability. Household wealth levels change over time and, when considered alongside toll escalation, influence the relative affordability of using toll roads. The Average Weekly Earnings (AWE) is used as a metric for the household wealth levels.
Post model calculation factors	<ul style="list-style-type: none"> Annualisation factors. The Toll Choice Model represents steady-state traffic conditions for an average school-term weekday; therefore, calculations are required to produce annualised traffic and revenue forecasts for analysis. Ramp-up profiles. As the transport network expands with the opening of large transport projects, it is typical for travel demand to experience a gradual increase, rather than an immediate or sudden surge. Ramp-up profiles are employed to account for this incremental growth phenomenon.

Source: Transport for NSW

Upstream demand models

The Toll Road Review modelling framework splits the four-step modelling approach between Upstream Demand Models and a Toll Choice Model. The Upstream Demand Models undertake the first three steps: trip generation, distribution, and mode choice.

Figure B.5: Upstream Demand Models

Demand Model	Function in the project
Sydney Strategic Travel Model (STM)	Informs travel patterns in the Sydney GMA, including mode choice between car to PT, related to congestion and network investments. The STM serves as the primary source of the car demand.
Sydney Freight Movement Model (FMM)	Forecasts Heavy Vehicle Class (HV) trips based on land use, demographics, macroeconomics and supply chain elements (construction, motor vehicles, food, non-food, fuel, waste, horticulture, among others).
Sydney Airports Land Transport Model (SALTM)	Forecasts car trips (including taxis) and public transport trips to and from Sydney's airports - the existing Kingsford Smith Airport and the future Western Sydney Airport.
Sydney Light Commercial Vehicle Movement Model (LCVM)	Forecasts Light Commercial Vehicle (LCV) trips. Commercial trips are a key driver of Sydney's toll road revenue with the emergence of key growth centres in Western Sydney.

Source: Transport for NSW

The outcome of the Upstream Demand Models is the forecast growth in demand for cars, LCVs and HVs for the adopted land use and transport network assumptions. These models are also an essential component to conduct multi-modal network analysis.

Toll Choice Model

As the fourth modelling step in the four-step modelling approach, the Toll Choice Model undertakes the network assignment of demand to the road network. The multiple demand segments are informed by the Upstream Demand Models.

The Toll Choice Model base year is calibrated to observed travel patterns based on observed data sets. For future year forecasts, the Toll Choice Model operates as a pivot model, with the future demands being pivoted from the calibrated base year demands.

The Toll Choice Model also uses four time periods on an average school day to capture the differing amounts of traffic and congestion in different parts of the day.

Outputs from the Toll Choice Model are then interpreted and processed to produce various traffic forecasts required for the project analysis.

Calibration and validation

Calibration and validation are critical in traffic modelling to instil confidence in its usability. During the calibration process, model parameters are adjusted to align prediction with real-world data, ensuring accuracy. On the other hand, validation verifies the model's ability to reproduce various aspects of travel behaviour accurately. Together, these processes determine the transport mode's degree of 'fit-for-purpose'.⁸⁴

⁸⁴ ATAP. (2016)., Australian Transport Assessment and Planning Guidelines, T1 Travel Demand Modelling, Transport and Infrastructure Council. [T1 Travel Demand Modelling.pdf \(atap.gov.au\)](#).

The calibration of the Toll Choice Model involved traffic counts collected in around 1,000 locations (by direction) during each modelled time-period and for each vehicle type. The model was validated against multiple corridor travel times and reported travel patterns in the Household Travel Survey (HTS) and other traffic surveys. The model has been calibrated and validated to reflect 2016 traffic conditions.

Post model calculations

The model ecosystem allows for the extraction of network-wide statistics and detailed link-level outputs. This includes data such as traffic volume and speed categorised by time period and vehicle class, covering both Sydney's motorway and non-motorway road network. The extensive output data is then processed and summarised to meet the project requirements. Post-processing calculations are carried out to generate annualised forecast for each year. This involves interpolation, extrapolation, and consideration of ramp-up profiles.

Appendix C: Upside sharing arrangements under current concessions

Private toll road	Mechanisms
Hills M2	<p>Base Rent</p> <p>The Hills Motorway Company Ltd (THML) is to pay Transport for NSW (Transport for NSW) an annual Base Rent of \$7 million per year adjusted annually in line with CPI starting from 1997. Until such time THML has received an amount sufficient to give the investors in THML a real, after-tax return, of at least 12.25 per cent per annum (the Equity Return Date), THML may pay the annual Base Rent in the form of a non-interest-bearing promissory note. Post the Equity Return Date, Base Rent is paid in the form of cash.</p> <p>Post the Equity Return Date, THMP must make cash payments to Transport for NSW amounting to 30 per cent of their Surplus Cash net their Base Rent payments. These payments allow THMP to start meeting their obligations under previously issued promissory notes.</p> <p>Incentive Rent</p> <p>After all promissory notes have been paid in full to Transport for NSW, THMP must make annual payments of Incentive Rent to Transport for NSW amounting to 20 per cent of their surplus cash net their Base Rent payments.</p>
Westlink M7	<p>Revenue Upside Sharing</p> <p>The Revenue to be paid to Transport for NSW is the aggregate of:</p> <ol style="list-style-type: none"> a. 0% of that amount of Actual Revenue that is greater than 100% and less than or equal to 110% of Incremental Base Revenue, b. 30% of that amount of Actual Revenue that is greater than 110% and less than or equal to 115% of Incremental Base Revenue, c. 50% of that amount of Actual Revenue that is greater than 115% of Incremental Base Revenue. <p>However, this amount is reduced if NorthConnex Revenue is less than the NorthConnex Base Revenue.</p>
NorthConnex	<p>Revenue Upside Sharing</p> <p>If the Actual Toll Revenue is greater than an agreed per centage of the Base Toll Revenue in the Base Case Financial Model, Transport for NSW will be paid an agreed per centage difference between the Actual Toll Revenue and Base Toll Revenue.</p> <p>NorthConnex revenue impacts the revenue sharing clauses in Westlink M7.</p>
Lane Cove Tunnel, Cross City Tunnel	<p>Revenue Upside Sharing</p> <p>Revenue share is the aggregate of:</p>

Private toll road	Mechanisms
	<ol style="list-style-type: none"> 1. 0% of that amount of Actual Revenue that is greater than 100% and less than or equal to 110% of Base Revenue, 2. 10% of that amount of Actual Revenue that is greater than 110% and less than or equal to 120% of Base Revenue, 3. 20% of that amount of Actual Revenue that is greater than 120% and less than or equal to 130% of Base Revenue, 4. 30% of that amount of Actual Revenue that is greater than 130% and less than or equal to 140% of Base Revenue, 5. 40% of that amount of Actual Revenue that is greater than 140% and less than or equal to 150% of Base Revenue, 6. 50% of that amount of Actual Revenue that is greater than 150% of Base Revenue,
<p>WestConnex (three concessions) (further details of revenue upside sharing are not publicly available)</p>	<p>Revenue upside sharing</p> <p>The Motorway leases contain arrangements for WestConnex to share upside in actual revenues compared with forecasts with Transport for NSW.</p>
<p>M5 South-West</p>	<p>Profit Share</p> <p>Once the M5 South-West debt is fully repaid and Interlink Roads Pty Ltd has reached a specified after tax financial return, Interlink Roads must pay Transport for NSW a portion of the after tax accounting profit. This arrangement is only in place if Transport for NSW has not duplicated the M5E or connected a new arterial road or tunnel to the eastern end of the M5W motorway.</p> <p>Call Option</p> <p>Once the M5 South-West debt is fully repaid and Interlink Roads Pty Ltd has reached an expected financial return, Transport for NSW has the right to purchase shares in Interlink or purchase Interlink.</p> <p>M5 East Duplication</p> <p>In the event a duplication of the M5 East or new connection of arterial road or tunnel to the eastern end of the M5W motorway, Transport for NSW is entitled to a share of Interlink Road Pty Ltd's revenue if revenue during a financial year exceeds a specified percentage of modelled revenue.</p>
<p>Eastern Distributor</p>	<p>Concession Fees</p> <p>Airport Motorway Limited (AML) pays Transport for NSW Concession Fees of at least \$415.2 million over the concession period.</p> <p>Most of the concession fees may be in the form of promissory notes with a future payment date. At least \$10.2 million of the Concession Fees must be paid in cash.</p>

Private toll road	Mechanisms
	<p>When AML has received an amount sufficient to give the investors in AML a real after-tax internal rate of return of at least 10 per cent per annum; this is deemed to be the equity return date. AML must make payment to Transport for NSW of 35 per cent of surplus cash. This payment would be used to satisfy the payment obligations of the promissory notes.</p> <p>Additional Concession Fee</p> <p>There is an additional Concession Fee due to Transport for NSW of which 10 per cent of surplus cash for each financial year after all the promissory notes have been paid in full. This additional Concession Fee must be paid in cash.</p>

Appendix D: Toll Review Survey

Introduction

The level and setting of toll prices emerged as the most prominent theme in the Review's public consultation process that ran in July 2023 (Independent Toll Review 2023b). Of particular concern was the high cost of tolls, the regularity of toll increases, the negative impact of high costs on user behaviour, and inequitable social outcomes arising from the overall toll pricing regime.

As the public hearings suggest, the rising costs are felt by many drivers, but this is particularly acute for those who have few practical alternatives, such as public transport or untolled roads. For these drivers, toll roads are a necessity to get to work, places of study, or to visit family and friends. In an environment where many household finances have become increasingly strained, household incomes for these drivers are further eroded through excessive toll charges, with limited viable options but to pay high tolls.

The Review wanted to hear from a large and fully representative sample of drivers in Sydney about their experiences and perceptions of using toll roads to further inform our recommendations. The user perspective often seems to be downplayed by discussions of the operation of toll roads, but to us it is paramount. NSW Treasury undertook the Toll Review Survey for the Review in October 2023 with the aim to:

- understand the financial burden of toll expenses on households
- assess how households respond to the financial burden of tolls
- analyse how the responses to the elements above vary across different geographic areas in Sydney.

Methodology

NSW Treasury commissioned Australian Online Research (AOR) to design and conduct the Survey. To take part in the survey, respondents had to live in Sydney, be over the age of 18, and hold a valid driver's licence.

To understand the financial burden of tolls on Sydney drivers, it is important to know the usage patterns and perceptions of those who use toll roads. However, it is possible that high prices and other concerns may cause some to avoid toll roads altogether. As such, it is also necessary to get the perspectives of drivers who do not use toll roads to get a holistic viewpoint of the current landscape. For this reason, the survey collected over 1,500 responses from drivers across Greater Sydney, including both users and non-users of toll roads. We gathered insights on households' use of toll roads (if at all), including how often they drive on toll roads, weekly toll expenditure, perceptions of prices, and their impact on transport choices. The responses were collected across a representative sample of households across Greater Sydney, to account for any geographical differences.

Prior to launching the survey, we conducted a pilot survey with 111 households across Greater Sydney in early October 2023 to gauge participants' ability to interpret and respond to the survey questions. The use of a pilot survey is standard practice in robust survey projects as it allows researchers the ability to adapt and refine the main survey based on preliminary findings.

The survey ran in mid-October 2023 and was conducted online. AOR gave respondents a small points-based incentive for the time they took to participate in the survey.

