IPART Independent Pricing and Regulatory Tribunal | NSW

Maximum Opal fares until July 2028

Financial and Operational Performance

Information Paper

August 2024

Transport »

Acknowledgment of Country

IPART acknowledges the Traditional Custodians of the lands where we work and live. We pay respect to Elders both past and present.

We recognise the unique cultural and spiritual relationship and celebrate the contributions of First Nations peoples.

Tribunal Members

The Tribunal members for this review are:

Carmel Donnelly PSM, Chair
Dr Darryl Biggar
Jonathan Coppel
Sharon Henrick

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Invitation for submissions

IPART invites comment on this document and encourages all interested parties to provide submissions addressing the matters discussed.

Submissions are due by Monday, 16 September 2024

We prefer to receive them electronically via our online submission form.

You can also send comments by mail to:

Review of maximum Opal fares until July 2028
Independent Pricing and Regulatory Tribunal
PO Box K35
Haymarket Post Shop, Sydney NSW 1240

If you require assistance to make a submission (for example, if you would like to make a verbal submission) please contact one of the staff members listed above.

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The Independent Pricing and Regulatory Tribunal

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Contents

1 What are our key findings on financial and operating performance?

Performance of the public transport system can be measured by considering different aspects of the network, its operations and outputs relative to inputs. No single measure is likely to fully describe the performance of a public transport system. Rather performance should involve consideration of the running costs, revenues (including those raised by fares), outputs, service standards, safety, efficiency and customer satisfaction.

For this review one of our fare-setting objectives is to set fares that support the financial performance of the public transport network. This will help ensure that services continue to be delivered into the future, that service quality reflects passenger expectations and cost recovery from users of the network through fares is shared between taxpayer contributions and other revenue sources.

This information paper presents the key findings of our analysis on the financial performance of public transport services. Ongoing disruptions caused by external factors, such as COVID-19, have been considered in our findings. We discuss the importance of financial performance for this review in Section 2

The key findings presented in this information paper include;

- The proportion of operating costs recovered by fares was 18% in 2022-23. This result was affected by COVID-19 disruptions to patronage which impacted the revenue received by Transport for NSW (See Section 3.2).
- We expect the cost recovery of the public transport network to improve in future years. Cost recovery will be impacted by increasing patronage and our draft maximum fares (See Section 6).
- The efficiency of public transport services over the 2020-2024 determination period has been volatile and difficult to measure due to factors that are mostly outside of the control of service operators such as patronage disruptions caused by COVID-19. Efficiency measures are also difficult to compare over time due to changes in cost and funding structures (See Section 7).
- In 2022-23 some public transport services fell short of punctuality targets (See Section 4.1.1). Customer satisfaction with public transport services has reduced slightly over this period but is consistent with long term performance.
- Higher rates of fare evasion have had some impact on the revenue that Transport for NSW receives from fares (See Section 3.3.2).

2 Why is financial performance important to our review?

The Opal network, like many public transport networks around the world, does not recover its full costs from fares. Most funding for public transport is paid for by NSW taxpayers, not passengers. Sharing funding like this recognises that all of society, including non-users, benefits from public transport.

Measuring cost recovery promotes transparency and accountability. The measurement helps taxpayers and passengers understand their relative contributions towards public transport services and whether the public transport network will remain financially viable into the future.

For this review, we have been asked to consider, among other things, cost recovery in the post-COVID-19 environment. COVID-19 impacted both costs of operating the Opal network and the revenue obtained from fares in the short term and it is unclear what the ongoing impacts will be in the longer term. It is important that efforts to increase cost recovery from fares are balanced with the other objectives of our review, such as ensuring affordability and accessibility for groups experiencing disadvantaged and optimising the efficiency of transport networks. As we noted in our Issues Paper, these objectives can compete with each other, and it is important to balance the interest of financial performance with our other objectives.

This information paper discusses our draft findings on the current level of cost recovery and how it has changed over time.

This information paper also discusses how we investigated the efficiency of public transport services. Efficiency, in simplest terms, is measuring how well inputs are turned into outputs. The inputs of public transport can be things such as the number of vehicles owned, or staff hours worked. The most straightforward input is money, either from passenger fares, taxes or other sources. The outputs are what public transport creates, this includes passenger trips, passenger kilometres travelled, and vehicle kilometres travelled. Some of these efficiency measures are not entirely within the control of the public transport operator (i.e. patronage).

The ongoing disruptions caused by COVID-19 mean that any measure of efficiency will have an increased level of uncertainty. Further, the results of any efficiency calculation will vary based on the output we have chosen to measure. For example, patronage was significantly impacted by COVID-19 (see Figure 3.1) while vehicle kilometres travelled was relatively consistent (see Figure 3.6).

The uncertainty caused by COVID-19 disruptions will impact our efficiency measurements. However, we have calculated the efficiency of public transport services to establish a baseline for future reviews and to understand how efficiency will be impacted by the recovery of public transport patronage. See Section 6 for this analysis.

We have also considered the quality and reliability of services, including safety standards. High quality and reliable services encourage patronage which supports the overall financial performance of the Opal network. Likewise, if financial performance declines, then the burden of high quality and reliable services is increasingly paid for by the taxpayer rather than passengers. We have discussed the quality and reliability of services in Section 4.

3 What is the current level of cost recovery from fares?

Cost recovery is an important element of the financial performance of the public transport network. We estimate that cost recovery from fares in 2022-23 was 18% across all modes of public transport[a]. This has declined from 26% since 2019-20[b].

The impact of lower cost recovery is that more of the cost of public transport is being paid for by taxpayers instead of by passengers.

We have changed how we measure cost recovery since our last review. This will impact any comparison between the cost recovery figure for 2022-23 and those calculated in previous reviews. We discuss the reasoning for this change and the new methodology in Section 5.

Cost recovery has been impacted by several factors such as lower than expected patronage over the last several years due to disruptions caused by the COVID-19 pandemic. Another factor is rising costs, which includes inflationary pressure, the introduction of new Metro and light rail services in 2019.

The following sections set out our analysis of cost recovery and how we measured cost recovery.

Throughout this information paper when we refer to 'costs' these are the expenses of running a public transport service, not what passengers pay. When we refer to 'fares' or 'prices' we are referring to what passengers pay for public transport.

3.1 What is cost recovery?

Public transport receives most of its income from passenger fares and taxpayer subsidies[c]. If a public transport service increases the proportion of revenue received from people who use the service, then it is less reliant on taxpayer subsidies to pay for operating and maintaining service quality and frequency. Alternatively, if the proportion of revenue received from people using the service decreases, then the public transport service is more reliant on taxpayer subsidies.

