IPART Independent Pricing and Regulatory Tribunal | NSW

Maximum Opal fares until July 2028

Patronage

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:

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

This is version 2 of this document. A correction was made to the original document as per the revision table below.

Table 1 Revision table:

Date	Revision	Notes
16 August 2024	1	First publication
30 August 2024	2	Corrections made to Table 2.1

1 Why is patronage important for our review of maximum Opal fares?

This Information Paper discusses the expected patronage of public transport services, within the Opal network, over the 2024-2028 determination period. Patronage represents the demand for public transport services and is impacted by the price of fares and several factors some of which are external to the transport network such as population growth.

Accurately forecasting demand is a difficult process because of the numerous factors that influence passengers' use of public transport. This difficulty is greater during this review period because of the volatility of patronage experienced by the public transport network in the last several years due to the COVID-19 pandemic and the shifts to increased working from home that followed. There are also new services coming online, and some planned service interruptions during the determination period which could change travel behaviour in a new way for some communities.

A forecast of patronage is important for this review because we are required to estimate the impact that our fare determination will have on the financial performance of the Opal network. The measurement of financial performance compares the revenue Transport for NSW will receive from fares to the cost of providing public transport services. This measurement is affected by both the price of fares and the number of passengers using the network.

Forecasts of patronage are also important when designing the public transport network and planning new services, lines, stations, stops and wharves within the network. However, this work is outside the scope of IPART's review and the NSW Government agencies responsible for these decisions will likely formulate their own projections of patronage.

The specific issues that are discussed in this information paper include:

- The impact of COVID-19 and shifts in working from home on patronage.
- How existing travel patterns impact patronage.
- The impact of several additional factors on patronage including:
  - New public transport services
  - Population growth
  - Customer satisfaction
  - Capacity during peak hours
  - New technology
- The link between patronage and financial performance.

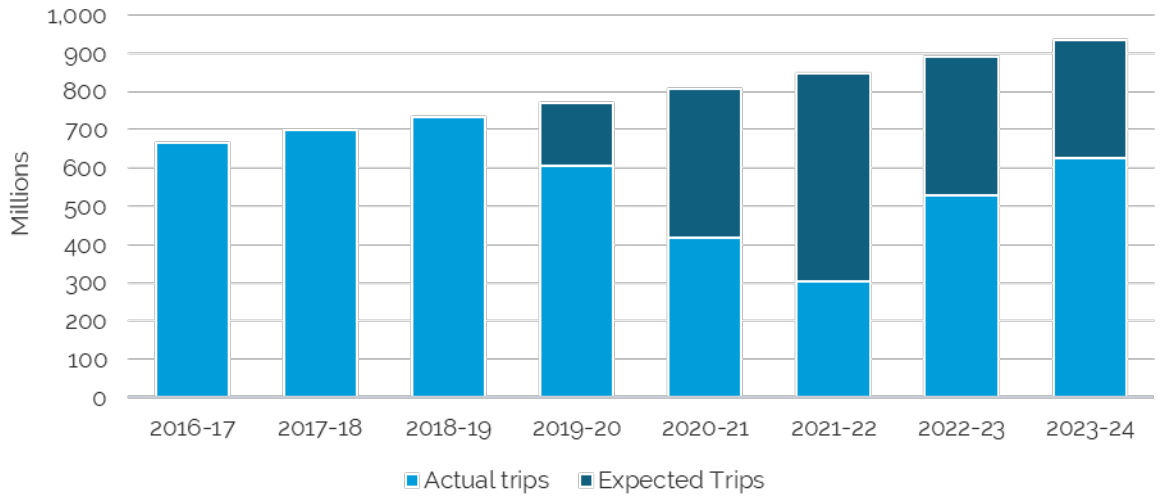
2 How has COVID-19 impacted patronage?