Our final survey asked five different categories of questions:

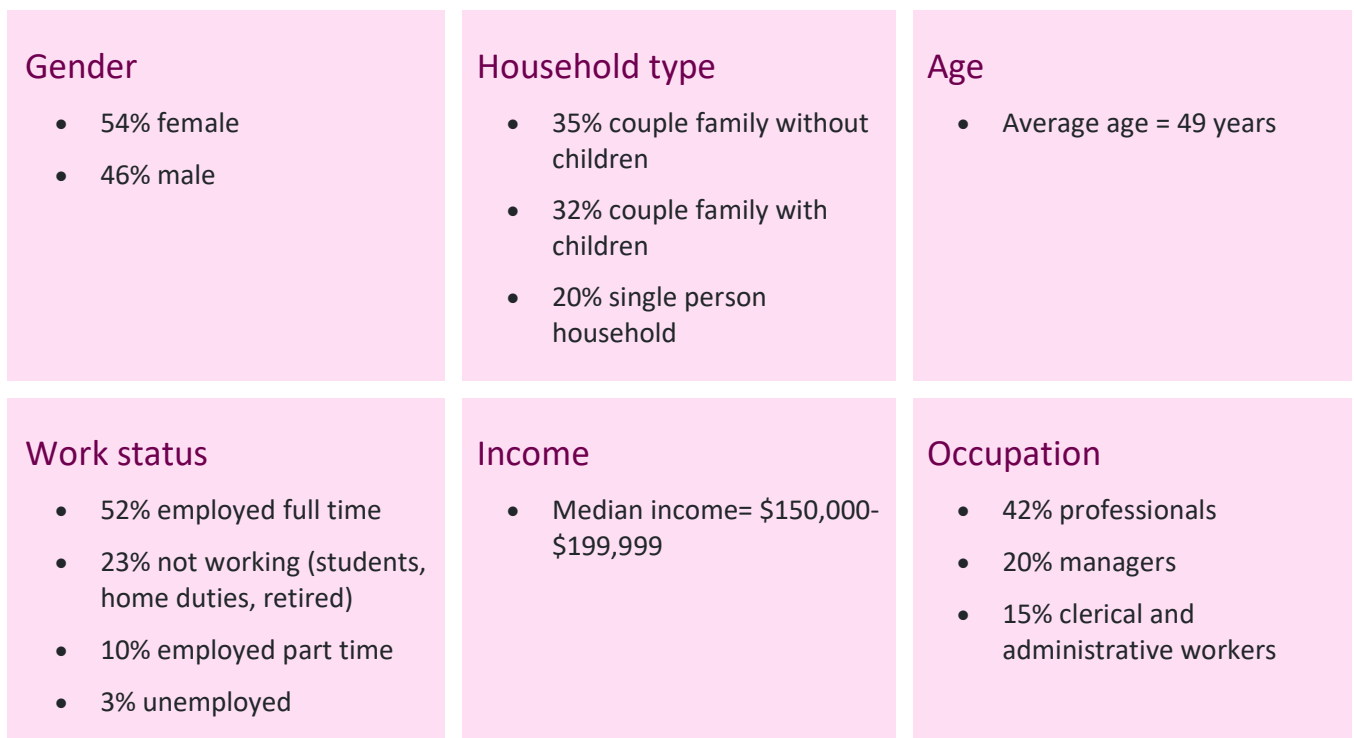
- demographic questions, including where they lived, their gender, their household type, their work status, their household income, and their occupation
- toll road usage questions, including how often they drive on toll roads, how much they spend on toll costs, which toll roads they use, and why they do/do not use toll roads
- perception questions, including how they feel about the cost and financial burden of toll roads
- rebate questions, including whether they are aware of toll-related rebates and whether they have taken them up
- sensitivity questions, including how sensitive they are to increases or decreases in toll road prices for toll roads they use frequently, occasionally, and one-off.

Who we surveyed

The final survey captured responses of 1,544 drivers in the Greater Sydney area. Our sample comprised of drivers from a wide variety of sociodemographic backgrounds (see Figure D.1 and Figure D.2) and achieved a representative spread of responses across Statistical Areas Level 3 (SA3)⁸⁵ in Greater Sydney.

By hearing from the experiences and perceptions of drivers, we are better able to understand toll road usage patterns and gain insights into the impact of toll road costs on Greater Sydney households.

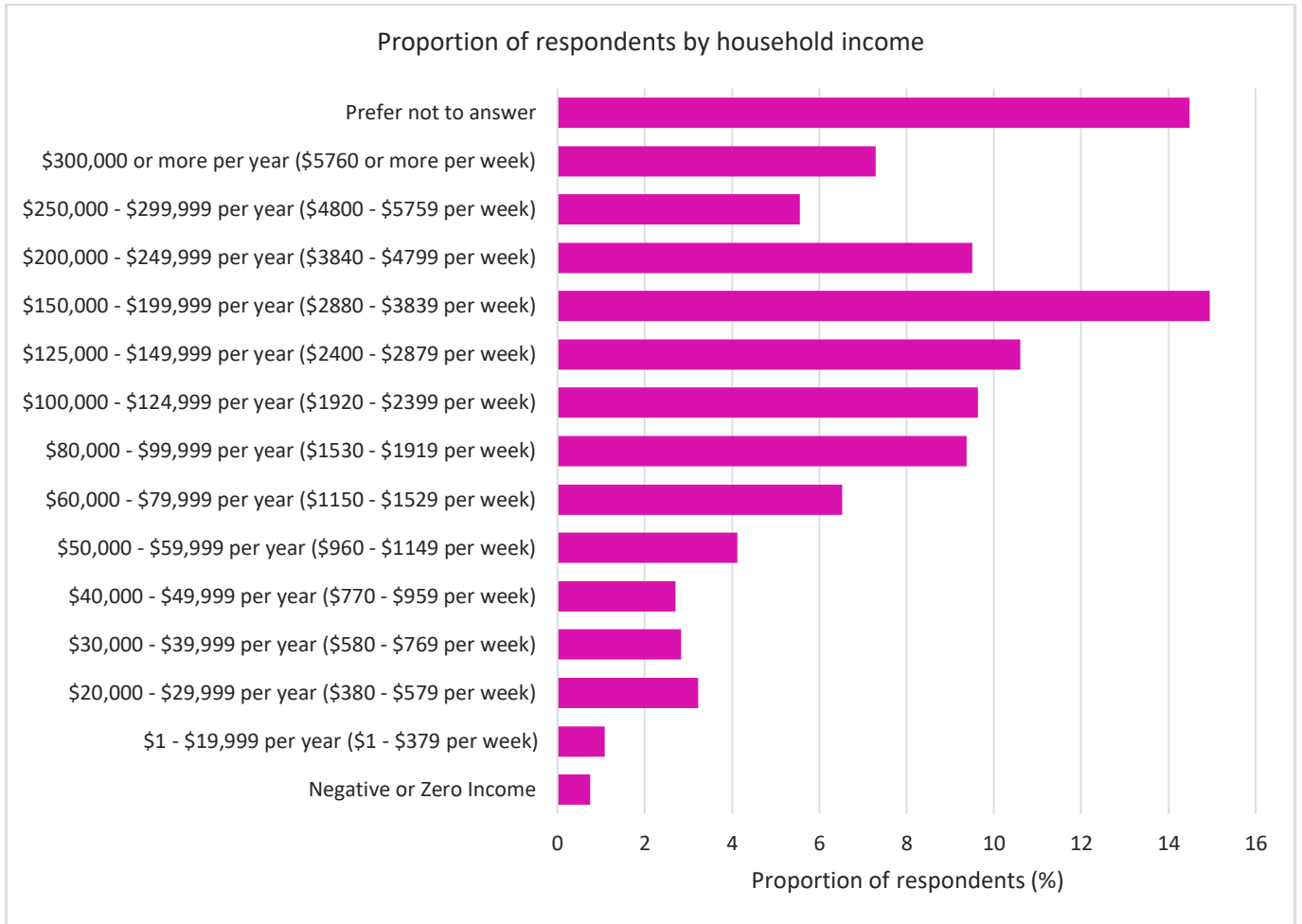
Figure D.1: We surveyed a representative sample of drivers in Sydney



Source: Independent Toll Review Survey 2023

⁸⁵ SA3s are geographical areas defined by the Australian Bureau of Statistics (ABS 2016)

Figure D.2: We surveyed respondents with a range of household incomes



Note: Question was asked to all participants (N = 1,544)

Source: Independent Toll Review Survey 2023

What we found

Our survey found that the vast majority of Sydney drivers perceive toll road prices to be too high and unfair. Many also believe that the financial burden of toll costs has grown over time.

Drivers are also responsive to changes in toll prices, adjusting their travel choices to avoid tolls where possible. While most drivers do use toll roads at least occasionally, we found that for some drivers the rising prices has led them to avoid using toll roads altogether.

We also found that some toll road users only drive on toll roads because they have no other feasible transport options. High toll fees are particularly concerning for these drivers as they are unable to mitigate the growing financial burden toll roads impose.

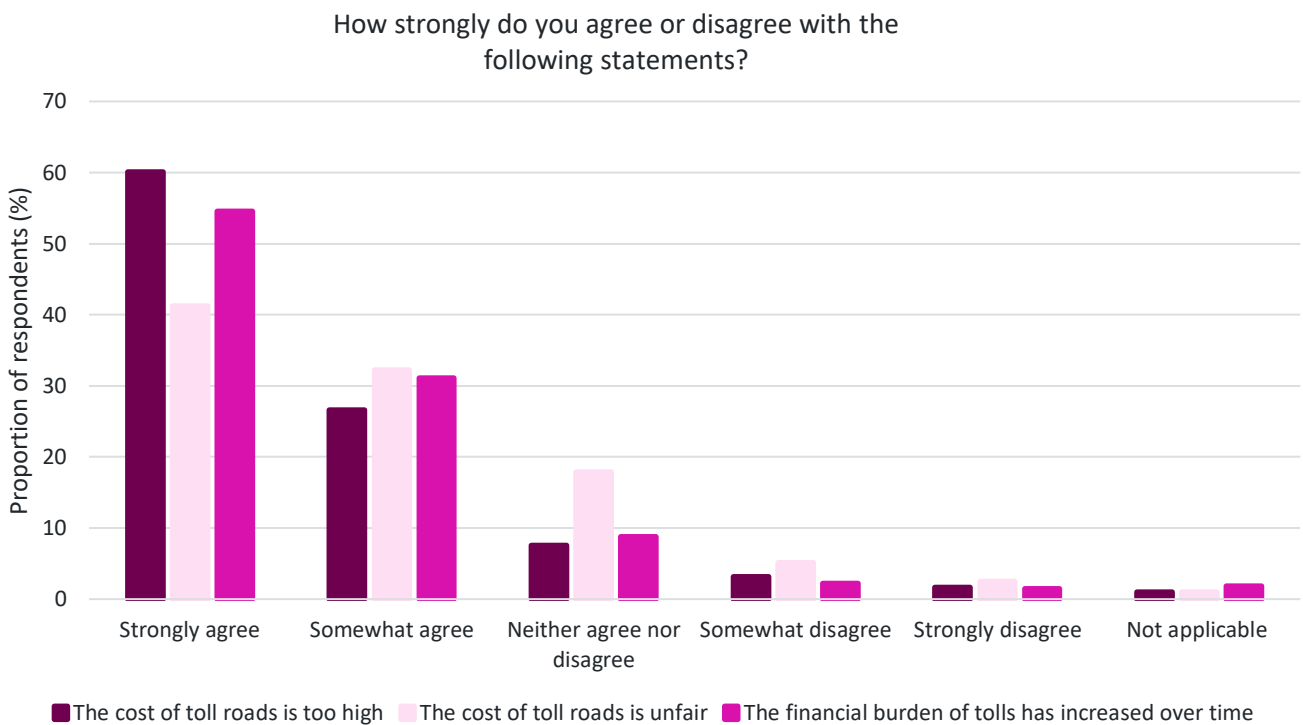
From mapping the survey responses, we see that the bulk of the burden falls most heavily on those in Sydney’s West, where drivers report higher usage of toll roads as well as higher weekly toll expenses.

Most drivers think toll costs are too high and unfair

We asked survey participants to what extent they agreed that toll costs are too high, that toll costs are unfair, and that the financial burden of toll costs have grown over time.

The vast majority of drivers (87 per cent) strongly or somewhat agreed that toll roads are too expensive, compared to 5 per cent that strongly or somewhat disagreed (see Figure D.3). Similar results were found for drivers’ perception of the growing financial burden of toll roads, with 86 per cent agreeing that it has increased over time. Respondents also overwhelmingly think that toll costs are unfair, with 73 per cent strongly or somewhat agreeing.