The calculation of cost recovery highlights the balance between passengers and taxpayers and how much each group pays towards public transport. We heard from some stakeholders, in both submissions to our Issues Paper and through our survey on public transport preferences, that public transport should be free for passengers. This would mean that cost recovery is 0% and that taxpayers pay all the costs associated with public transport.

[a] Of operating costs, including costs shared across all modes.

[b] This year was partly impacted by COVID restrictions from mid-March to June 2020, however it is the earliest year for which we have consistent financial data.

[c] Public transport can also receive income from sources such as advertising.

In our 2020 review, we found that Government spending per household in 2018-19 was $4,900 a year on public transport in NSW. This was the third highest category of Government spending after health and education.[1] In 2023-24, based on budget estimates, we estimated spending per household on public transport was $6,800[d]. It is likely that the increase in Government spending is partly due to funding new services such as the Metro.

Note: Spending is across NSW not just the areas serviced by the Opal network.
Source: NSW Government, 2023-24 Budget Paper No.1 – Appendix A1, NSW Government, 2023-24 Budget paper No.2 – Agency Financial Statements, NSW Government, 2023-24 Budget Paper No.3 – Infrastructure Statement, Transport for NSW, 2022-23 Annual Report Volume 2, ABS, 2021 Census QuickStats, IPART analysis.

Taxpayers are already paying more for public transport costs, in real terms, than they were in 2018-19. This is most likely due to the increased capital costs of providing new services such as the Metro and Light Rail.

In our Information Paper - Affordability, we show that passenger fares are lower in real terms than they were in 2014-15.[2] In other words, inflation since 2014-15 has grown faster than fares. In our Information Paper - Patronage we show that passengers are taking fewer trips by public transport in 2023-24 than they were in 2018-19. Together with the rising costs experienced across the economy and because of higher levels of service provision, the share of costs paid for by passengers towards the operation of the public transport system has fallen.

It is important that the costs of public transport are equitably balanced between taxpayers and passengers. This does not mean an equal split between passengers and taxpayers but at a minimum means that the contribution of taxpayers is at a rate that Government spending can sustain without reducing service levels, and achieving standards of safety, reliability and quality. It also considers the external benefits that passengers of public transport provide to society, such as avoided road pollution or congestion (See our Technical Paper – Modelling socially optimal fares).

Lowering fares further would be unlikely to support this equitable balance, even if additional people were incentivised to increase their public transport usage. In particular, the balance of costs may be inequitable for taxpayers who live outside the Opal network or in areas where public transport service is poor.

[d] If we discount the impact of inflation and calculate the spending per household in 2018-19 dollars, then on average Government spending per household is $5,956 in 2023-24 an increase in real terms of more than $1,000.

However, cost recovery is not the only factor we consider when setting fares. Affordability for all groups and ensuring fares represent value for money, recognise external benefits and incentivise a greater share of sustainable transport modes are all relevant considerations in our fare setting approach.[e]

3.2 How has cost recovery changed?

We have calculated cost recovery from 2019-20 to 2022-23 using operating costs and shared costs[f]. Table 3.1 shows the cost recovery for each year. Most of the change in cost recovery can be attributed to the disruptive impacts of COVID-19 and ongoing impacts on patronage of public transport.[g]

Table 3.1 Cost recovery – operating costs and shared costs

	2019-20	2020-21	2021-22	2022-23
Cost recovery	25%	16%	10%	18%

Source: Transport for NSW, Information request provided to IPART.

3.3 What caused the decline in cost recovery?

Cost recovery declines when the revenue from passenger fares accounts for a smaller proportion of the cost of providing public transport. In the Opal network we have observed three factors contributing to declining revenue. These are:

- passengers using the service less frequently
- the cost of public transport services increasing
- fares are declining in real terms.

In the period most heavily impacted by the COVID-19 restrictions (March 2020 to December 2022), cost recovery was impacted by the duration and impact of the pandemic and travel restrictions. In the following years the speed and extent of patronage recovery was also uncertain. Some changes to timetabling and service frequency were driven by staff shortages.

We have observed that in the post-COVID-19 environment service frequency remained at similar levels to the pre-COVID-19 period.

3.3.1 How has public transport revenue changed?

Patronage of public transport over the last four years has been considerably less than the patronage experienced before COVID-19. Fewer passengers using public transport services reduces the fare revenue received by public transport operators.

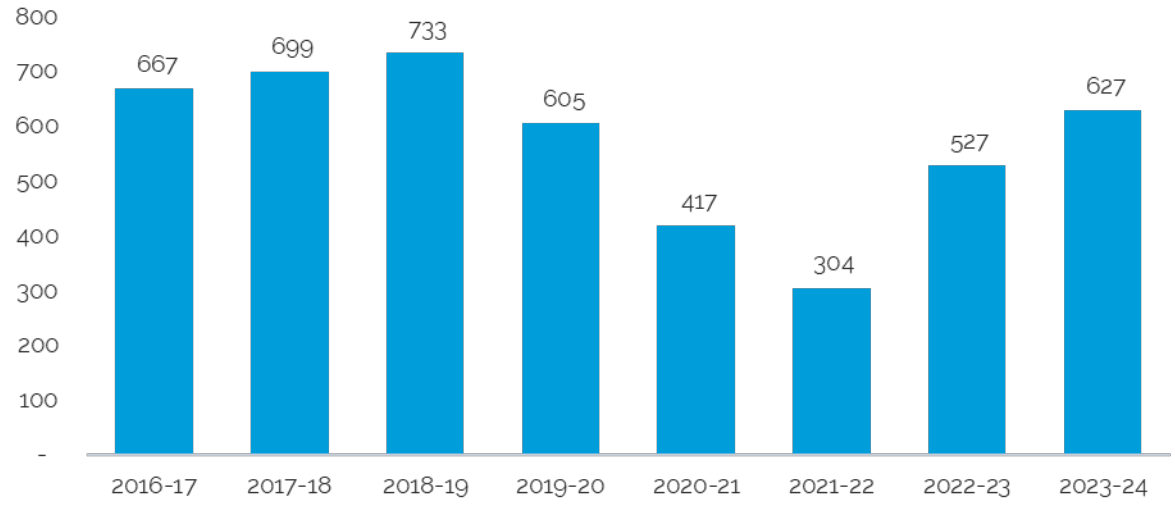
[e] In our Information Paper - Affordability we set out more details on issues of affordability and draft recommendations, such as using concession fares to target specific groups of people experiencing disadvantage.

[f] Shared costs are costs that are apportioned across the different transport modes, for example the Opal ticketing system.

[g] The 2019-20 year was only partly impacted by COVID-19 disruptions.

In 2023-24 patronage was about 86% of 2018-19 levels. The annual patronage of the Opal network is shown in Figure 3.1. To read more on how patronage was impacted by COVID-19, see our Information Paper - Patronage.