The COVID-19 pandemic impacted the patronage of public transport services over the last four years, 2019-20 to 2022-23. There were significant decreases in public transport patronage from 2019-20 to 2021-22 due to restrictions on movement. Patronage started to recover in 2022-23 as restrictions ended. In 2023-24 there were about 627 million trips on public transport compared to about 733 million in 2018-19.[1]

Our last review of maximum Opal fares found that average annual growth in patronage was around 5% per year over the 3-year period between 2015-16 and 2018-19.[2] Population growth was around 2% on average over this period.[3] When setting maximum Opal fares in 2020 for the period between 2020 and 2024 we assumed that 5% annual growth would continue. However, this did not occur, because of the impacts of COVID-19.

Figure 2.1 shows the difference between actual and expected public transport trips, highlighting the disruptions caused by COVID-19.

Figure 2.1 Actual annual public transport trips compared to forecast trips (millions)



a. The number of expected trips assumes a 5% annual growth each year.

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

The COVID-19 restrictions implemented by the NSW Government in March 2020 and June 2021 restricted travel for non-essential activities and led to a significant decline in public transport patronage. Increased uptake of working from home and remote learning reduced the need for commuters and students to travel. Social gatherings and other activities were also restricted and resulted in less reasons to travel. This led to decreases in total trips observed in 2019-20, 2020-21 and 2021-22 and across all Opal card types.[4]

Table 2.1 shows the annual percentage change in trips for each mode over the last four years. It shows that the change in patronage has been extremely volatile in comparison to the growth experienced prior to the pandemic.

Table 2.1 Changes in Opal network use by mode

	Average annual change 2015-16 to 2018-19	Annual percentage change					Average annual change 2018-19 to 2023-24
		2019-20	2020-21	2021-22	2022-23	2023-24	
Train	+4.6%[a]	-22%	-34%	-28%	+71%	+21%	-5%
Bus	+5.2%	-18%	-31%	-28%	+68%	+15%	-5%
Light rail	+5.6%	+28%	+33%	-13%	+117%	+25%	32%
Ferry	+0.2%	-25%	-43%	-3%	+112%	+30%	3%
Metro	-	843%	-25%	-25%	+85%	+18%	63%
Total	**+4.8%**	**-18%**	**-31%**	**-27%**	**+73%**	**+19%**	**-3%**

a. Includes metro.

Source: IPART, Technical Paper – Patronage and elasticity estimates, February 2020, p 2 and Transport for NSW, Opal Trips – All Modes, accessed July 2024, IPART calculations.

Total Opal trips for the year 2023-24 were 86% of trips in the last full year not impacted by COVID-19, (2018-19).[5] Recovery was observed across all modes and card types, though most pronounced for Adult/Contactless payments (91% of pre-COVID-19 levels) and Gold Opal cards (84% of pre-COVID-19 levels).

We expect that the travel patterns for some Adult Opal cardholders have been altered by working from home arrangements, but there has been a gradual decrease in hours worked from home since the end of COVID-19 restrictions. This is discussed further in Section 2.3.

Over the determination period we expect patronage will be impacted by:

- Shifting travel preferences in the post-COVID-19 environment: Our analysis shows that trips made using public transport as a share of total trips has fallen in the post-COVID-19 environment.
- Population growth: The population of Sydney and surrounding areas experienced lower than average population growth during the years impacted by the pandemic. However, the Greater Sydney Area is expected to grow by about 1.2% on average for the next four years.[6]
- New services: Investment is being made in the public transport network to provide additional capacity and introduce services in new areas. This could increase patronage as services become more convenient, accessible to new areas and more frequent.

2.1 What methods did we consider using to forecast patronage?

In previous reviews we based our estimate of patronage growth on the historical growth of patronage. However, COVID-19 has caused major disruptions to the public transport network and patronage is still recovering. It is not yet clear if we can consider that the volatility in patronage has stabilised or if it will continue to recover towards historical levels. We may continue to observe annual patronage increases that are greater than the historical long-term average for another year or more. Therefore, we considered different methods to estimate patronage over the 4 years of our determination period.

These included:

- Creating a long-term estimate (i.e. 10 years) instead of a shorter-term estimate.
- Using the 5% annual growth experienced prior to COVID-19 plus an additional factor for short term volatility over the next 1-2 years.
- Basing our estimate of patronage growth on a separate factor such as population growth.