Figure D.3: Most drivers think toll costs are too high and unfair



Note: Question was asked to all participants (N = 1,544)

Source: Independent Toll Review Survey 2023

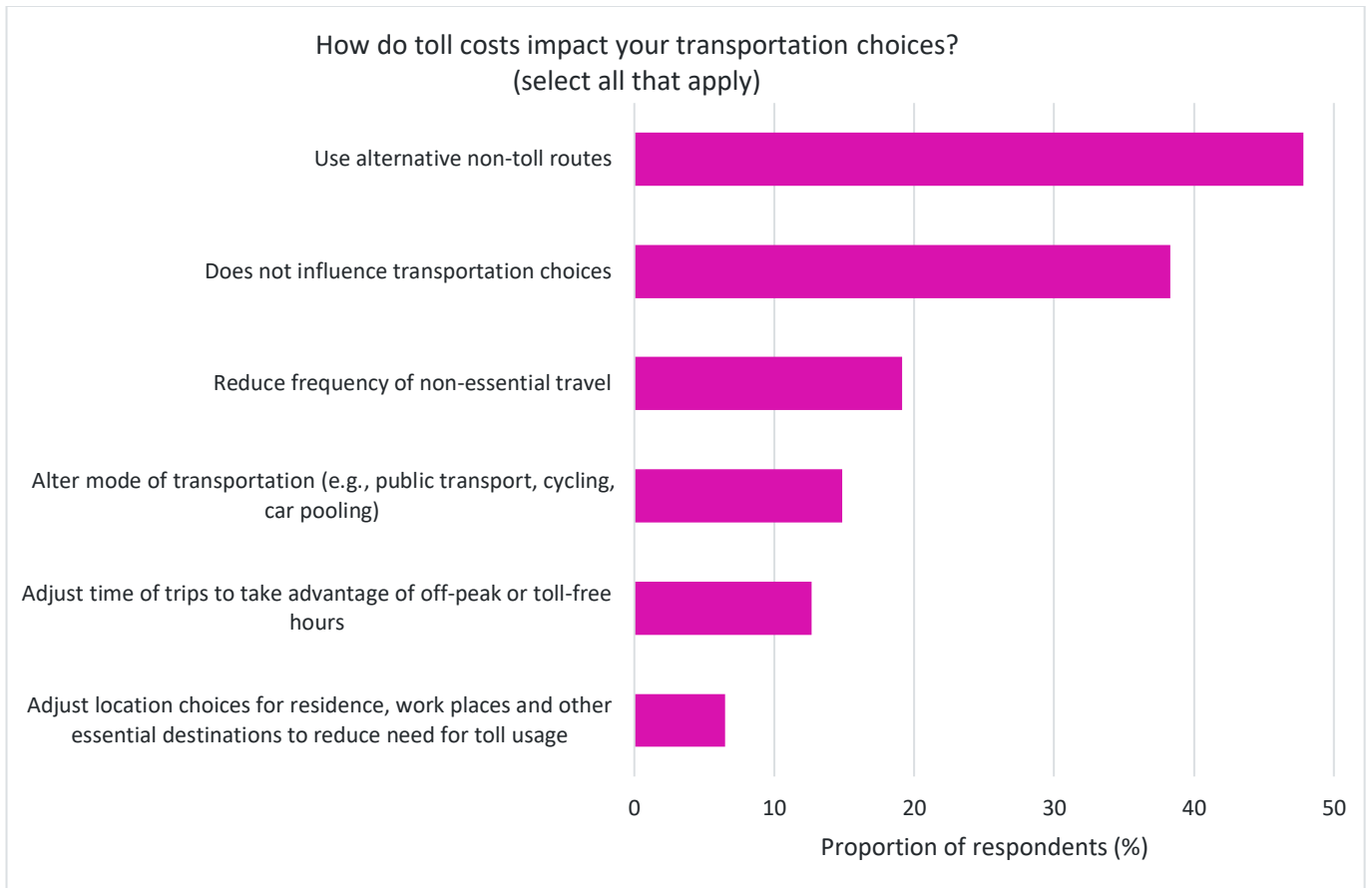
These results indicate that Sydney drivers are experiencing an increasing burden of toll costs, suggesting that price rises may be excessive and that current toll relief measures are not effective in addressing these concerns.

High toll costs are distorting transportation decisions

Most toll road users take alternative non-toll routes to reduce toll usage

Most toll road users adjust their behaviour in response to rising toll prices. The main way users adapt is by using alternative non-toll routes, with around half selecting this option (see Figure D.4).

Figure D.4: Most toll road users take alternative non-toll routes to reduce toll usage



Note: Question was asked to all participants (N = 1,544)

Source: Independent Toll Review Survey 2023

Just over one third of toll road users in Sydney are not responsive to price changes. That is, changes in toll prices do not affect their transportation choices. This may be the case for higher income earners, for whom toll expenses comprise a smaller fraction of their household income, and who ultimately value the convenience and time savings of toll roads.

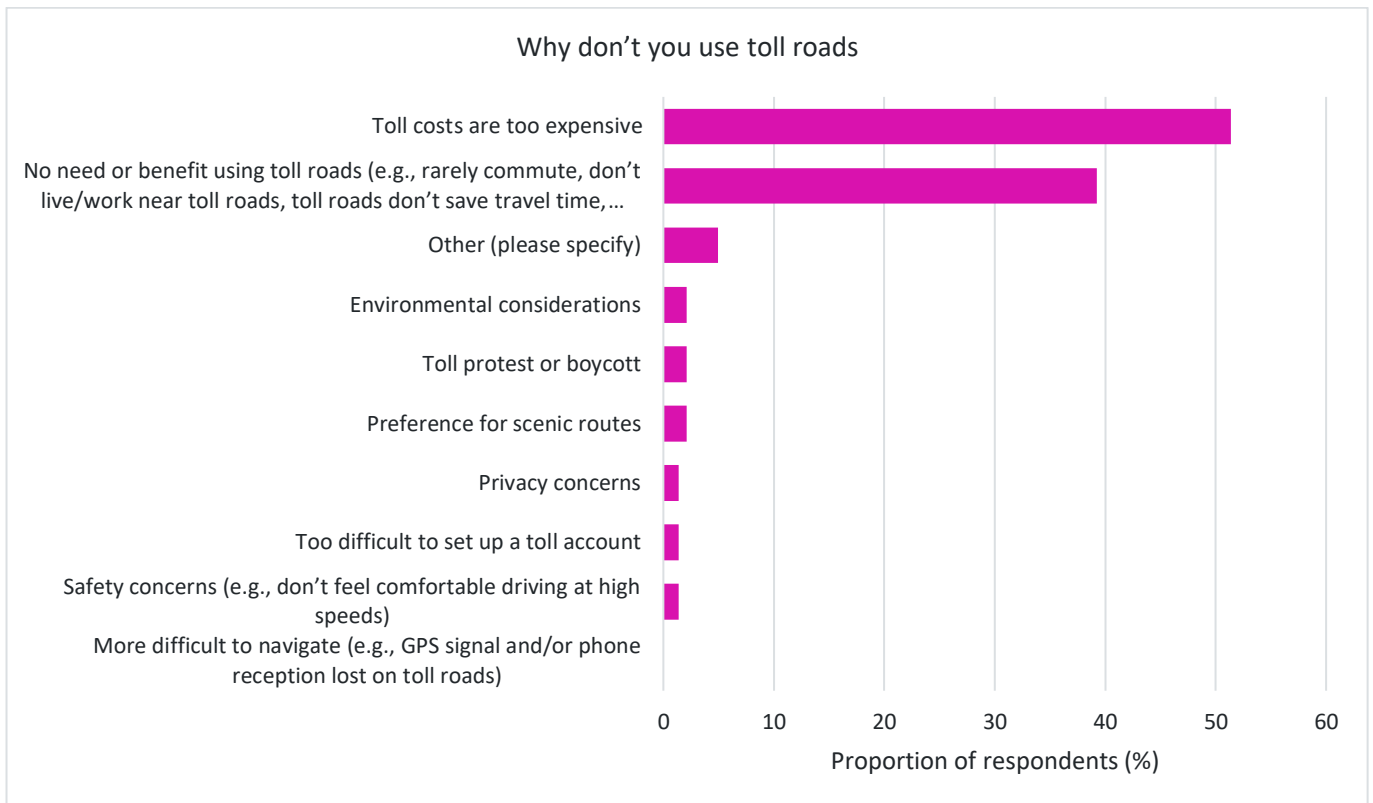
However, this could also capture those toll road users who do not have any other feasible transport options. Additionally, some of the responses by households to toll prices could present a structural challenge for the economy. Though in the minority, we see some drivers shift their location of residence, work, and other essential destinations as result of rising toll prices. Rising toll costs may exacerbate labour market challenges if they act as a barrier for workers to accept jobs in particular locations.

High toll costs cause some drivers to avoid toll roads altogether

We asked respondents to tell us who pays for their tolls to understand what influence this has on toll road usage. Respondents were also given the option to nominate that they don't incur any toll expenses, that is, that they do not use toll roads at all. We found that 9 per cent of drivers do not use toll roads.

We wanted to understand what factors influenced the decision of non-users to avoid toll roads and found that the price of tolls is the primary reason (see Figure D.5). Over 50 per cent of non-users said they do not use toll roads because they are too expensive. This suggests that high prices are leading some drivers to avoid toll roads altogether.

Figure D.5: High toll costs cause some drivers to avoid toll roads altogether



Note: Question was only asked to participants who do not incur any toll expenses (N = 140)

Source: Independent Toll Review Survey 2023

While we expect people to respond to toll prices by changing their driving behaviour, this is not always desirable from an economic productivity perspective, for example, if it is creating transport bottlenecks elsewhere in the road network and impacting wellbeing through greater travel times.

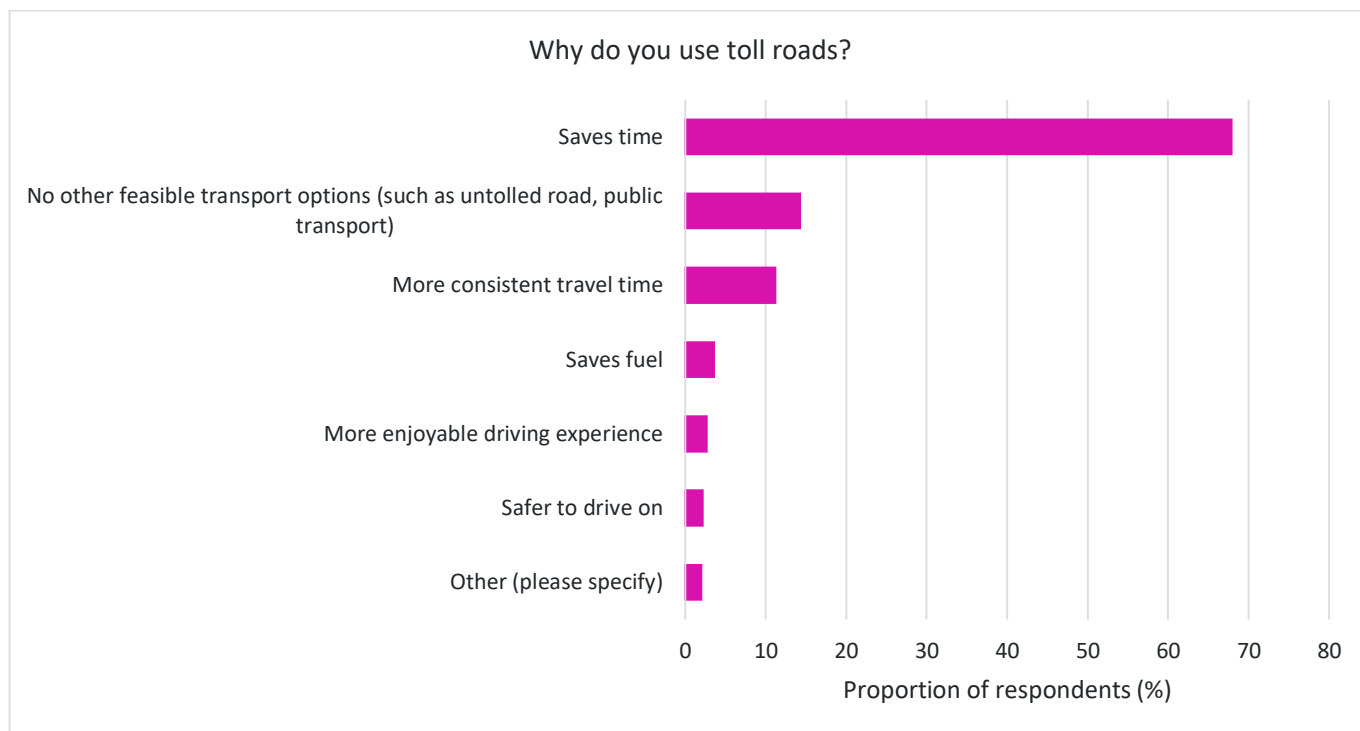
Nearly 40 per cent of non-users indicated that they avoid toll roads because they do not need to use them or see no benefit in using them. These respondents may rarely commute, live and work in areas with no toll roads, or instead choose to use public transport or free alternative routes. Further, the increase in remote working arrangements has likely reduced the necessity to use toll roads for some commuters. It may also be that these drivers do not see toll roads as providing enough value. For instance, the time saving is insufficient to persuade them to use toll roads or they do not live close enough to a toll road to make it worthwhile.