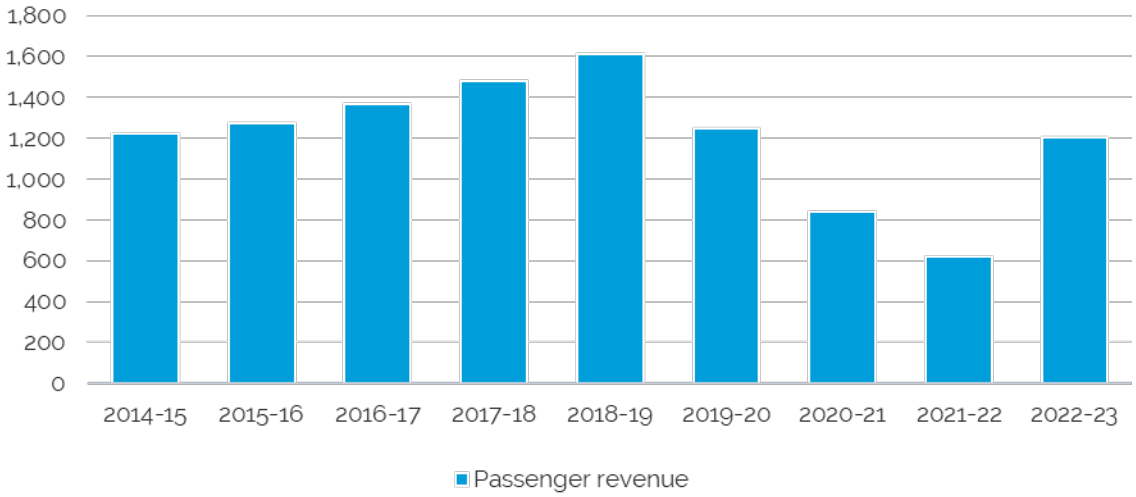
Figure 3.1 Annual patronage (millions)



Source: Transport for NSW, Opal Trips – All Modes, accessed July 2024.

Passenger revenue was impacted by the decline in patronage. Passenger service revenue was growing steadily from 2014-15 to 2018-19, it then declined from 2019-20 to 2021-22. In 2022-23 passenger service revenue was $1,207 million compared to $1,609 million in 2018-19 (Figure 3.2), this is equivalent to 75% of pre-COVID-19 revenue.

Figure 3.2 Passenger revenue (nominal, $millions)



Note: The years from 2019-20 onwards use a different data source than the preceding years. This may lead to some minor inconsistencies when comparing across years, due to changes in organisational structure and/or accounting practices. Source: IPART, Opal fares 2020-2024 – Data sources, February 2020, Transport for NSW, Information request provided to IPART.

The reduction in passenger service revenue corresponds to the reduction in cost recovery. As patronage and revenue continues to recover post-COVID-19 we would expect cost recovery to also continue to recover.

3.3.2 Did a reduction in fare compliance impact revenue?

In feedback to our Issues Paper some stakeholders raised concerns about fare evasion on the Opal network including the rates of fare evasion observed, a perceived lack of enforcement, and the relationship of fare evasion to revenue loss or fare increases. Some stakeholders considered fare increases would not be necessary if fare evasion was enforced more strongly.

Transport for NSW conducts a fare compliance survey twice a year to measure fare compliance and estimate revenue loss across the public transport network.

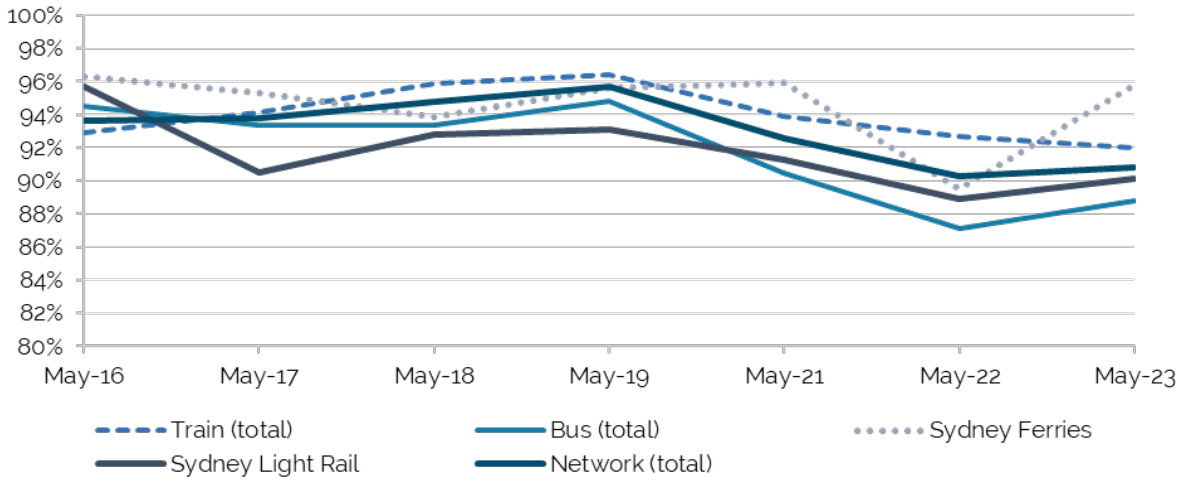
Survey data shows that fare evasion and other forms of non-compliance have increased across the network since 2019 reversing the previous trend, which had seen fare non-compliances declining since 2016.[3]

Fare evasion rates since 2016 are presented in Figure 3.4 by mode and across the Opal network. It shows that for most modes there was a decline in fare evasion leading up to 2019 but an increase since 2021. Fare evasion is a more visible form of fare non-compliance but is not the only type.

Other types of non-compliance on public transport include misuse of a concession card, and no tap-ons[h] are also measured in the fare compliance survey. The overall rate of non-compliance, including fare evasion, was 9% in May 2023, rising from a low of 4% in 2019.[4] In May 2023 revenue loss types of non-compliance were estimated at 7%.