Based on these estimates we expect patronage to grow up to 5% a year over our determination period. However, due to the ongoing disruptions caused by COVID-19 we have set our forecast of patronage as a range between 1.2-5%. The lower bound of our range comes from the forecasted population growth of the Greater Sydney area which is 1.2%[a]. We expect that growth will be faster during the first years of our determination period as the system continues to recover from COVID-19.[b] Below we discuss the findings of each of these methods as well as the uncertainty within each method.

Long term estimate of historical patronage growth.

Our preferred methodology in previous reviews has been to forecast patronage using historical growth. In our last review we measured patronage growth over a three year period to help inform our forecast of patronage. We still consider that this was a suitable methodology for forecasting patronage growth. However, the considerable volatility caused by COVID-19 makes it difficult to reliably estimate future patronage growth when only using the last 3 years of historical data. This issue could be resolved by measuring patronage over a longer time period, but this creates an issue of collecting data that is consistent across long time periods.

Consistent patronage data is available from 2016-17 onwards, which is not long enough to establish a robust long-term estimate of historical growth. The average annual growth rate from 2016-17 to 2023-24 is -0.9%. We do not consider that this will be representative over our determination period and therefore we have not considered this figure in our forecasts of patronage.

Using a pre-pandemic growth factor

In our previous review we estimated that patronage would grow at 5% per year. We could use this previous estimate of patronage growth to forecast future growth. We have forecasted patronage growth under two scenarios.

The first scenario assumes no further recovery from the pandemic disruption and patronage grows at 5% per year from 2023 for the remainder of the determination period.

The second scenario assumes the first two years in the determination period continue to experience some further post-COVID-19 recovery above the 5% growth then for the rest of the determination period patronage grows at 5% per year. Under this scenario the average annual growth rate is equal to 8.8% over the determination period of 2024-25 to 2027-28.

[a] Prior to COVID-19 population growth was forecast to grow at about 2%.

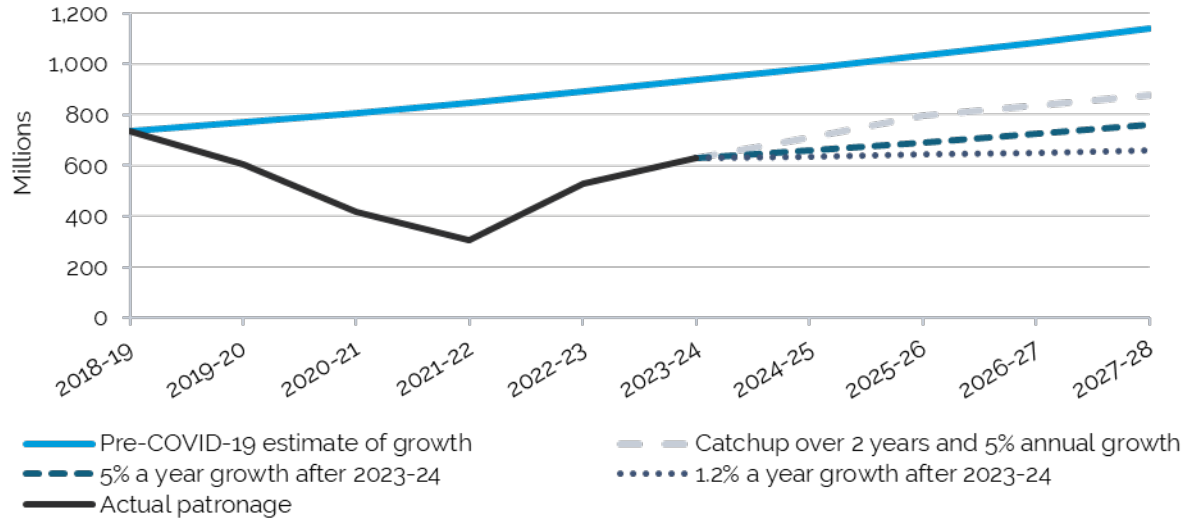
[b] It is worth noting that the patronage growth in 2023-24, which is likely to be larger, is in the determination period for our previous review, not in the determination period for the current review.