Some drivers do not have any other feasible transport alternatives to toll roads

As outlined in the Terms of Reference for the Independent Toll Review, there is particular interest in the cost-of-living impacts, fairness, and equity for NSW toll roads users with no viable public transport alternatives (NSW Treasury 2023c).

Among toll road users, 14 per cent reported that they use toll roads because they have no other feasible transport alternatives (see Figure D.6). This is particularly problematic as these users report that they have no choice but to pay toll charges, even as prices rise, bringing into focus issues of fairness and equity.

Figure D.6: Some drivers do not have any other feasible transport alternatives to toll roads



Note: Question was only asked to participants who incur toll expenses (N = 1,404)

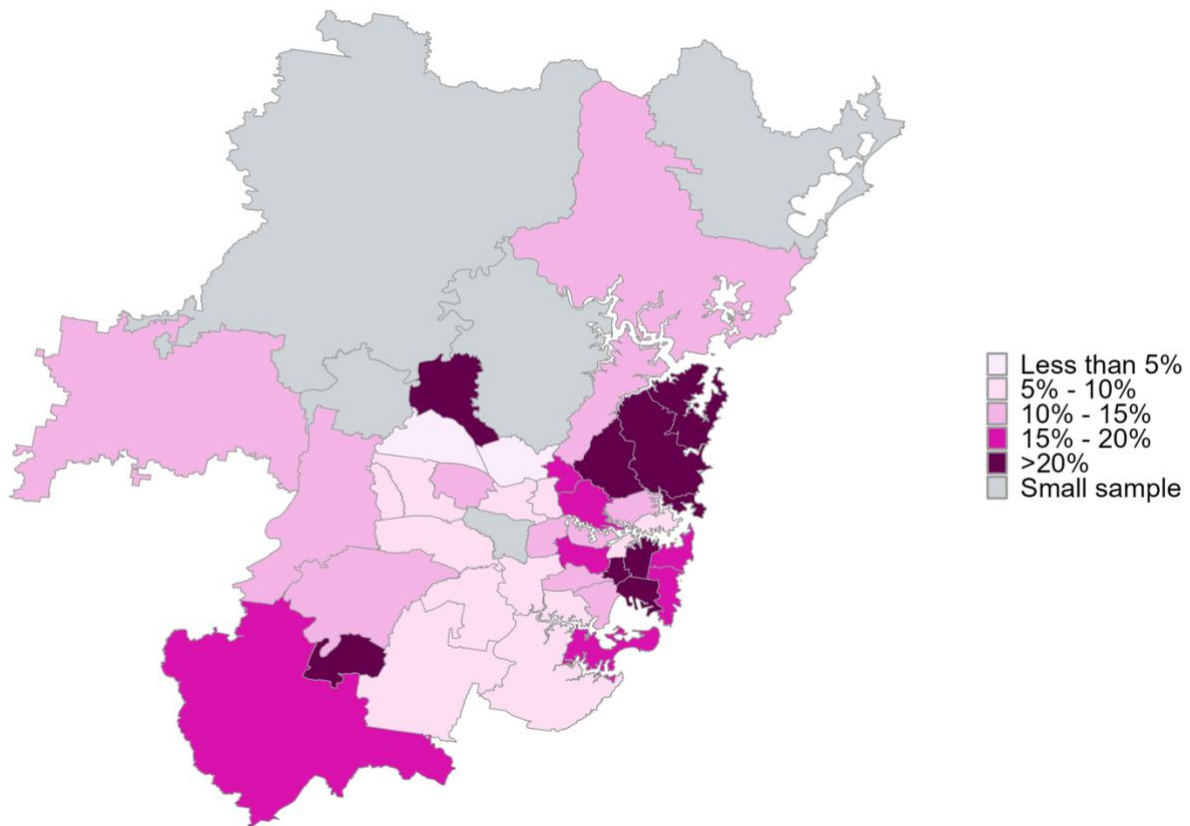
Source: Independent Toll Review Survey 2023

As to be expected, we see that most drivers travel on toll roads due to the time savings, while others like the consistency and reliability of travel time, as well as saving on fuel.

These toll road users are most concentrated in Sydney's Northern Beaches, with pockets also visible in the City and Inner South (see Figure D.7). Of particular concern, however, is the Rouse Hill-McGraths Hill region in Sydney's North-West as this also overlaps with relatively high usage and relatively high weekly costs. The combination of these factors implies that a sizeable proportion of road toll users in North-Western Sydney spend more on tolls due to a lack of options, rather than convenience or personal preference.

Figure D.7: Drivers with no feasible transport alternatives are most concentrated in the Northern Beaches

No feasible alternatives main reason for using tolls, % toll road users by SA3

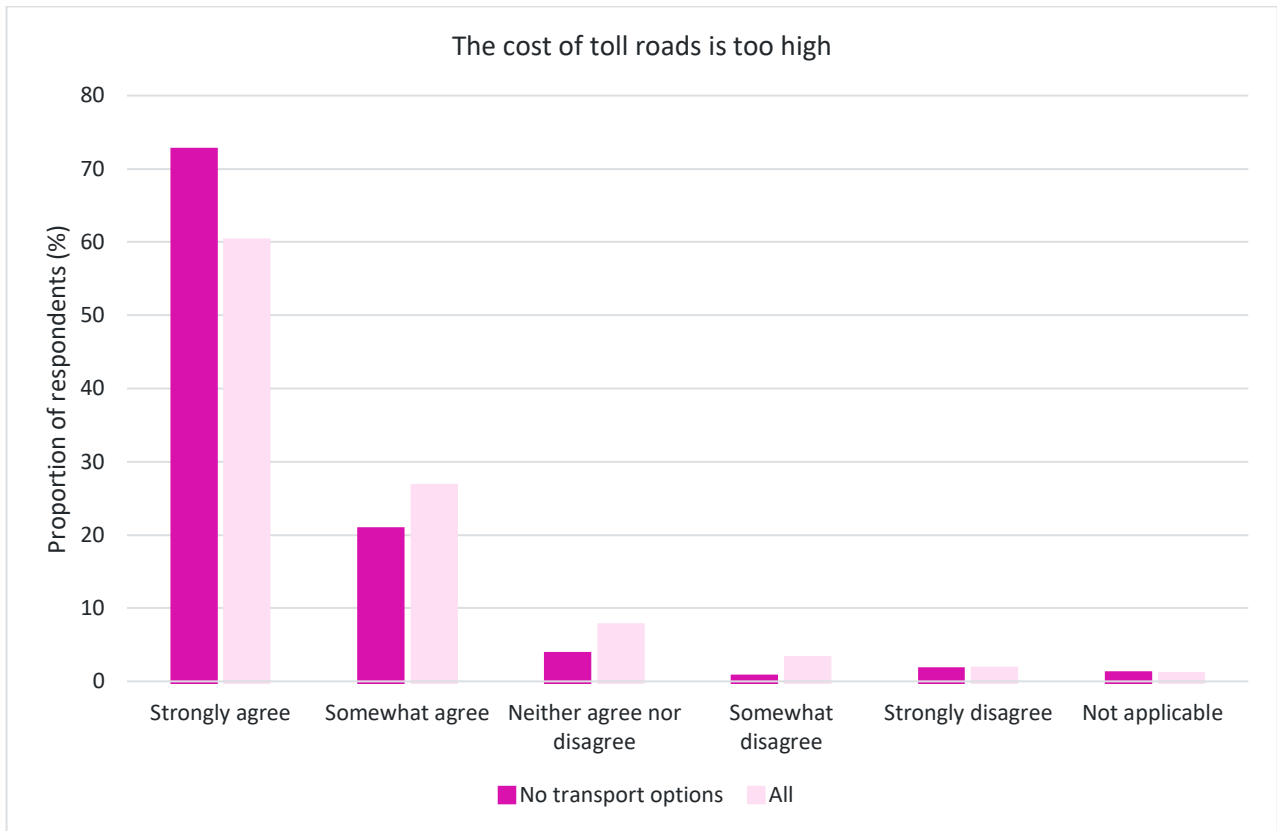


Note: Heatmap only includes respondents who incur toll expenses and report having no other feasible transport alternatives (N = 193)

Source: Independent Toll Review Survey 2023

Further, those who use toll roads because they have no feasible alternatives hold stronger beliefs that costs are too high. These drivers are more likely to strongly agree that toll costs are too high compared to the overall sample (73 per cent and 60 per cent, respectively) (see Figure D.8). This suggests that drivers who face no alternative transport options would prefer toll roads to be cheaper or would use other feasible public transport options if they were made available.

Figure D.8: Drivers with no feasible transport alternatives are more likely to agree that the cost of toll roads is too high



Note: Question was asked to all participants (N = 1,544)

Source: Independent Toll Review Survey 2023

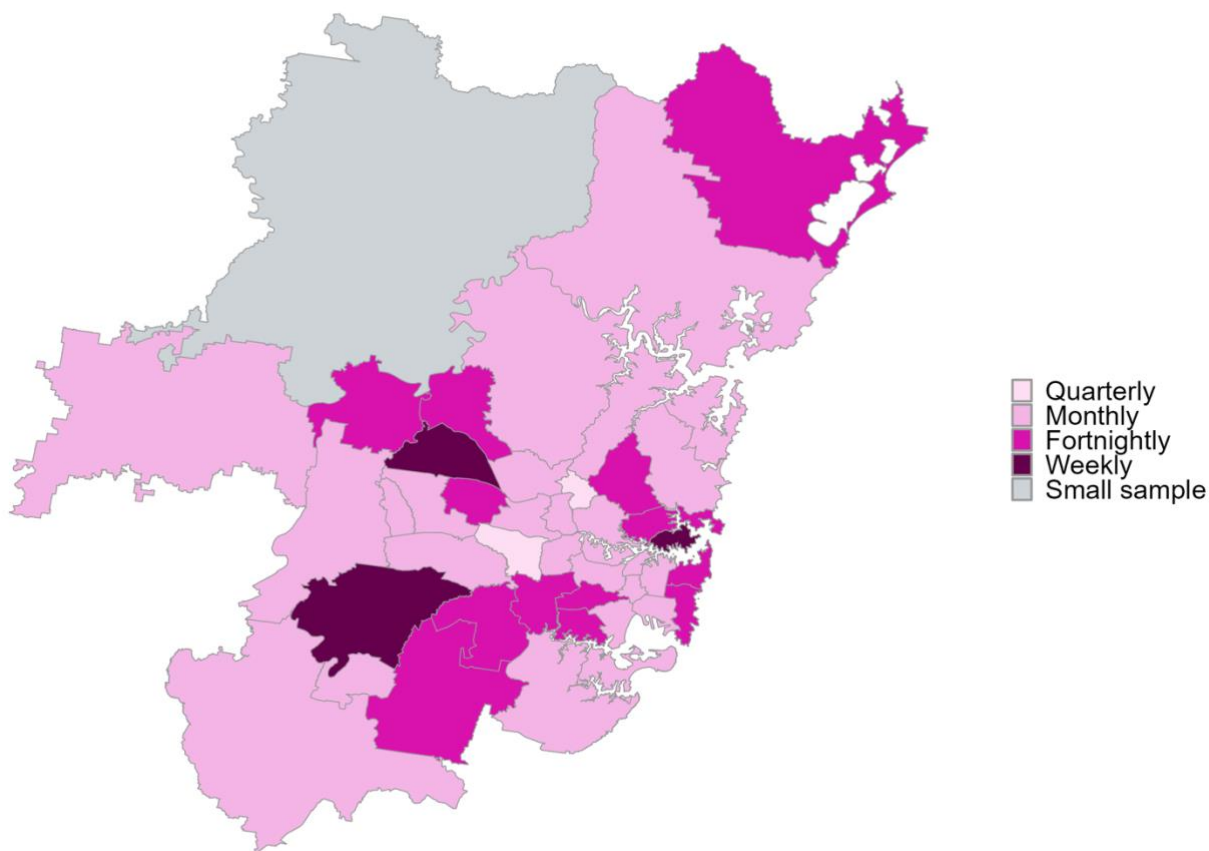
Toll road usage and costs vary by region

Drivers in Western Sydney use toll roads the most

We asked respondents how often they drive on toll roads, ranging from never to multiple times a day. We found that most drivers use toll roads monthly. The heaviest users live in Sydney’s West, where the ‘median’ driver in these SA3s—including Blacktown-North and Bringelly-Green Valley—uses toll roads on a weekly basis (see Figure D.9).