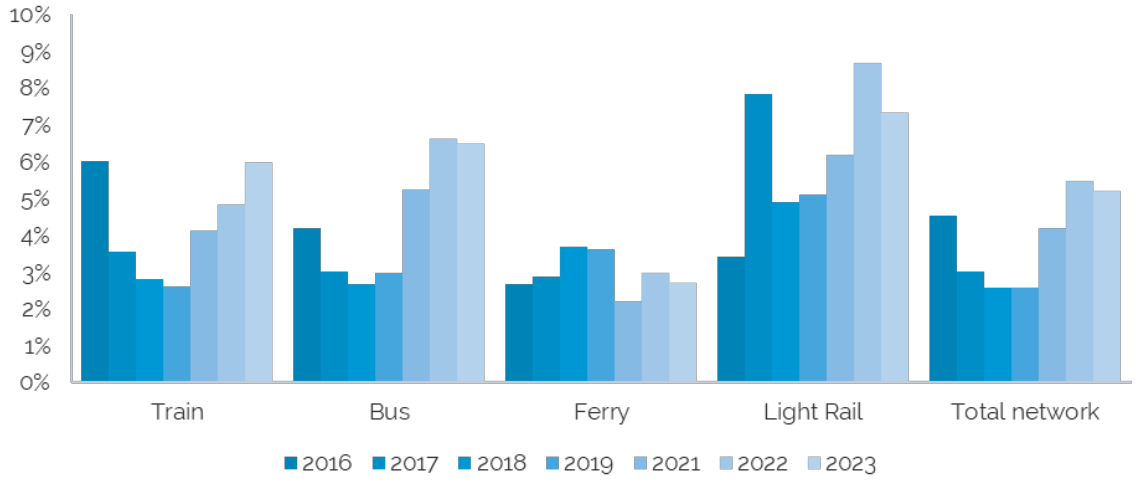
[h] Transport for NSW records three types of fare non-compliance; no ticket – fare loss, no ticket no fare loss, and concession misuse.
"*No ticket – fare loss*" refers to fare paying customers carrying an Opal card or contactless payment but not tapping on, and customers carrying no ticket at all.
"*No ticket – no fare loss*" refers to Opal single trip tickets not tapped on and free groups not tapping on, such as school students.

Figure 3.3 Fare compliance rates in the Opal network by mode of travel (May 2016 – May 2023)



Note fare compliance surveys were not completed in 2020 due to COVID-19 restrictions and safety concerns. 'Trains' include services operated by Sydney Trains Intercity, Sydney Trains and Metro (since 2019) modes.
Source: Transport for NSW, May 2023 Fare Compliance Survey results, August 2023; Transport for NSW, May 2019 Fare Compliance Survey results, July 2019, Transport for NSW, May 2017 Fare Compliance Survey results, August 2017, last Accessed August 2024

Figure 3.4 Fare evasion rate by mode of transport (May 2016 – May 2023)



Note fare compliance surveys were not completed in 2020 due to COVID-19 restrictions and safety concerns. 'Trains' include Sydney Trains Intercity, Sydney Trains and Metro (since 2019) modes.
Source: Transport for NSW, Fare Compliance Survey Results Data, accessed February 2024.

3.3.3 What is the impact of fare non-compliance and who pays for it?

Transport for NSW estimated that between January and December 2023 the revenue loss from ticketing non-compliances were approximately $122 million.[5][6] This represents a significant proportion of annual passenger service revenue received by Transport for NSW, which was approximately $1,207 million in 2022-23.[7]

Lost revenue caused by fare evasion does not result in higher maximum Opal fares. The cost of fare evasion is borne by the taxpayer. Fare non-compliances were not the main driver of reduced revenue and cost recovery of the Opal network, but it has contributed to the decline. It is likely that revenue decreases and fare non-compliances are both related to the travel disruptions that occurred during the COVID-19 impacted years.

The fare compliance survey completed by Public Transport Victoria observed similar patterns of reduced in compliance over the same period[8].

Some categories of fare non-compliance do not result in revenue loss, these are categories of traveller who receive free public transport (primarily school students) but do not tap on/off, which is a condition of most free travel cards.

The impact of all types of non-compliances that do not record a tap on mean that Transport for NSW have reduced information about the utilisation of services. Transport for NSW relies on accurate information for service monitoring, reporting, and planning purposes.

If fare non-compliance rates remain higher than normal for a prolonged time, the behaviours could become more prevalent, more culturally accepted, and harder to shift. As patronage increases the revenue loss associated with the high rate of non-compliances would also increase.

3.3.4 What influences fare non-compliance?

Fare evasion and other forms of fare non-compliance are a complex set of behaviours that can have different causes and motivations. To help understand the increase in ticketing non-compliances over the last determination period we have reviewed literature on the topic from other transport networks.

Research on motivations and attitudes of fare evasion on public transport in Melbourne has identified complex attitudes and views towards fare evasion or travelling without a valid ticket. Delbsoc and Currie (2016) found differences in the circumstances and ticketing non-compliance behaviours many passengers perceived to be true 'fare evasion' and the degree to which these non-compliances were considered acceptable. Their research identified four attitude segments towards ticketing non-compliance, differing by circumstance and intent categorised as:

1. **accidental evader** – characterised by strong views against fare evasion with rare occurrences of non-compliant travel occurring by accident, or not understanding the ticketing system or malfunctioning ticketing equipment.
2. **"It's not my fault" evader** – characterised by an intent to pay but occasionally travelling without a valid ticket due to circumstances perceived to result in difficulty in paying such as unintentionally finding low card balances after boarding, long queues for top up machines or crowded services obstructing the on-board ticket validator[i].
3. **calculated risk taker** – characterised by an intent to travel without a valid ticket and risk being caught. Travels without a valid ticket frequently. Justification includes travelling a short distance, saving money or a prevailing culture of fare evasion.

[i] Note that unlike the light rail on the Opal network, the tram network in Melbourne has validators on board not at stops.

4. **career evader** – Characterised by an intent to travel without a valid ticket and almost always travelling without a valid ticket and generally feel a sense of pride or at least an absence of guilt or embarrassment

Similar research in other international transit systems have identified other factors influencing fare evasion intent, behaviour and motivations can include:

- Affordability
- Lack of understanding of the ticketing system
- To protest dissatisfaction with service quality
- Ideological opposition to the legitimacy of inspections.[9]

Some stakeholders considered insufficient resources are allocated to ensuring passengers comply with ticketing conditions. Non-compliant travel behaviour can be influenced by different interventions, when the motivations and causes of the behaviour are well understood. In the years from 2016 to 2019 Transport for NSW reduced fare non-compliance by applying behavioural insights to the existing compliance and enforcement approach.[10]

Public Transport Victoria publishes its annual compliance Network Revenue Protection Plan on its website. It uses the social research into fare evasion motivations above to target its activities to priority areas. Similar research, that is based on the Opal network, may assist Transport for NSW in improving rates of fare evasion.

Engineering controls such as ticket barriers and tap on sounds generally make fare evasion more difficult for intentional fare evaders. They can also reduce some types of unintentional fare evasion and ticketing non-compliances but not all.

However, physical barriers can create accessibility challenges for some types of passengers and can slow down boarding and impede flow out of stations. They can be costly, difficult or impractical to implement in some circumstances such as certain modes (bus and light rail), smaller, less utilised stations or older heritage train stations. It also does not change ticketing non-compliances such as travelling without a valid concession entitlement.