The second scenario assumes that patronage will quickly recover to pre-COVID-19 levels. It is possible that this recovery may not occur in the short term, and that current patronage represents a new baseline for future growth.

A third scenario is that patronage will grow by 1.2% a year, this is the lower bound of our estimate based on forecast population growth. The modelling is discussed further below.

These scenarios are shown in Figure 2.2, also shown is the estimate of patronage growth prior to COVID-19.

Figure 2.2 Estimate of future public transport patronage (millions of trips annually)



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

A more unlikely scenario would be that patronage recovers to not only pre-COVID-19 levels, but the pre-COVID-19 estimates of future patronage growth. In other words, patronage grows to match 5% a year since 2018-19. This would require significant increases in patronage until 2027-28 equivalent to an annual growth rate of 16%. This is unlikely, but it highlights that even with significant recovery to patronage there will be long lasting impacts due to missing the expected growth in patronage.

Using a factor such as population growth

An alternative is to calculate patronage growth based on a factor such as population growth which is already measured, published and forecasted. In 2018-19 there were over 6.4 million people in the area covered by the Opal network[c] and more than 733 million trips were taken on public transport, a ratio of about 114 trips per person. This ratio of trips to population decreased during the years impacted by COVID-19 but has since started to recover. This is shown in Table 2.2.

The NSW Planning projections estimate that the area served by the Opal network will increase to 6.7 million people by 2025-26[7], which is two years or halfway through our determination period.

[c] Greater Sydney, Newcastle and the Hunter, the Central Coast, Blue Mountains and the Illawarra

If the pre-COVID-19 ratio of trips per person (114) occurred over the next two years this would lead to over 769 million trips in 2025-26, compared to the 627 million trips taken in 2023-24, an average annual increase of 10.7%. If the ratio of trips per person in 2023-24 (96 trips) remained consistent then trips taken in 2025-26 would be 643 million, an average annual increase of 1.3%.

Table 2.2 Trips per person in the Opal network

	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Population	6,409,866	6,481,063	6,475,761	6,475,507	6,502,288	6,555,638
Trips	733,115,627	604,799,130	416,788,843	304,418,208	527,040,480	627,142,406
Trips per person	**114**	**93**	**64**	**47**	**81**	**96**

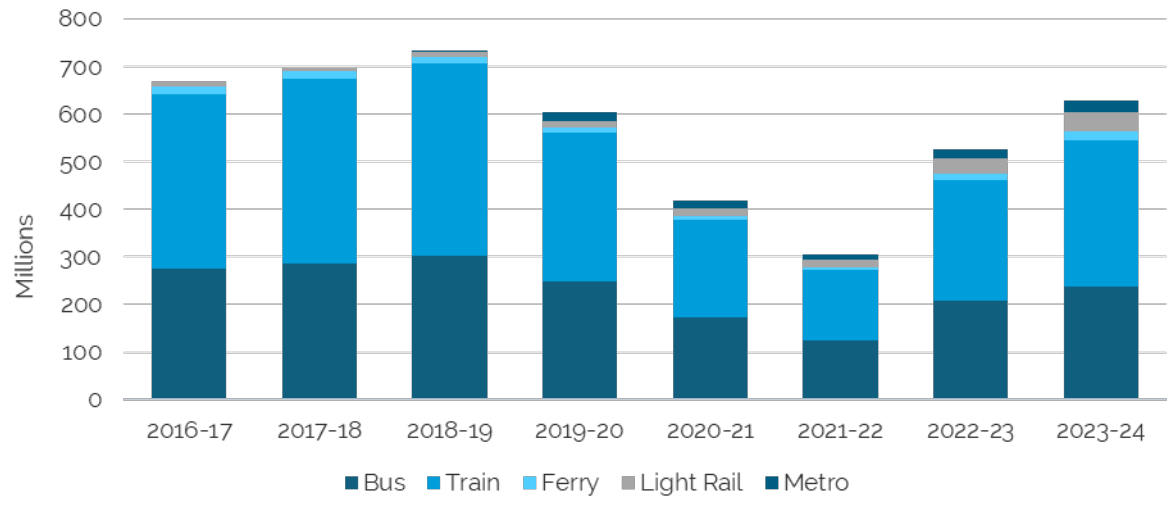
The issue with this method is that patronage growth is not solely attributable to population growth and can be caused by current members of the community increasing their trips on public transport.