Figure D.9: Drivers in Western Sydney use toll roads the most

Median toll road usage by SA3



Note: Heatmap includes respondents who cover their own personal toll costs or cover both their personal toll costs and those of their household (N = 1,222)

Source: Independent Toll Review Survey 2023

These usage patterns may reflect that drivers in Western Sydney save more time by using toll roads compared to drivers in other areas. This could be because they commute longer distances to get to urban centres and value both saving time and having predictable travel times.

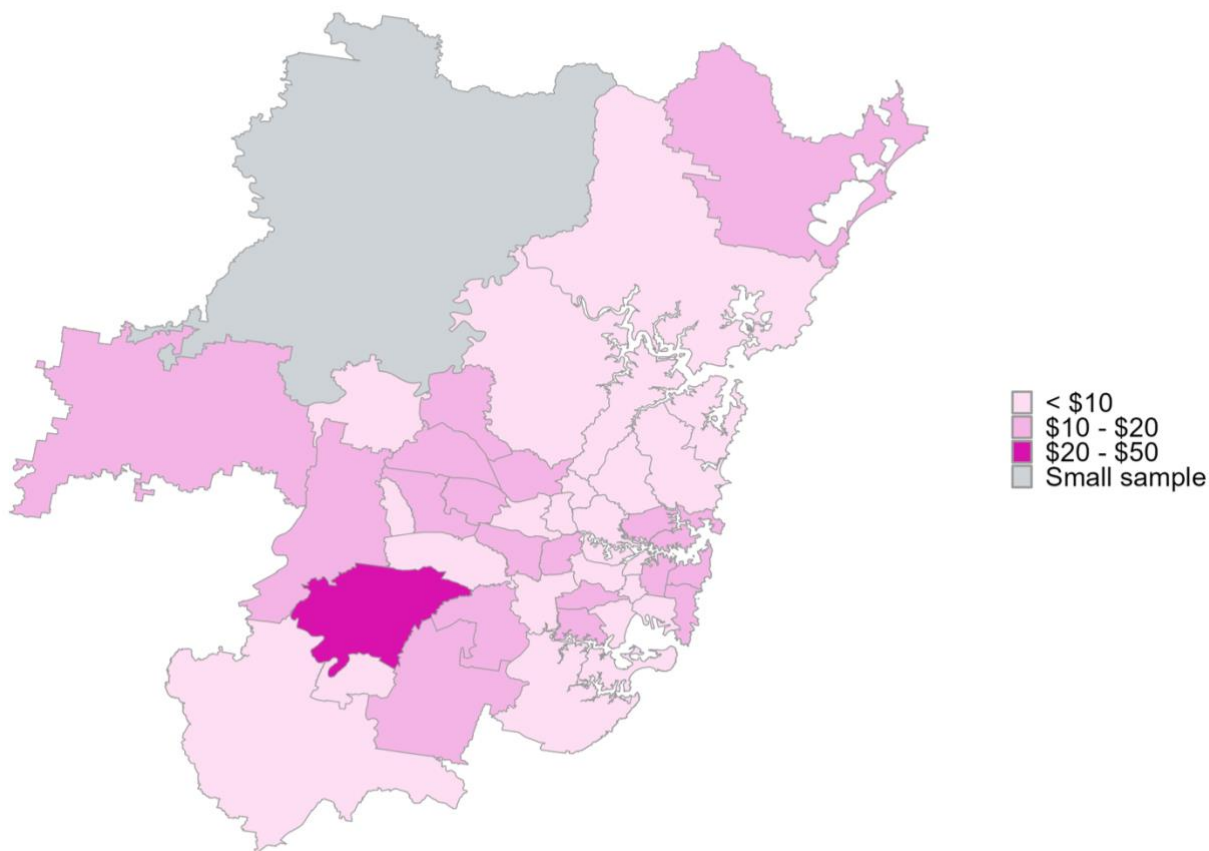
We also observe pockets of high toll road usage around the CBD, with many drivers reporting using the inner-city toll network, such as Sydney Harbour Bridge, Sydney Harbour Tunnel, and Cross City Tunnel.

Drivers in Western Sydney spend the most on toll roads

In accordance with toll usage patterns, we also see that those in Sydney's West spend the most on tolls each week. The Bringelly-Green Valley region spends the largest amount on tolls, with a median weekly expenditure between \$20 - \$50 (see Figure D.10). The South-West and inner regions of Sydney also emerge as hotspots for high toll expenses, with many SA3s reporting upwards of \$10 per week, in contrast to the Northern and Southern regions which tend to spend relatively less.

Figure D.10: Drivers in Western Sydney spend the most on toll roads

Median weekly toll road cost by SA3



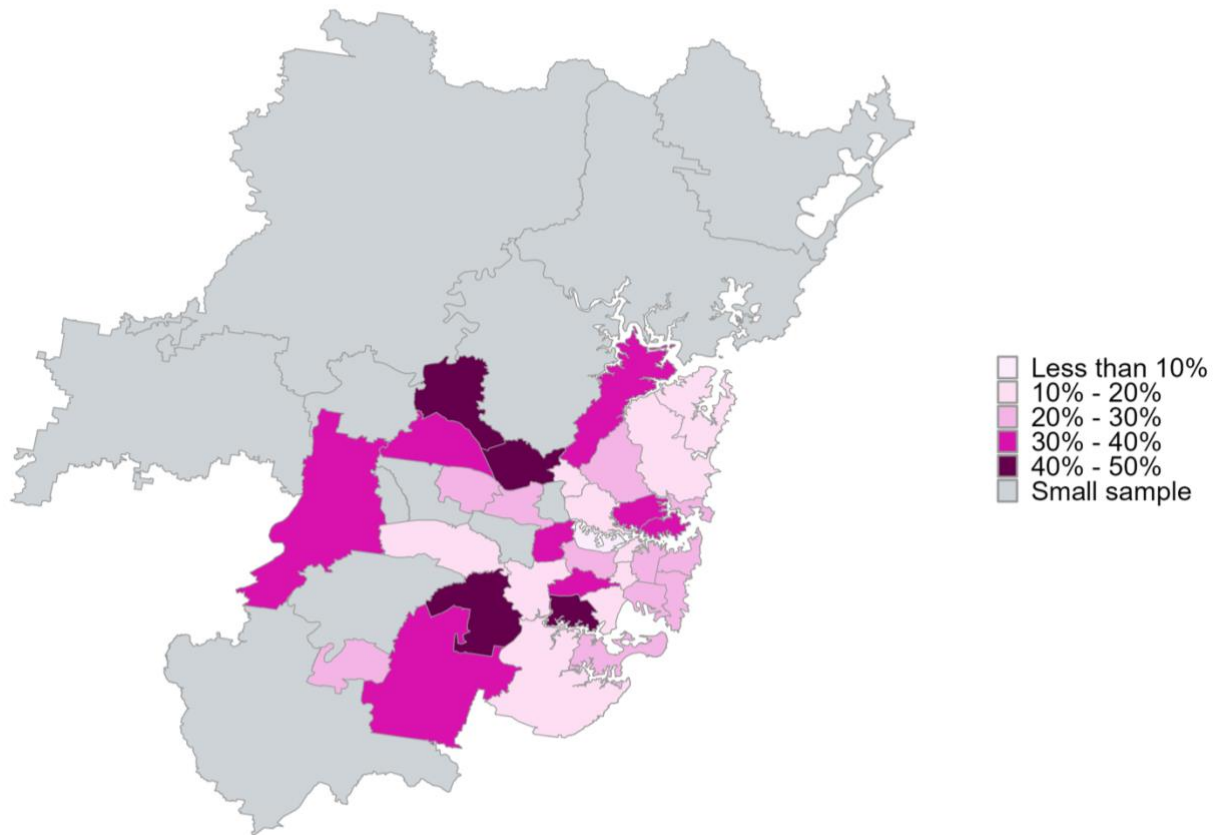
Note: Heatmap includes respondents who cover their own personal toll costs or cover both their personal toll costs and those of their household (N = 1,222)

Source: Independent Toll Review Survey 2023

We examine the responses of drivers spending \$20 or more a week to understand the relationship between toll expenditure and drivers' perceptions of toll roads. 314 respondents (20 per cent of total sample, and 22 per cent of toll users) reported typical weekly toll expenditure of \$20 or more. These relatively high-cost toll road users have a median household income of \$150,000 - \$199,999, which is the same as the broader sample. Among toll road users, those with higher weekly costs are more concentrated in Sydney's North-West and South-West regions. Nearly half of all toll road users in areas such as Baulkham Hills, Rouse Hill-McGraths Hill, Liverpool, and Hurstville spend \$20 or more a week (see Figure D.11). In contrast, most other regions have fewer than one-third of toll users paying \$20 or more each week.

Figure D.11: Drivers in North- and South-West Sydney are more likely to spend \$20 or more per week on toll costs

% toll road users that spend \$20 or more per week by SA3

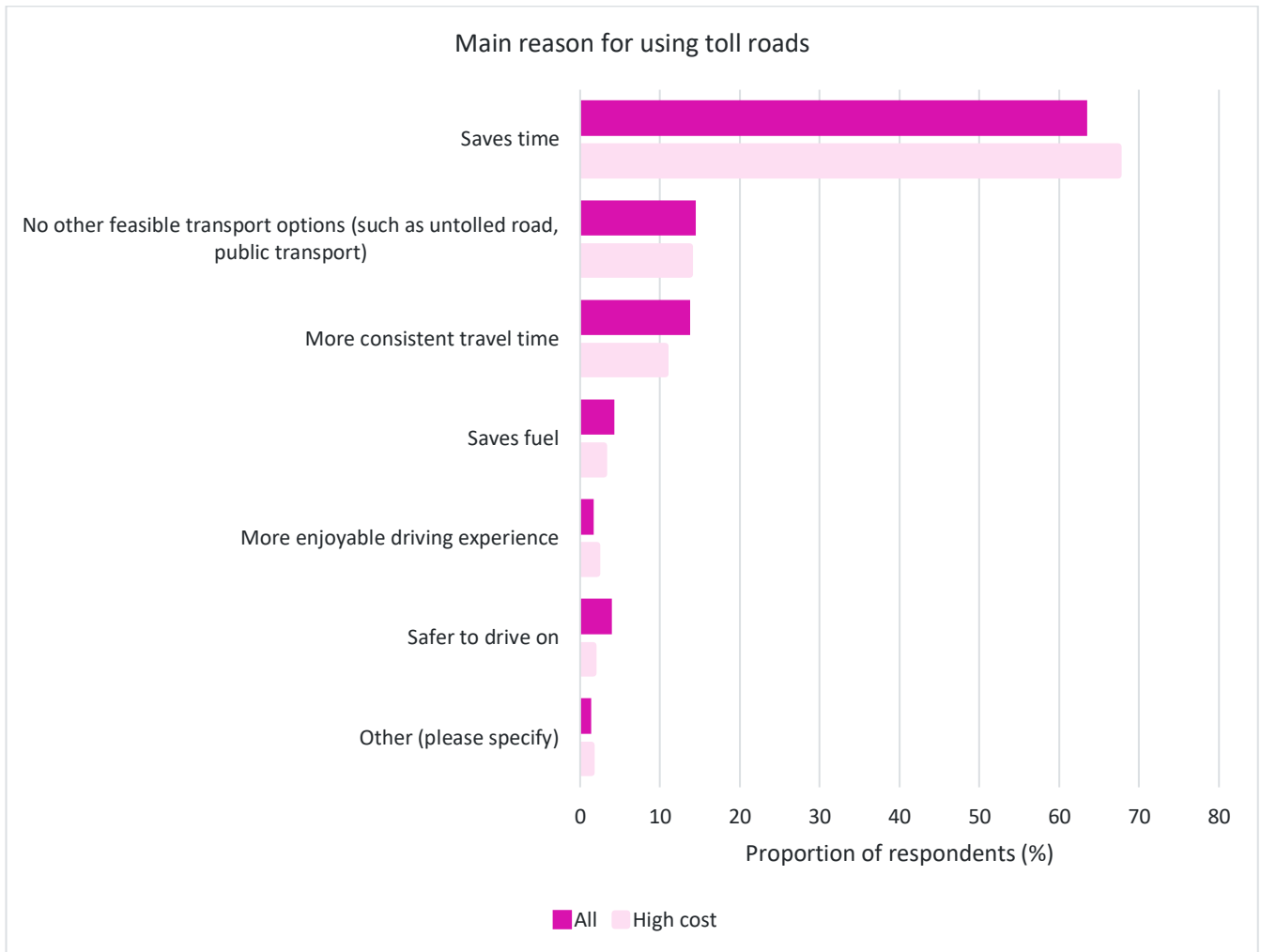


Note: Heatmap only includes respondents who spend \$20 or more per week on tolls, and who cover their own personal toll costs or who cover both personal toll costs and those of their household (N = 314)

Source: Independent Toll Review Survey 2023

One might expect that drivers who pay more each week for toll roads may have stronger preferences for using toll roads compared to other alternatives. However, we see that the main reasons for using toll roads among high paying users broadly align with those for the wider sample (see Figure D.12). That is, despite incurring higher toll costs, we do not observe evidence that these drivers differ significantly in terms of their preferences for using toll roads.