Engineering controls can be complemented by inspections, compliance and enforcement measures, education and marketing campaigns, affordability support and concession schemes, ticketing simplification and other interventions to influence rates of ticketing non-compliances. Each of these interventions can be designed to address different segments or drivers of ticketing non-compliances.

Improving ticketing compliance

Ticketing compliance is the responsibility of Transport for NSW. IPART's role is to set maximum fares that are equitable and balance the mandatory considerations of the Act and referral.[j].

However we are proposing to recommend Transport for NSW consider conducting research into the attitudes and motivations relating to increased ticketing non-compliances of passengers on the Opal network.

[j] See the referral on our website and s124 (3) of the Passenger Transport Act 2014 for the full list of mandatory considerations for this review.

This would allow Transport for NSW to better understand the reasons for increased ticketing non-compliances in its own network and context. The findings of this research could allow it to more effectively design and implement targeted strategies to address the increased rates of ticketing non-compliances and foregone revenue.

We have also made draft recommendations for better targeting of benefits, discounts, or concessions to improve affordability for certain groups.

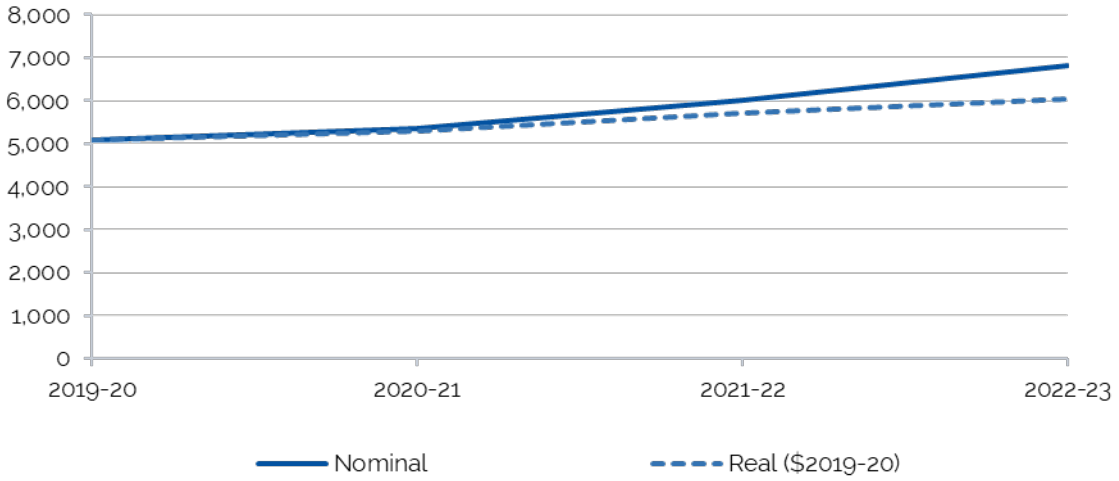
3.3.5 How have the costs of public transport changed?

The cost of providing public transport is the other important factor that influences the cost recovery of public transport. Operating costs are the cost of activities such as fuel and electricity for running vehicles, maintenance and cleaning of vehicles and employing staff. Operating costs were not significantly impacted by COVID-19, because services continued to operate at similar levels and frequencies, despite lower patronage.[k]

The cost of public transport services across the Opal network have continued to increase. Cost increases were smaller in years when patronage was most affected but have risen faster as more passengers have returned to using public transport, see Figure 3.5. These years also coincided with a general increase in inflation of costs across the economy.

The impact of rising costs during this period is that taxpayers paid a greater proportion of the cost of providing public transport.

Figure 3.5 Annual operating costs for public transport ($millions)



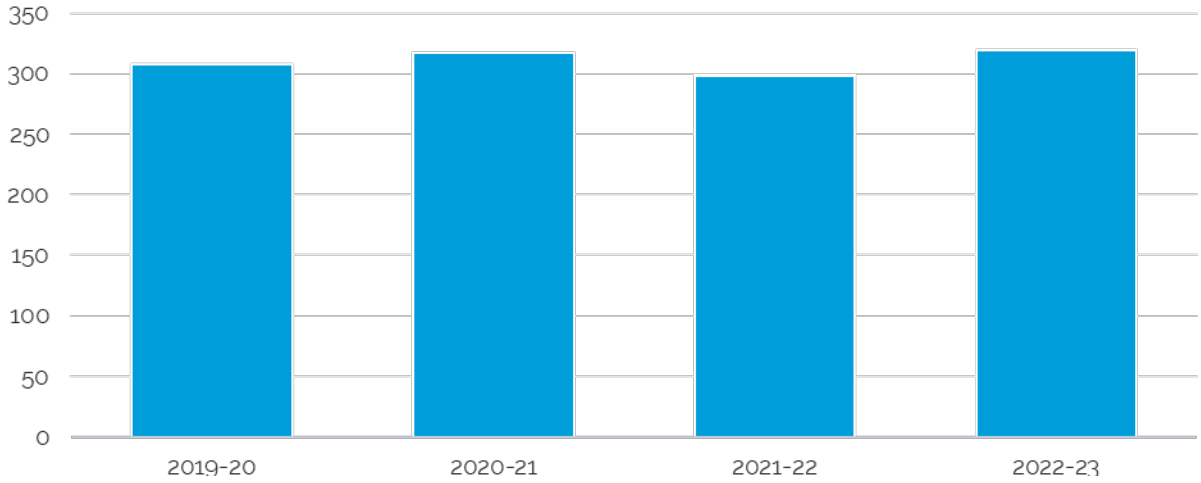
Note: Operating costs for Train services are the cost of items such as labour and maintenance. For other public transport services, we have used the contract payment to private operators by the NSW Government as the operating expense instead of the costs actually incurred by the operator. This better reflects the actual cost to Government.
Source: Transport for NSW, Information request provided to IPART.

[k] Although services were reduced at times due to impacts of driver shortages, e.g. Sydney public transport: Sydney trains to run on reduced timetable due to COVID-19 staff shortages (9news.com.au) and Temporary bus service changes | Transport for NSW January 2023.

Real costs can increase if the increase in specific input costs for transport services exceed the rate of general inflation, or services increase in frequency and/or quality. Real operating costs based on 2019-20 dollars are shown in Figure 3.5. The total number of kilometres serviced across the Opal network has remained relatively consistent over the last four years (Figure 3.6).

Public transport services are essential to many members of the community. Large shocks to patronage, such as the COVID-19 restrictions quickly reduced patronage, but adjustments to service frequency did not significantly change. Timetabling is a complex exercise, and adjusting timetables to demand requires an understanding of medium to longer term patronage patterns, mode switching and trends.

Figure 3.6 Total kilometres serviced (millions of kilometres)



Note: This figure of total kilometres also includes 'dead running' which is when the vehicle is running empty. This figure does not include ferries as they operate on service hours rather than kilometres.
Source: Transport for NSW, Information request provided to IPART.