Table 2.2 shows that a small change in the number of trips per person can impact the total number of trips on public transport. This leads to a wide range of estimated patronage growth based on this method. We expect that patronage growth will be more moderate. The increase in the number of trips per person has started to slow and the increase will likely be smaller next year.

2.2 What were patronage growth estimates before COVID-19?

In our last review, we found that patronage was growing at about 5% a year and we expected this to continue over the determination period. This was based on the historical patronage growth that had been observed in the years leading up to that review. Figure 2.3 shows the total annual patronage since 2016-17 by mode and shows that patronage was increasing before a significant decline in the years after 2018-19.

Figure 2.3 Annual patronage (trips) since 2016-17 (millions)



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

2.2.1 Why was patronage growing from 2014-15 to 2018-19? Would this have continued?

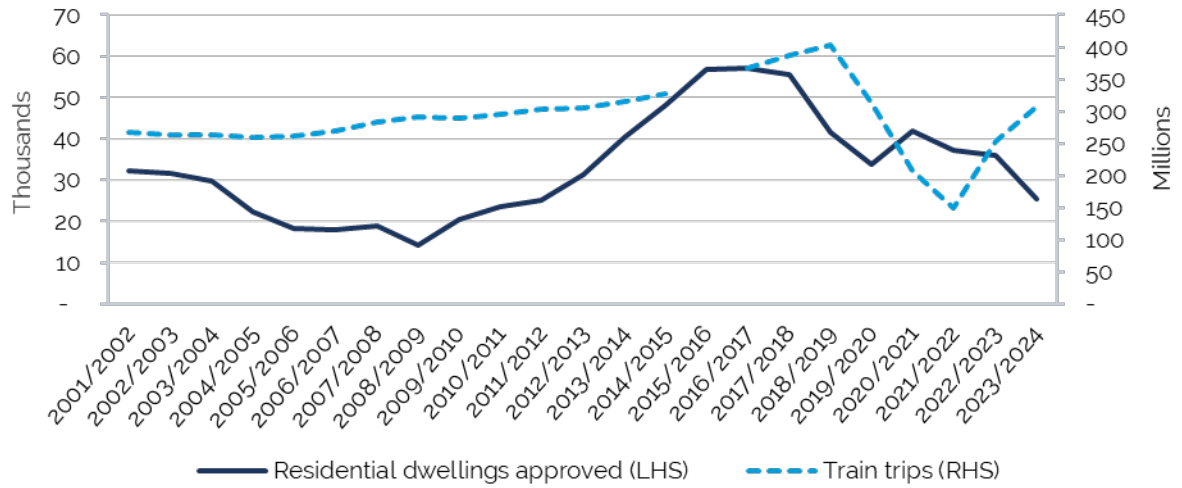
Prior to COVID-19, patronage was growing steadily, this led us to forecast a growth rate of 5% per year in our previous review. In this section we discuss two factors that influence growth and whether it would have continued if not for the impact of COVID-19.

Residential development

The Tourism & Transport Forum, a peak body representing Tourism, Transport and Aviation sectors, reported that the growth in rail patronage in Sydney was linked to increased residential development in the Greater Sydney Area and a growing demand for airport services.[8] Some key areas for growth include Sydney Olympic Park and Western Sydney. At the time, the NSW Government expected this trend to continue and projected that the T1 Western Line would reach full capacity by 2030, serving a growing population in western Sydney.[9]

Figure 2.4 shows that the number of new residential dwelling approvals increased beginning in 2009. It also shows that the trend had levelled off prior to the COVID-19 pandemic, and that in the years after the start of the pandemic the number of new developments per month has decreased. With an appropriate time lag to account for construction, the increase in dwelling approvals was reflected in the increase in train trips between 2014-15 and 2018-19, during this period trips increased by about 23% in total. However, following COVID-19 it appears that the relationship between dwelling approvals and train trips is much less correlated. COVID-19 restrictions played a large part in disrupting the relationship between approvals and train trips, but other factors could have also impacted this relationship. Other factors could include changes in construction times or costs, new working from home arrangements, residential approvals shifting to areas without reliable public transport services, etc.