Figure D.12: High paying drivers have similar main reasons for using toll roads as the wider sample

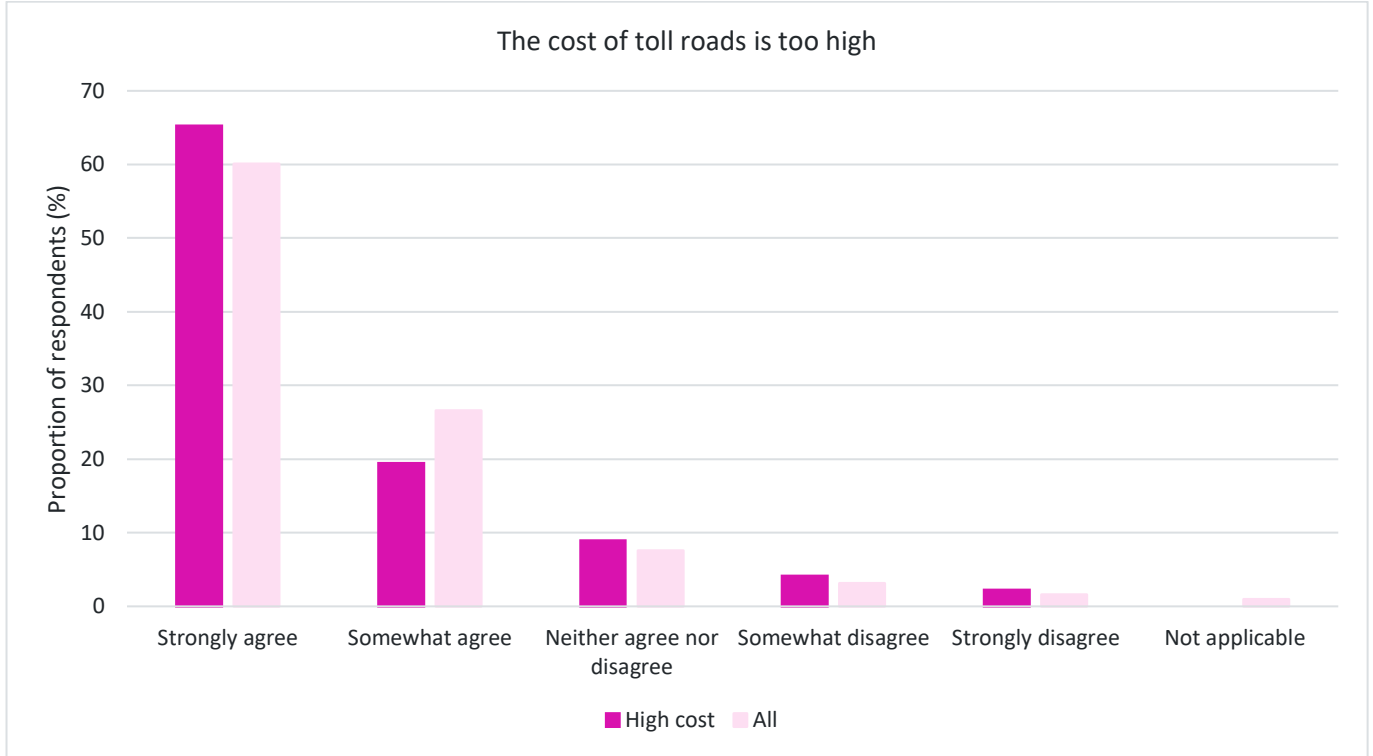


Note: Question was only asked to participants who incur toll expenses (N = 1,404)

Source: Independent Toll Review Survey 2023

Further, we also found that high paying drivers are slightly more likely to strongly agree that toll costs are too expensive (see Figure D.13). That is, rather than being desensitised to the higher weekly costs or perceiving it as simply part and parcel of driving on toll roads, these drivers are more adamant in their views that costs are excessive.

Figure D.13: High paying drivers are slightly more likely to strongly agree that toll costs are too expensive



Note: Question was asked to all participants (N = 1,404)

Source: Independent Toll Review Survey 2023

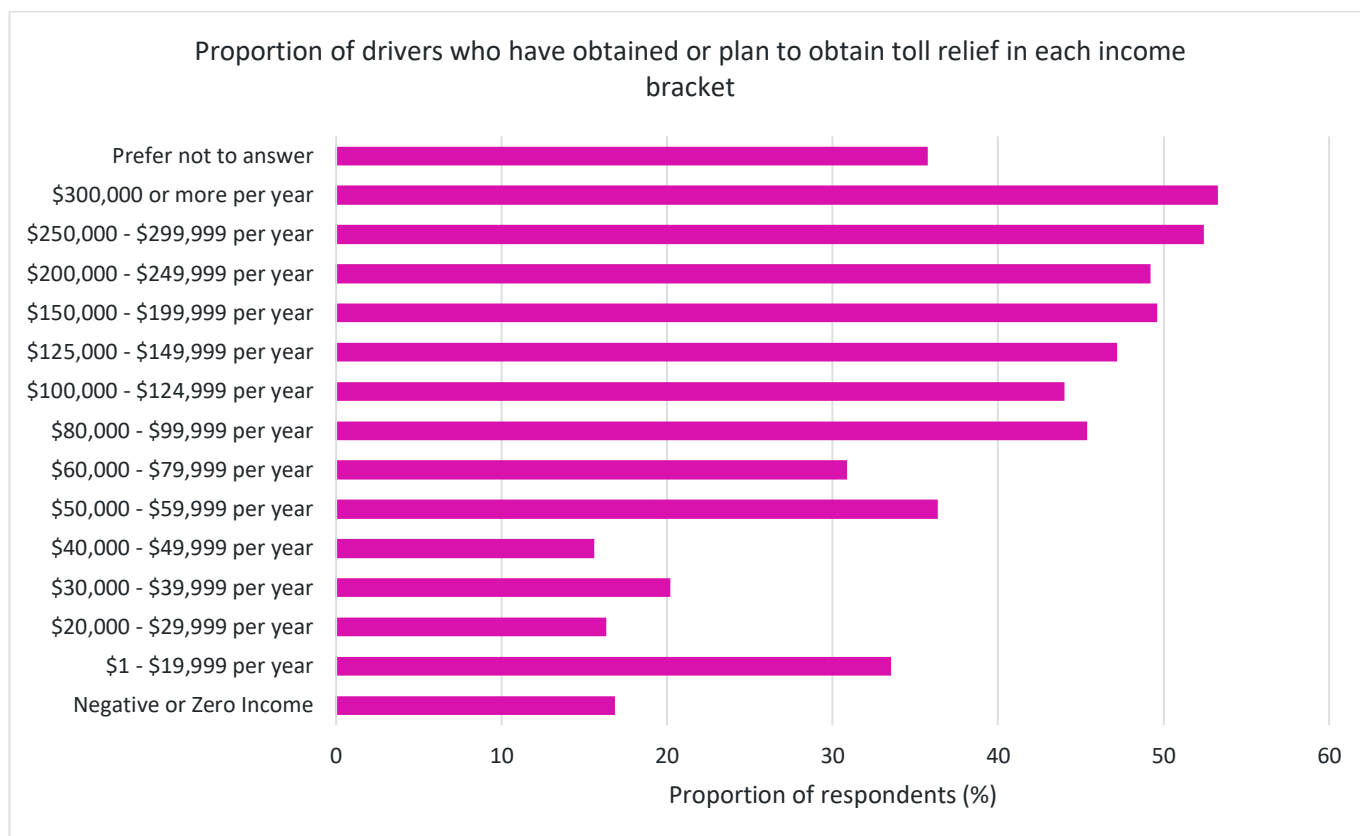
Drivers from middle- and high-income households are benefiting most from current toll relief schemes

We asked respondents if they were aware of toll-related rebates and, if so, what their update of these had been over the last 12 months. We found that 75 per cent of respondents were aware of toll-related rebates. Of these, 42 per cent were eligible and had either already obtained or planned to obtain the rebates, and 42 per cent were not eligible. Only 3 per cent were eligible but did not plan to obtain.

We then looked at drivers who had already obtained or planned to obtain toll relief as a proportion of each income bracket (see Figure D.14). More than 40 per cent of drivers with household incomes between \$80,000 and \$249,000 had obtained or planned to obtain toll relief. This increased to over 50 per cent of drivers from households earning \$250,000 or more per year. In comparison, less than 40 per cent of drivers from households earning under \$80,000 a year had obtained or planned to obtain toll relief.

This suggests that drivers from middle- and high-income households are benefiting the most from current toll relief schemes.

Figure D.14: Drivers from middle- and high-income households are benefiting the most from current toll relief schemes



Note: Question was asked to all participants who were aware of toll relief schemes (N = 1,143)

Source: Independent Toll Review Survey 2023

Conclusion

Most Sydney drivers told us they think toll costs are too high and unfair. In the face of cost-of-living pressures, many also believe the financial burden of toll costs to have grown over time. This aligns directly with the Review’s public consultation, with the level of toll costs emerging as the most prominent theme among the community.

Drivers are not impervious to rising prices, rather they adjust their transport decisions to offset cost increases. Approximately half of all drivers surveyed reported using alternative untolled roads due to toll costs. High prices even led some drivers to forego toll roads entirely. This can have negative spillover effects if it creates travel bottlenecks in other parts of the road or public transport network. While travel choices are made based on a range of factors, such as travel preferences and timing considerations, toll costs are certainly a key factor. Given peoples’ tendency to adjust their behaviour in response to changes in prices, an optimal toll pricing arrangement is one that caters for the impacts on the broader transport network across Greater Sydney.

From an equity perspective, special consideration must be given to the subset of drivers who are unable to avoid toll roads through alternative means. While three in four survey participants think that the cost of toll roads is unfair, this is especially true for those who lack viable substitutes and so cannot mitigate against the additional costs. The financial burden of tolls is most heavily felt in Sydney’s West, as these regions report the highest frequency of toll road travel and correspondingly pay the highest amount in toll fees.

The Independent Toll Review Survey gathered responses from a wide variety of toll road users across Greater Sydney. The recommendations set forth by the Independent Toll Review will only be enhanced for having listened to the experiences and perspectives of drivers.

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Appendix E: Toll Relief Schemes

M5 South-West Cashback (current, commenced January 1997)

The M5 South-West Cashback Scheme allows NSW residents to claim back the cost of tolls paid (except for the GST) while using a vehicle registered in NSW for private, pensioner or charitable use on the M5 South-West motorway. To date, the Scheme is estimated to have cost over \$2 billion (adjusting for inflation and including administration costs).⁸⁶

The M4 and M5 Cashback Scheme was introduced after a pre-election pledge by former premier Bob Carr to remove tolls proved unworkable.⁸⁷ The scheme applied to the M4 until tolls were removed in 2010.

At the time the scheme was introduced, tolls on the M5 South-West were expected to end in June 2022. Subsequent Governments have continued to fund the scheme. Tolling on the M5 South-West motorway is now expected to continue until December 2060.

A compensation regime applies if the Government removes the M5 South-West Cashback scheme prior to 10 December 2026.

Registration Relief (not current, commenced July 2018, ended June 2023)

Introduced in July 2018,⁸⁸ Registration Relief ('TR1') provided either free or a 50 per cent discount to vehicle registration to owners of privately registered light vehicles who spent over the yearly thresholds on tolls. In the claim period of 2022-23, customers would receive free vehicle registration if they spent a minimum of \$1,462 on tolls or a 50 per cent discount on vehicle registration if they spent a minimum of \$877 on tolls in the previous financial year.

TR1 has been replaced with the Toll Relief Rebate Scheme.

Large Towed Recreational Vehicle Toll Rebate (current, commenced June 2020)

The Large Towed Recreational Vehicle Toll Rebate ('LTRVTR') is available if a customer's Class A vehicle is towing a vehicle such as a caravan, causing the electronic toll point reader to determine the vehicle's class size as Class B.