4 How have service quality, reliability and safety performed?

All modes of transport must adhere to the Transport Legislation Amendment (Safety and Reliability) Act (2003), which is intended to ensure the reliability, quality, effectiveness, and efficiency of services.

Transport for NSW publishes a range of data across customer satisfaction measures, safety and reliability performance, and service quality indicators like on-time running.

Transport for NSW has reported that service reliability issues have led to decreased satisfaction, particularly among train and bus passengers. Additionally, increased road congestion as traffic levels increase from COVID-19 lows has negatively impacted overall satisfaction among road users.[11]

Transport performance can be affected by a number of factors. Trains may run late or be cancelled due to passenger illness, delays caused by longer dwell times at stations, severe weather conditions, train signal or track problems or overcrowding in centre carriages.

Sydney Trains has experienced some significant incidents with substantial impact on customers and network operations. The complexity of the Sydney Trains network, the nature of the current timetable, operational challenges, and crew rostering affects recovery from these occurrences.

When delays or cancellations occur, timetable modifications are made which can affect scheduled stops (skipped) to minimise the delay on future services.

4.1.1 Reliability across the Opal network

Transport for NSW has performance targets for each of its services, with On-Time Running (OTR) being the consistent indicator and measure of service reliability.

There is a punctuality target of at least 92% across its rail network during peak aiming for arrivals ≤five minutes (Sydney trains) and ≤ six minutes (NSW TrainLink). [12]

Transport for NSW indicates that if a partial or full blockage of a line is not sufficiently recovered within 30 minutes of the event it is likely to have an effect across the whole network. A radio outage on 8 March 2023 exposed this problem, with 1819 services impacted, 887 service cancellations and loss of more than 3 million customer minutes. With the outage continuing to impact morning peak services the next day.[13]

During the 2022-23 morning peak, Sydney Trains fell short of its 92% punctuality target, achieving 88.3%. 2023-24, performance improved and was 91.8%. [14]

When looking at the evening peak performance target, only the 2020-21 period has met the goal since 2018-19. The performance for 2023-24 was 85.9%. [15]

The reliability of some public transport services has been declining since 2020-21, this is shown in Table 4.1. Some of these services have also seen a corresponding decline in customer satisfaction, shown in Table 4.2. Reliability is one important way that customers experience value for money for using public transport.

Table 4.1 All modes reliability of services across the Opal network

	Minimum target	2020-21	2021-22	2022-23
Light rail services on time running (OTR)	90%	90.5	88.5	87
Metro bus service contracts on time running (OTR)	95%	97	97	96
Sydney Trains on time running (OTR)	92%	95	92	85
NSW TrainLink on time running (OTR)	92%	90	84	78
Sydney Metro on time running (OTR)	98%	99	99	99
Ferries on time running (OTR)	95%	98	97	96
Journey time reliability peak travel on key road routes is on time[a]	>90%	90	90	90

a. Note Road travel reliability measures the proportion of days where the daily average travel times were within a threshold (a five-minute variation on a typical 30-minute journey) during the combined AM and PM peak periods on 89 Greater Sydney roads.
Source: Transport for NSW, Annual report 2022-2023 Volume 1, December p 36.

Table 4.2 Customer satisfaction on public transport

	Minimum target	2020-21	2021-22	2022-23
Train services (%)	Maintain or improve	93	92	90
Bus services (%)	Maintain or improve	93	92	90
Ferry services (%)	Maintain or improve	99	98	98
Light rail services (%)	Maintain or improve	93	93	93
Sydney Metro services (%)	Maintain or improve	98	98	99

Notes: Results for ferry routes includes both Sydney Ferries and Newcastle (Stockton) Ferry networks; the Newcastle (Stockton) Ferry was first included in May 2022 and subsequent periods.
Source: Transport for NSW, Annual report 2022-2023 Volume 1, December p 35.

4.1.2 Safety standards across the transport network

The transport network must meet high safety standards and uses new technology to further enhance safety for roads, public transport, and pedestrians/cyclists.

Public transport mode share has increased as travel increases from its COVID-19 lows, though it remains significantly below pre-COVID-19 levels. Lower service reliability has led to reduced satisfaction, especially among train and bus passengers, while increased congestion has further diminished satisfaction for most road users. Over the past three years, road safety indicators improved with reduced traffic volumes.

In 2022 Sydney Trains established a dedicated Rail Safety Worker Training and Competency Project to address systemic issues, manage audit actions and to establish enterprise-wide governance (Transport for NSW and Sydney Trains) to sustainably manage training and competency issues.

In 2023 an external panel completed a review on the Sydney rail network and highlighted a range of concerns with the current performance indicators including lags in data input and inadequacies in data management.

Increased patronage once COVID-19 restrictions ceased, saw increased passenger injuries from 66 to 93 incidents in 2022-23. This remains significantly lower than pre-COVID-19 with 198 passenger injuries reported in 2019–20.[16]

5 How did we measure cost recovery?

In our Issues Paper, we noted the difficulties in defining revenue and costs for the purposes of calculating cost recovery. In different jurisdictions around the world there are varying definitions for what types of revenue and what types of cost should be included in cost recovery calculations. This means comparisons between jurisdictions may provide an inaccurate reflection of revenues, costs and cost recovery ratios.

Cost recovery calculations start with farebox revenue (ticket sales) and then jurisdictions may include additional sources of revenue. Some types of revenue that are not universally included are explicit or implicit government subsidies for discounted concession fares, other transport related revenue like charter fees and non-transport related revenue like advertising.

For the cost component the calculation starts with operating costs. Some jurisdictions may also include other costs such as depreciation of vehicles, and infrastructure costs such as, the cost of building tracks, stops, stations.[17]

In our last review, we asked The CIE to develop a methodology for measuring cost recovery for public transport services. The CIE calculated cost recoveries on both a total costs basis and an operating costs only basis. We have decided to only calculate cost recovery using operating costs, for several reasons:

- An approach that calculates cost recovery on a total cost basis relies on the use of accounting assumptions to apportion long term capital costs over an annual basis. Using accounting data raises some issues as it is not necessarily consistent over time. Public transport services are separated into several organisations, such as Sydney Trains, Sydney Metro Corporation, etc. Organisational structures and accounting practices change over time. This means that it is difficult to reconcile the accounting data across time periods.
- Our previous method included all costs associated with public transport. This includes infrastructure costs such as railway lines and stations, these costs are fixed over the long term and there is little scope for public transport operators to adjust these costs once they have been built. Infrastructure costs incurred when building a new train line or new stations should be supported by a long-term cost benefit analysis. These will usually identify significant agglomeration benefits that flow on to the rest of society. We acknowledge that in practice infrastructure costs may not always equal the actual agglomeration benefit that is provided. However, we have not tried to apportion or correct for this. Therefore, consistent with our approach to fare optimisation modelling we have excluded these costs when calculating cost recovery. This is discussed further in in our Technical Paper – Modelling socially optimal fares.
- Establishing a method that is not reliant on accounting assumptions which can change due to contract arrangements and departmental structure allow for a better comparison between fares and cost recovery over time. Cost recovery is a measurement of the balance between taxpayers and passengers. The social optimisation approach to setting fares is used to inform this balance. If the two methods are not consistent then, over time, our expectations of cost recovery may become misaligned with the actual results.