Figure 2.4 Residential dwelling approvals (Greater Sydney) & Annual Train trips



Note: 2015-16 has no data for Train trips. The years before 2015-16 were sourced for a previous review from the Bureau of Transport Statistics. The years after 2015-16 were sourced from publicly available data on Opal trips. There are some sources available for 2015-16 rail patronage, but these sources use a different methodology that may not provide an accurate comparison across years.
Source: ABS, Building Approvals, Australia, March 2024, Bureau of Transport Statistics, Rail Patronage, March 2015, Transport for NSW, Opal Trips – All Modes, accessed July 2024.

It should also be noted that residential approvals do not necessarily lead to an increase in the housing supply or the population of an area. Further, a residential approval may not be constructed for a number of reasons. These factors somewhat limit the comparability between residential approvals and public transport trips.

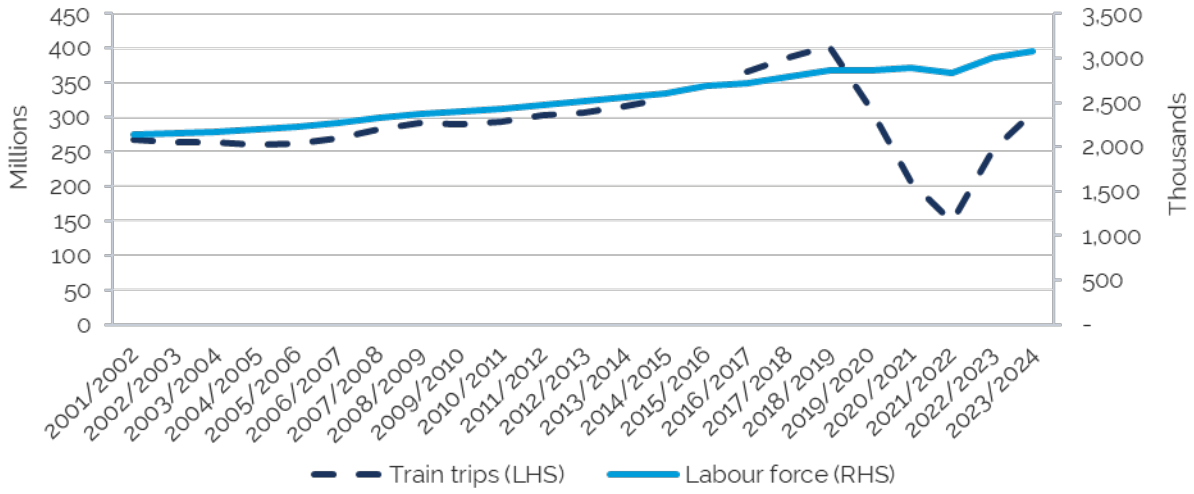
Sydney was also experiencing significant increases in congestion and travel times during the same period. It is likely that as more residential developments were approved and built this was further adding to congestion and longer travel times. This would have been exacerbated for new developments further away from the CBD. The Transport and Tourism forum reported that from 2008 to 2016 the average annual increase in congestion levels was 4.2%.[10] It is likely that the impacts of COVID-19 caused significantly less congestion due to restricted travel.

Congestion and construction are both linked to population growth. Without the significant impacts on immigration caused by the COVID-19 pandemic, it is plausible that the estimated 5% annual increase in patronage would have continued from 2019-20 until today.

Labour force

The size of the labour force also had a strong relationship with public transport trips prior to COVID-19, this is shown in Figure 2.5. A growing labour force is historically an indication that train trips will also increase. However, with the increase in working from home arrangements this relationship may be weaker in the future.