The rebate will reimburse the difference between the heavy vehicle and light vehicle toll, with the rebate capped at 8 toll trips per monthly billing period. There is no end date for the LTRVTR.

⁸⁶ O'Sullivan, M. & Snow, S. (2021, April 6). 'Indefensible': Toll refunds for M5 Southwest dwarf all other motorway relief. The Sydney Morning Herald. <https://www.smh.com.au/national/nsw/indefensible-toll-refunds-for-single-sydney-motorway-dwarf-relief-for-13-others-20210324-p57dod.html>.

⁸⁷ Besser, L. (2008, December 31). Billions blown in toll fiasco. The Sydney Morning Herald. <https://www.smh.com.au/national/billions-blown-in-tolls-fiasco-20081231-gdt868.html>.

⁸⁸ Transport for NSW. (2021). Inquiry into Road Tolling Regimes: Submission No 146.

Toll Relief Rebate Scheme (current, commenced July 2022)

The Toll Relief Rebate Scheme ('TR2') is a broad-based toll rebate scheme where, every quarter, eligible non-business and small business customers will receive a 40 per cent rebate for every dollar spent on tolls once they have reached a minimum spend of \$375 in FY23 (or \$402 in FY24). The maximum annual benefit available for each eligible customer is \$750 in FY23 (or \$802 in FY24).⁸⁹

TR2 will conclude on 30 June 2024. \$520 million has been budgeted for TR2 across the two financial years it will be in place.

For claim period of FY23, there have been 216,186 unique toll accounts that have claimed approximately of \$103M in toll relief from TR2 (noting FY23 claims will remain open until 30 June 2024).

\$60 Toll Cap (current, commenced January 2024)

The \$60 Toll Cap ('TR3') provides a full refund to all private motorists who spend more than \$60 a week on tolls up to \$400 a week. The maximum benefit for a motorist under the program would be \$340 a week.

TR3 is funded until 31 December 2025, with \$561 million committed over the two years it is expected to be in place. More than 720,000 motorists are expected to benefit from TR3.

TR3 was introduced in response to toll costs increasing as a proportion of household budgets, in particular given wages growth has fallen behind inflation over the last two years.

Truck Multiplier Reduction (current, commenced January 2024)

The Truck Multiplier Reduction reduces the truck multiplier from 3x to 2x for up to ten trips a week on the M5 East and the M8. The Truck Multiplier Reduction is funded until 31 December 2025 with \$54 million committed for the two years it is expected to be in place.

This policy encourages trucks to use toll roads over local roads, reducing traffic on local roads. It also supports the truck industry by reducing cost of transporting goods for customers.

⁸⁹ Service NSW. (2022, August 18). Claim the toll relief rebate. NSW Government. <https://www.service.nsw.gov.au/transaction/claim-the-toll-relief-rebate>.

Appendix F: Current legislative framework

Road tolls and charges

Tolls and charges associated with travel on roads, bridges and tunnels are regulated by the Roads Act and Roads Regulation.⁹⁰

<p>Which roads, bridges or tunnels can be tolled?</p>	<ul style="list-style-type: none"> • Tollways. • Subject to Ministerial approval (or separate legislation), bridges and tunnels forming part of a public road that is controlled by Transport for NSW and classified as a metropolitan main road or highway (but not a freeway). <p>Sydney Harbour Bridge is tolled as a bridge on a metropolitan main road. All other toll roads are tollways.</p>
<p>Who can impose a toll?</p>	<p>Transport for NSW, or concessionaires whose power to impose tolls derives from Transport for NSW.</p>
<p>Who is Transport for NSW?</p>	<p>Transport for NSW is a statutory corporation representing the Crown and subject to Ministerial control. Its road functions include paramount responsibility for decision-making about classified roads, and the construction and management of roads on behalf of the State.</p>
<p>What is a tollway?</p>	<ul style="list-style-type: none"> • A tollway is a class of road declared by Ministerial order published in the Government Gazette. • Tollway declarations can only be made over roads owned by Transport for NSW or proposed to be constructed on land owned (or proposed to be owned) by Transport for NSW. <p>Once a road is declared as a tollway, it ceases to be a public road. This means there is no longer an automatic right of access to, and passage along, the road (i.e. conditions, such as the toll, may be imposed).</p>
<p>Who sets the amount of tolls or charges payable?</p>	<ul style="list-style-type: none"> • Transport for NSW currently sets the amount of tolls and charges. • It does this through contractual arrangements with private road operators and by an order published in the Government Gazette for Sydney Harbour Bridge and tunnel. <p>The Roads Act allows for the setting of maximum tolls and charges by regulation. This has not been used since 1994 when the tolls were set for the Bulli-Waterfall tollway.</p>
<p>Who is required to pay tolls?</p>	<ul style="list-style-type: none"> • The driver of the vehicle using a toll road is principally liable. • The liability to pay the toll arises when the vehicle passes the designated toll point. Toll points are marked by signs. • The registered vehicle owner can be liable too. See discussion below.

⁹⁰ Copies of the Roads Act and Roads Regulation can be found at Home - NSW legislation under the “in force” tab.

	Police, emergency and some other vehicles are exempt from paying tolls. Some exemptions are mandated by law, others are set through contractual terms.
Enforcement of toll and charge offences	<ul style="list-style-type: none"> • Failure or refusal to pay a toll or charge when due is an offence. • The registered vehicle owner is guilty of the offence even if they were not the actual offender, unless they satisfy the relevant authorities that either (1) the vehicle was stolen or illegally taken or used, or (2) another person was in charge of the vehicle at the time. • There are time bars around objecting to a penalty on these grounds, and complex rules which straddle the Roads Act, the <i>Fines Act 1996</i> and the <i>Road Transport Act 2013</i>. • If the penalty for an offence is met by the vehicle owner, the actual offender remains liable for the offence. However, the penalty can only be recovered once. • Evidentiary provisions and rules apply to tollways, tolls and toll cameras to ensure enforcement is based on sound technology and can be conducted efficiently using certificate evidence. • Proceedings for failing or refusing to pay a toll may be commenced within 12 months after the time when the offence is alleged to have been committed. <p>Unpaid tolls can also be recovered as debts from the registered vehicle owner.⁹¹</p>

Tolling concession agreements

What is a tolling concession?	An agreement entered into by Transport for NSW with a toll road operator to levy and collect tolls and charges for traffic on a tollway. Its purpose is to fund the provision of the tollway and related infrastructure.
What is their statutory basis?	<ul style="list-style-type: none"> • Roads Act section 213 and Part 6 of the <i>Government Sector Finance Act 2018</i> (GSF Act), operating together. <p>All current tolling concessions are both ‘leases’ under section 213 of the Roads Act and ‘joint financing arrangements’ under the GSF Act.</p>
Roads Act: leasing the operation of a tollway	<ul style="list-style-type: none"> • The Roads Act permits Transport for NSW to: <ul style="list-style-type: none"> — lease the operation of a tollway, or — lease the collection of tolls and charges on a tollway, or tolled bridge or tunnel. • The lease terms are determined by Transport for NSW, with the only constraint being that the amount of the toll and charge must not exceed the maximum prescribed by or calculated in accordance with the regulations. • In the absence of any regulations being made, Transport for NSW sets the amount of the tolls or charges for each toll road.

⁹¹ Roads Regulation 2018 (clause 80).

	<ul style="list-style-type: none"> • Tenders must be called for any lease to collect tolls and charges in connection with a bridge or tunnel on a public road. • The phrase ‘lease the operation of a tollway’ was considered in the case of CCM Holdings Trust Pty Ltd v Chief Commissioner of State Revenue; CCT Motorway Company Nominees Pty Ltd v Chief Commissioner of State Revenue [2013] NSWSC 1072. In that case, Bergin J described what is encompassed in the phrase ‘lease the operation of a tollway’ as follows: ‘If [Transport for NSW] leases the operation of a tollway, it is leasing not only the right to levy and collect tolls but is also imposing the obligations to do those things necessary to ‘operate’ the tollway, including maintaining it and keeping it in such repair as to enable its continuous use for the period of the lease (unless of course such lease expressly provides otherwise).’
Roads Act: granting real property leases over tollways	<ul style="list-style-type: none"> • Transport for NSW has historically agreed to grant a limited real property lease with each tolling concession. • The power to grant a lease over a public road is very limited. <p>The same limits do not apply to tollways and section 158(2) of the Roads Act permits Transport for NSW to ‘exercise in relation to any land in which it holds an interest any function that a private individual could so exercise if the private individual were the holder of the interest.’</p>
GSF Act: regulation of financial arrangements	<ul style="list-style-type: none"> • Financial arrangements of State entities are regulated by Part 6 of the GSF Act. • Part 6 of the GSF Act is a ‘paramount provision’. This means it prevails over the Roads Act to the extent of any inconsistency.⁹² • The regulated financial arrangements include ‘joint financing agreements.’ • A ‘joint financing arrangement’ is: <ul style="list-style-type: none"> — ‘any one of the following arrangements entered into by one entity (the principal entity) with another entity (the secondary entity), for the purpose of the exercise of the principal entity’s functions and in respect of infrastructure or other capital assets: — an arrangement under which the secondary entity acquires assets (including by lease or purchase) from the principal entity, a third party or a combination of the two, and uses them for the exercise of a function of the principal entity, — an arrangement under which the secondary entity constructs assets and uses them for the exercise of a function of the principal entity, — an arrangement described in paragraph (a) or (b), coupled with a transfer or reversion of the assets to the principal entity...’

⁹² Prior to the commencement of Part 6 of the GSF Act on 30 November 2018, the law was even stricter. From commencement of the *Public Authorities (Financial Arrangements) Amendment Act 2000* until the repeal of the PAFA Act by virtue of the GSF Act, the PAFA Act provided ‘a comprehensive system of arrangements for the control of authorities of the State in entering into and maintaining [financial arrangements].’ The PAFA Act prevented the exercise of any function under any other Act which might permit entry into or maintenance of financial arrangements without an authorisation or approval under PAFA. The PAFA Act was in place for most of the current tollway concessions.

	<ul style="list-style-type: none"> • A tolling concession is typically a joint financing arrangement because: <ul style="list-style-type: none"> — it is entered into by one entity (Transport for NSW) with another entity (concessionaire) for the purpose of the exercise of Transport for NSW’s functions and in respect of infrastructure or other capital assets, — it is an arrangement under which the secondary entity (concessionaire) constructs assets and uses them for the exercise of a function of Transport for NSW (operating roads), — it is coupled with a transfer or reversion of the assets to Transport for NSW at the end of the term. • Transport for NSW is only permitted to enter into a joint financing arrangement if the arrangement is permitted under a financial arrangement approval. • A financial arrangement approval is a written approval from the Treasurer to enter into the relevant financial arrangement. • The Treasurer can only give a financial arrangement approval for a tolling concession on the recommendation of the responsible Minister. • A financial arrangement approval for a tolling concession may be subject to terms and conditions, and Transport for NSW is required to comply with those terms and conditions. • The Treasurer may revoke or vary a financial arrangement approval by written notice. • The revocation or variation of a financial arrangement approval applies only from the time it takes effect and does not affect the validity of any arrangement entered into before the revocation or variation takes effect. • A written notice revoking or varying a financial arrangement approval may contain provisions of a savings or transitional nature consequent on the revocation or variation of the approval. • A financial arrangement approval for a tolling concession is conclusive evidence that anything done by Transport for NSW in accordance with the approval is authorised by the GSF Act.⁹³ <p>Once a financial arrangement approval for a tolling concession is in place, Transport for NSW may do ‘all things that are necessary or convenient to be done in connection with entering into’ the concession’. This may include delegating functions to the private toll operator or allowing the private toll operator to exercise its functions.</p>
<p>GSF Act: State guarantees</p>	<ul style="list-style-type: none"> • Under GSF Act section 6.27, the State has a discretion to ‘guarantee the due performance by [Transport for NSW] of any obligations incurred by [Transport for NSW] as a result of or in connection with [Transport for NSW] entering into any financial arrangement (whenever entered) as authorised by the GSF Act’. • The Treasurer is authorised to act on behalf of the State in giving a guarantee. • Although there is no obligation to do so, State guarantees are typically provided for tolling concessions. Each guarantee is subject to its own terms.

⁹³ *Government Sector Finance Act 2018*, s6.23(10).