In this review we have decided to use a simpler estimation of cost recovery, using 3 different components, these are:

- Farebox revenue: This is the total amount of income received from ticket sales.
- Operating costs: For train services this is the cost of operating and maintaining services, operating costs includes items such as staff and maintenance costs. For all other modes of transport this is the contract payment paid by the NSW Government to the private operators that operate the service on their behalf. We have used the contract payment because this is what the Government, and ultimately the taxpayer, pays to run the service.
- Shared costs: This is a category of operating costs that cannot be attributed to one specific mode of public transport such as the Opal ticketing system. Each mode shares these costs and a percentage of these costs is allocated to each mode based on proportion of patronage. Other shared costs may include some departmental staff that work across modes.

Using these four components we calculate cost recovery as follows:

$$\text{Cost recovery} = \frac{Farebox\ revenue}{(Operating\ costs + Shared\ costs)}$$

In our calculation of cost recovery we have excluded capital costs. Capital costs include the purchase of land, vehicles, infrastructure, and some major periodical maintenance. Decisions about capital spending, such as where stations and wharves will be built and the routes of train, light rail and metro services are often made over the long term. This leads to agglomeration benefits for society.

Agglomeration is the idea that if more services are available in a single location, i.e. professional services, hospitality, entertainment, then they will be more efficient than if they were provided at different locations.

Infrastructure spending directly leads to agglomeration benefits, although infrastructure costs may not necessarily be equivalent to agglomeration benefits. In this review we have considered the external benefits provided by public transport.

We consider, because of the agglomeration benefits provided by long term capital spending, that it is reasonable to exclude these costs when calculating the price of fares.

We consider that major periodical maintenance of infrastructure and vehicles should be included in the cost recovery calculation as these are directly related to facilitating the journeys of passengers.

Our calculation of cost recovery only included revenue from fares, we excluded other sources of revenue such as advertising or compensation for concession discounts. These other sources are important in promoting the overall financial performance of the public transport network. However, our calculation of cost recovery is focused on how much passengers pay and our measurement of the sustainability of the public transport network is based on this figure. We choose to calculate cost recovery this way as it provides an indication of financial performance while ensuring the impact on passengers remains clear. If other sources of revenue were included in the calculation the impact on passengers would be less clear.

This is a simple method of estimating cost recovery. This method does rely on Transport for NSW and the public transport operators being consistent with categorising costs as either operating, capital or shared. However, we consider that the simplicity of this approach promotes transparency for passengers and the community about how their fares and taxes pay for public transport.

6 Financial performance after COVID-19

Cost recovery has declined over the last four years due to the ongoing effects of COVID-19. A reasonable measurement of the financial performance of the public transport network should consider the impact of external factors. We consider that it would be unreasonable, up to 2023-2024, to compare financial performance to pre-COVID-19 standards.

We can improve the financial performance of public transport services by increasing maximum fares.[l] However, in response to increased fares, some passengers may choose to use alternative methods of transport or choose to not travel at all. We are also required to consider the affordability impact of our fare setting decisions, raising fares too much can have a significant financial impact on passengers. Fares need to balance the financial needs of the public transport network and the affordability of ratepayers, among other factors.

We have investigated what level of financial performance could be expected under different fare scenarios. We provided Transport for NSW with fare scenarios and asked them to model the impact on their expected revenue, using their detailed patronage patterns and existing fare rules[m]. We also included an assumption of passenger elasticity. The scenarios were:

- Scenario 1: Current fares (which are below the maximum)
- Scenario 2: Maximum fares under our 2020 determination
- Scenario 3: Maximum fares as set out in our Draft Determination
- Scenario 4: 20% increase on current fares.
- Scenario 5: Double the increase in fares between Scenario 3 and Scenario 1 (an increase of about 22%)

Modelling revenue alone is not enough to understand the financial performance of the public transport network. New services, such as the Metro, have increased the costs of public transport services. Revenue that is comparable to pre-COVID-19 (in real terms), will not produce the same level of financial performance, due to the cost of extra services. Costs can also increase if services are offered more frequently. For example, Transport for NSW is currently undertaking the 'More Trains, More Services' program which has introduced 41 new trains and 1,700 more services per week compared to 2017 as of April 2024.[18]

We have made several assumptions for the forecasts of financial performance. We have assumed the following:

- 3% annual growth in revenue each year in real terms. This represents growth from increasing patronage.
- An increase in costs each year. We received annual cost forecasts from Transport for NSW. We estimated the increase in annual costs each year by taking the midpoint of increases forecasted by Transport for NSW and actual increases over the last two years.

[l] Transport for NSW is not required to set fares at the maximum price. Transport for NSW can set fares lower than our maximum.

[m] The modelling was based on fare revenue for 1 week in March 2024.

- A forecast of the Consumer Price Index (CPI). The cost information from Transport for NSW included adjustments for inflation, this required us to inflate revenue by inflation each year to ensure our comparisons were equal.
- An elasticity assumption of -0.34, which means that for a 10% increase in fares we would expect to see a 3.4% decrease in trips taken. We arrived at this assumption by taking the midpoint of elasticity of train and bus services.

Using these assumptions and the revenue modelled under the different fare scenarios we calculated cost recovery over the next 2 years. Table 6.1 shows that under our draft determination, cost recovery in 2024-25 would be 24.2% but would slightly fall in 2025-26. This ratio of cost recovery is in line with the 25% we calculated for 2019-20. However, it should be noted that the last quarter of 2019-20 was also impacted by COVID-19 and this does not necessarily represent a recovery to pre-COVID-19 financial performance.

The cost recovery ratio presented for Scenarios 4 and 5 is only slightly higher than the cost recovery presented in Scenario 3, despite these Scenarios having a much larger increase in fares. This is due in part to the impact of elasticity, as fares increase passengers may choose alternative methods of travel. It is also partly due to the impact of the current fare structure which involves daily and weekly caps. When modelling increases in fares the discount and concession structure (which includes daily and weekly caps) was not modified. This shows that even when single fares increase, caps limit the total increase in revenue received by Transport for NSW.

Table 6.1 Cost recovery under different fare scenarios

Scenarios	2024-25	2025-26	2026-27	2027-28
Scenario 1	23.8%	23.1%	22.5%	21.7%
Scenario 2	24.1%	23.4%	22.8%	22.0%
Scenario 3	**24.2%**	**23.5%**	**22.9%**	**22.1%**
Scenario 4	24.5%	23.7%	23.1%	22.3%
Scenario 5	24.5%	23.8%	23.1%	22.3%

Note: Scenario 3 represents the fares set out in our Draft Determination.
Source: Information request from Transport for NSW, IPART analysis.

Scenarios with higher fares show that cost recovery will improve more quickly. However, financial performance is not the only factor that we are required to consider when setting maximum fares. We consider that Scenarios 4 and 5 would be less affordable for passengers. We discuss the impacts of our draft fares on passengers further in our Information Paper - Affordability.

7 How efficient are public transport services?

In some previous reviews we have conducted efficiency/productivity studies of public transport services. In 2016 we engaged a consultant to undertake an efficiency review, this involved breaking down activities into their components, identifying the costs associated with each component and considering how these costs compare with costs or other operators that provide similar services.[19]

For this review of fares we have decided not to try to assess the change in efficiency or engage a consultant to undertake a new review. Calculating the efficiency of public transport services in the years disrupted by COVID-19 will be difficult. The disruptions created volatility for some of the outputs of public transport, such as passenger trips and passenger trip kilometres. At the same time outputs such as vehicle kilometres travelled were not significantly impacted. This means that the output chosen to measure efficiency will have a considerable impact on the results. This uncertainty means that an in-depth analysis of efficiency would be unlikely to produce insightful results.

Despite the uncertainty created by COVID-19 disruptions, there is some value in calculating the cost to produce[n] and the revenue received from several public transport outputs. These metrics provide trends over the past four years and a benchmark for future reviews. This will allow us in the future to understand post-COVID-19 trends and outline the recovery of public transport services, including any distinct phases of recovery.

If the cost of producing outputs increases over time in real terms, then this is an indicator that the public transport service may be becoming less efficient. Both the cost of the output and the revenue it generates are required to understand the impact on efficiency.

External factors can impact public transport outputs and costs or revenues. When comparing the results across years it is important to consider whether changes may have been influenced by external factors and if so, how much of the changes was attributable to these factors.

Table 7.1 Factors that influence cost recovery measures

Measurement	External factors
Revenue in real terms	• If the consumer price index (CPI) is increasing faster than fares, then revenue in real terms will decline.
Cost in real terms	• If inflation for costs specific to public transport such as labour and materials are increasing faster than CPI then costs in real terms will increase. • Costs can increase or decrease depending on how the frequency of services changes.
Passenger trips	• COVID-19 disruptions and subsequent cultural shifts such as working from home. • Changes in the population of the Opal network
Passenger kilometres	• COVID-19 disruptions and subsequent cultural shifts such as working from home. • Changes in the population of the Opal network • Changes in population distribution in the Opal network, i.e. proportion of people living in suburbs further away from the CBD.

[n] We have measured the cost of producing outputs as the operating cost plus shared costs. We have used this for consistency with our approach to calculating cost recovery.

Measurement	External factors
Vehicle kilometres	• Timetable changes that impact the frequency of services

We calculated real costs and revenues per service kilometre or vehicle service hour. This measure is less susceptible to the issues of volatile patronage. It also accounts for increased costs that may occur due to new services being added to the network as these new service km and service hours are additional outputs of the increased costs. Therefore, this measure may provide better insight into the relative efficiency of operating the public transport network over time.

Real costs per service kilometre appear to have increased for all modes of public transport. Potential cost pressures include additional costs which may have been required over the COVID-19 impacted years (such as higher frequency cleaning, more signage, additional PPE for staff and etc). or costs can rise as efficiency declines. Further, changes in cost and funding structures can alter the analysis of efficient delivery of services. A detailed efficiency study would be required to make confident assessments about efficiency gains/losses over this period.

Revenue per timetabled service kilometre is impacted by usage of the public transport service. In other words, if a train has 500 compared to 50 people on board the revenue generated per kilometre travelled will be approximately 10 times greater, but the revenue per passenger trip will be the same.°

Revenue per timetabled kilometre has declined in real terms for trains and buses but has increased light rail (Table 7.2). This is likely due to changes in patronage for each mode. Patronage in 2022-23 was lower than it was in 2019-20 for trains and buses due to ongoing shifts in travel patterns initially caused by COVID-19. Light rail patronage was also disrupted by COVID-19, but because new services opened in 2019-20, patronage had increased by 2022-23.

Ferry revenue is based on revenue per hour the ferry is in service. Revenue has increased by service hour in real terms likely because patronage on ferries is higher in 2022-23 than it was in 2019-20. This may have been influenced by the increase in the number of ferries in service from 36 to 42 over the same period.

Table 7.2 Cost and revenue per timetabled service kilometre/hour by mode ($2019-20)

Cost per service km or cost per vehicle service hour ($2019-20)[a]

	2019-20	2020-21	2021-22	2022-23
Sydney Trains[a]	$12.04	$11.86	$13.30	$14.56
NSW TrainLink[a]	$8.22	$7.73	$9.91	$10.55
Sydney Light Rail[a]	$1.70	$5.04	$4.62	$3.77
Sydney Ferries[b]	$1,498.14	$1,593.37	$1,773.30	$1,432.03
Bus[a]	$6.85	$6.76	$7.04	$6.79

° Assuming each passenger pays the same fare and is making the same trip i.e. an Adult card holder travelling 10 kilometres.

Revenue per service km or revenue per vehicle service hour ($2019-20)

	2019-20	2020-21	2021-22	2022-23
Sydney Trains[a]	$3.18	$2.09	$1.46	$2.59
NSW TrainLink[a]	$0.79	$0.48	$0.31	$0.62
Sydney Light Rail[a]	$0.74	$0.42	$0.46	$0.86
Sydney Ferries[b]	$375.88	$233.13	$229.78	$474.48
Bus[a]	$1.85	$1.16	$0.88	$1.47

a. For Train services the output is carriage service kilometres, for light rail and buses the output is vehicle service kilometres

b. For ferries the output is timetabled hours not timetabled kilometres.

Note: Sydney Trains and NSW TrainLink underwent some cost and funding restructuring over the determination period. TAHE access and licence fees were introduced as operating costs part way through the financial year 2021-22. Sydney Trains and NSW TrainLink receive specific funding for these costs.

Note: Newcastle Bus and Light Rail services and the Newcastle Ferry are not included in these calculations.

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6 Transport for NSW, November 2023 Fare Compliance Survey Results, February 2024, p 1.
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18 Transport for NSW, More Trains, More Services, April 2024.
19 IPART, Technical Paper – Productivity, February 2020, p 1.