Liabilities of the State or Treasurer under guarantees of financial arrangements do not require separate appropriation by Parliament.⁹⁴

Powers and obligations of toll operators

<p>Who is a toll operator?</p>	<ul style="list-style-type: none"> • Toll operator is a term defined by the Roads Act. It is largely synonymous with the term ‘toll road operator’ used in this report. • Transport for NSW is a toll operator for all purposes. <p>Private concessionaires are declared by Ministerial order to be toll operators with respect to specific tollways only.⁹⁵</p>
<p>Statutory regulation of toll operators</p>	<ul style="list-style-type: none"> • Toll operators have the following statutory functions (powers, duties or discretions)⁹⁶: <ul style="list-style-type: none"> — designate toll points (by signs or otherwise) - toll points are the points on a tollway at which the liability to pay the toll is incurred — set terms and conditions in relation to the manner of payment of tolls and charges for travel on their tollway (including terms regarding administrative charges) — publish information on their website in relation to their tolls and charges (see Roads Regulation clause 19(3) for full list) — publish the above information on signs approved by Transport for NSW — waive a toll or charge in respect of a particular vehicle or class of vehicles — deal with objections to tolls or charges (including internal review process) — display lawfully enforceable notices containing directions with respect to (1) the regulation of pedestrian and vehicular traffic on a tollway, or (2) the safety of a tollway and of persons and property on the tollway — recover unpaid tolls and charges as a debt from the registered operator of a vehicle. <p>In practice, there are contractual and planning constraints that further regulate the freedom of private toll operators in the exercise of the above functions.</p>
<p>Authorised officers of toll operators</p>	<ul style="list-style-type: none"> • Transport for NSW may appoint toll operator employees or agents as authorised officers in respect of the toll operator’s tollway⁹⁷: • Those authorised officers must wear a uniform issued by the toll operator or a clearly visible identity card issued by the toll operator.

⁹⁴ *Government Sector Finance Act 2018*, s 6.33.

⁹⁵ *Roads Act 1993*, Definitions.

⁹⁶ *Roads Act 1993*, Dictionary (toll point) and Roads Regulation clauses 19, 21, 22, 36 and 80 (all other).

⁹⁷ Roads Regulation clause 76 and Roads Act Dictionary.

	<ul style="list-style-type: none"> • The exercise of power by an authorised officer is invalid if the above requirement is not satisfied in circumstances where they are physically in the presence of the person in respect of whom the function is exercised. • Functions a toll operator’s employee or agent may be authorised to do include: <ul style="list-style-type: none"> — give directions in relation to the loading or unloading of motor vehicles on or from any part of a tollway [Roads Regulation cl 30], — give directions with respect to the regulation of pedestrian and vehicular traffic on a tollway [Roads Regulation cl 35(1)(a)], — give directions with respect to the safety of a tollway and of persons and property on the tollway [Roads Regulation cl 35(1)(b)], — exercise enforcement functions specifically in relation to tollways such as (1) require production of driver and vehicle information under Roads Act section 229 where the officer has a reasonably based suspicion that the driver has committed an offence, or (2) issue penalty notices under Roads Act section 243 (and in accordance with the <i>Fines Act 1996</i>). <p>Authorised officers of toll operators, and persons acting under their direction, are exempt from personal liability when acting in good faith for the legitimate purposes of the Roads Act.⁹⁸</p>
<p>Private tolls and charges</p>	<ul style="list-style-type: none"> • The Roads Act includes a definition ‘private toll or charge’ to refer to a road toll or charge levied or imposed by a person other than Transport for NSW (or a roads authority in relation to a road-ferry). • All current private tolls and charges relate to tollways. <p>The rules and enforcement procedures applicable to tolls and charges imposed directly by Transport for NSW also apply to private tolls and charges.</p>

Regulation of toll service providers

<p>What is a toll service provider?</p>	<ul style="list-style-type: none"> • A ‘toll service provider’ is a person who provides ‘toll services.’ <p>Toll services are ‘accounts, products or related services that enable the payment of tolls for the use of tollways, bridges, tunnels or road-ferries by persons who are required to pay such tolls.’</p>
<p>Is toll service provision regulated?</p>	<ul style="list-style-type: none"> • Toll service providers are not subject to specific statutory regulation, except in relation to sharing information with Government for the purposes of toll relief, and the fees they charge to toll road operators.⁹⁹ • Where they provide services on behalf of toll road operators, those services are regulated by the terms of the concession contracts, where applicable. <p>Toll service providers are also committed to inter-operability arrangements that apply across NSW, Victoria and Queensland.</p>

⁹⁸ *Roads Act 1993*, s256.

⁹⁹ See clauses 33, 78 and 78A of the Roads Regulation.

Operation of tollways

Who is the roads authority?	<ul style="list-style-type: none">• Toll operators are not roads authorities for their roads, and do not have the immunities of roads authorities.• When a tolling concession is granted, the Minister will usually issue direction under section 63 of the Roads Act making Transport for NSW responsible for the functions of a road’s authority with respect to the tollway. <p>The principal purpose of a section 63 direction is to ensure it is exclusively the function of Transport for NSW to make decisions as to what road work is to be carried on the tollway.¹⁰⁰</p>
What statutory protections apply?	<p>Sections 101 and Division 3 Part 9 of the Roads Act provide safeguards around use of a road by third parties. These provisions apply to tollways operated by Transport for NSW, but expressly not to privately operated tollways.¹⁰¹</p>

¹⁰⁰ *Roads Act 1993*, s61.

¹⁰¹ Roads Regulation cl 34.







Appendix G: Toll Collection System

All toll roads in Australia are electronically tolled. The toll road industry has been self-regulated since the early 2000s to allow full interoperability Australia-wide; allowing motorists with any account or ‘tag’ to access any toll road.

Toll collection on NSW toll roads is conducted by varying parties. Transport for NSW’s model divides the toll collection process into four distinct functions:

- Component 1: Roadside Infrastructure (including data collection).
- Component 2: Trip processing (processing data collected).
- Component 3: Account management.
- Component 4: Compliance.

Figure G.1: Tolling functions

C1 Roadside infrastructure	C2 Trip processing	C3 Accounts management	C4 Compliance
Physical equipment to collect data including gantries, number plate recognition and tag identification systems	Back-end systems for processing trip data to convert vehicle pass to toll charge	Retail and corporate account management services, including issue of electronic tags, sale of toll products to pay for travel on Sydney toll roads, customer contact channels and account billing	Compliance and enforcement functions
Concessionaire	Concessionaire or outsourced to service provider	 Roaming agreements	
 Car drives through gantry, tag/licence plate number data recorded	 Trip is constructed from tag/licence plate number data and rated	 Tags and passes issued/customers billed	 Issue of toll notices on behalf of toll roads

Source: Independent Toll Review

Payment of tolls

Motorists using a toll road must pay the toll in the time and manner specified by the toll road owner. Currently, motorists have up to 72 hours after travel to make arrangements to pay. In New South Wales, there are two ways that 'valid' trips on a toll road are paid for by the motorist:

- toll account, or
- pass.

No arrangement travel (or an 'invalid trip'), where a motorist travels on a toll road without a valid toll payment arranged by way of toll account or pass, is paid for by the motorist following subsequent compliance processes.

Toll accounts

Toll accounts are issued by toll retailers. Toll account holders are typically provided with a tag, a small physical electronic unit (transponder) that is affixed to the windscreen of a vehicle. As a vehicle passes under a tolling gantry (the physical infrastructure that houses vehicle detection, tag reader and video systems) the tag is detected and associated with the vehicle that is simultaneously detected. The tag data recorded by the vehicle detection system enables the trip to be reconstructed and a toll charge for the trip to be calculated.

Toll account holders may also have the option to travel on toll roads without a tag, utilising a registered vehicle licence plate number (LPN). When the vehicle passes under a tolling gantry, a photograph is taken of the vehicle's licence plate, and the details are matched to the linked toll account. Under this option, in addition to the toll charge, a licence plate matching fee (between 50c and 75c) also applies.

When a toll account is set up, the holder typically pays a pre-paid toll balance from which toll charges are deducted. The toll amount balance can be automatically topped up by the motorist's nominated payment method (credit card or bank account debit) once the account balance falls below a threshold amount. Other account types allow the motorist to post-pay tolls. Post-pay accounts are typically offered to corporate customers. Toll accounts can hold multiple tags and vehicle licence plate numbers.

Toll retailers remit the tolls paid to toll road operators. For 'foreign' trips (i.e. where the toll retailer is not owned by the toll road operator), the toll retailer deducts a roaming fee. Roaming fees are agreed in bilateral roaming agreements between each toll road operator and each 'foreign' toll retailer.

All Australian tags can be used on all Australian toll roads.

The two NSW-based toll retailers are E-Toll (Transport for NSW owned) and Linkt (Transurban owned).

Passes

Passes are temporary arrangements utilising a registered vehicle LPN. When the vehicle passes under a toll gantry, a photograph of the vehicle licence plate is taken, and the details are matched to the pass. The cost of a pass includes a matching fee for each trip.

Passes for use in NSW must be purchased from E-Toll or Linkt. The E-Toll pass product can only be used in NSW. The Linkt pass product can be used on all Australian toll roads.

Interoperability

To ensure interoperability between Australian toll roads, all tags and passes must comply with a technical specification that allows for use across different toll roads. Each toll road operator has access to an electronic toll collection system which enables payment of tolls by means of toll accounts and passes. The technical specification for interoperability of electronic toll collection systems in Australian is Standard AS4962:2005.

All Australian toll road operators are party to the Memorandum of Understanding (MOU) - Electronic Toll Collection. The parties to the MOU have agreed that they will work together and in consultation with each other to achieve the parties' objectives (listed below). The MOU was first executed in May 2001 and has subsequently been amended and restated to reflect changes in tolling operations over time. A new party to the MOU does so by executing a Deed of Accession.

The objectives of the MOU parties are to:

- ensure that the ETC systems operated by all parties are interoperable
- ensure that passes may be issued by anyone and are interoperable
- ensure the delivery of a quality service to motorists using an ETC system to pay a toll
- minimise the cost of operating ETC systems
- make the use of ETC systems on the toll roads as seamless as possible to motorists
- promote a public perception that the ETC systems and access to, and use of the tags and passes by motorists are managed and operated in an efficient manner.

The MOU requires each toll retailer to have a roaming agreement with each Australian concessionaire, for that retailers toll products to be recognised on any toll road.

Compliance and Leakage

In the event of an invalid trip (i.e. the motorist has not arranged payment within 72 hours), the concessionaire provides Transport for NSW Tolling Compliance Management with the vehicle licence plate number and trip data and requests that a toll notice be issued to the registered owner of the vehicle.

Transport for NSW Tolling Compliance Management issue a toll notice to the registered owner of the vehicle on behalf of the toll road operator under the letterhead of the relevant toll road. The toll notice requests payment of the toll plus a \$10 administration fee. If the toll notice is paid by debiting a toll account, the \$10 administration fee is waived and replaced with a \$1.10 toll notice transfer fee. On payment, the concessionaire receives both the toll and the \$10 administration fee.

If the payment is not recovered within the specified notice period (typically 14 days), the concessionaire may request Transport for NSW Tolling Compliance Management to issue a second toll notice to the registered owner of the vehicle. This second toll notice requests payment of the toll plus a \$20 administration fee. If the toll notice is paid by debiting an account, then the \$20 administration fee is waived, and a \$2.20 toll notice transfer fee is applied. On payment, the toll road operator receives both the toll and the \$20 administration fee.

If payment is not recovered within the specified notice period (typically 14 days), the toll road operator may request Transport for NSW Tolling Compliance Management section to issue a penalty notice to the registered owner of the vehicle. The penalty notice is a fine, typically \$180. If the penalty notice is not settled in the time and manner specified, an enforcement order may be issued by the Revenue NSW and Transport for NSW may suspend or cancel the motorist's licence or registration. The toll road operator must pre-pay an issuing fee, typically \$21.53, for each penalty notice issued.

On payment, Revenue NSW pays the toll road operator the toll, the administration fee and the \$21.53 penalty notice issue fee. Revenue NSW retains the balance of this fine.

As an alternative to issuing a fine, toll road operators may request that Transport for NSW provide the toll road operator with the personal contact details of the registered owner of the vehicle in order to contact them directly. Toll road operators can then pursue civil debt recovery.¹⁰² It has been indicated that within the financial year 2022-2023, 5 per cent of trips proceed to a toll notice.^{103 104}

¹⁰² Clause 80, Roads Regulation 2018

¹⁰³ Independent Toll Review. (July 2023). Public Hearing Transcripts.

¹⁰⁴ Transurban. (2023). NSW Independent Toll Review Public Consultation Submission. Independent Toll Review.

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