Figure 2.5 Labour force of Greater Sydney



Note: 2015-16 has no data for Train trips. The years were sourced for a previous review from the Bureau of Transport Statistics. The years after 2015-16 were sourced from publicly available data on Opal trips. There are some sources available for 2015-16 rail patronage, but using different methodology that may not provide an accurate comparison across years.
Source: Transport for NSW, Opal Trips – All Modes, accessed July 2024. Bureau of Transport Statistics, Rail Patronage, March 2015, ABS, Labour force status by State, Territory, Greater capital city, rest of state and sex, accessed July 2024.

2.3 How did COVID-19 impact different groups of passengers?

There are several different types of passengers who use the public transport network. These can be separated based on the type of Opal card used. The Opal card types are:

- Adult.
- Gold (senior/pensioner).
- Concession.
- School student.
- Child/youth.
- Other (e.g. free travel).

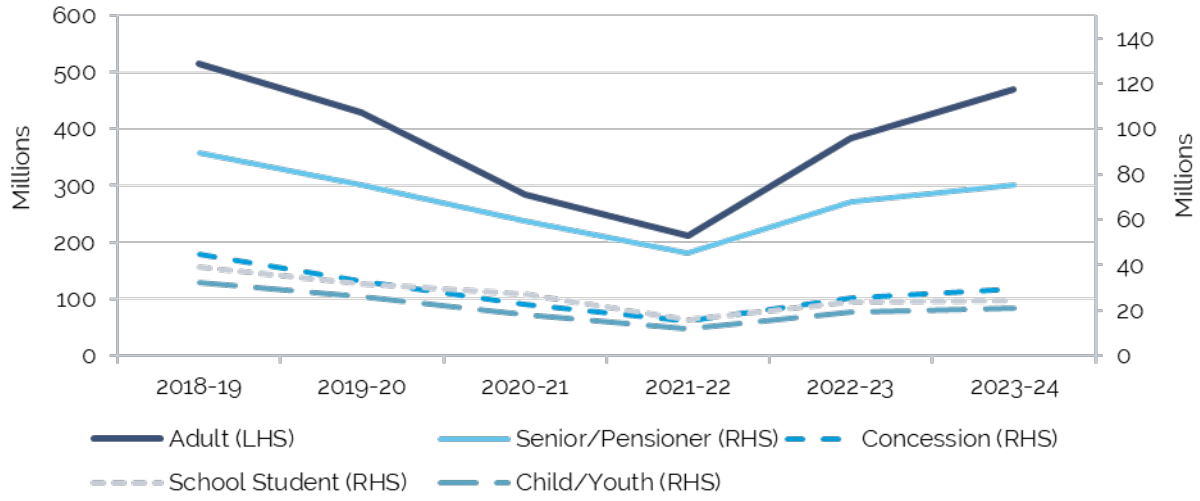
Passengers can also pay using contactless payments (CTP) for which they are charged the price of an Adult fare. For the purposes of our analysis, we have combined Adult Opal card users with CTP users, because these passengers receive the same travel benefits.[d]

In 2023-24 Adult Opal card holders were the majority of passengers, 75%. While senior/pensioner passengers were 12%, concession passengers were 5%, school students were 4%, child/youth were 3% and other passengers were 1%.

We examined how patronage changed in response to COVID-19 restrictions and after they were eased by card type. We found that from the highest level of patronage in 2018-19 to 2021-22 Opal travel declined for all card holders significantly due to the impact of COVID-19 restrictions. This is shown in Figure 2.6.

We also observed that in the 2 years from 2021-22 to 2023-24 all groups increased their level of travel on the Opal network, as travel restrictions eased. Adult and senior/pensioner passenger travel has now risen to nearly 91% and 84% respectively of 2018-19 patronage. Concession, school student and child/youth passengers have recovered significantly since 2021-22, but patronage from these groups is only about 63-66% of 2018-19 levels.

Figure 2.6 Public transport trips by Opal card type



Note: Adult opal card includes contactless payments.
Source: Transport for NSW, Opal Trips – All Modes, accessed July 2024.

[d] Contactless payments have become a popular payment method for public transport. In 2022-23 almost one third of all trips were paid for by using a card or device able to make contactless payments.

Travel on public transport is currently 8% of all trips made, before COVID-19 it was used for 11% of trips.[11] This could be due to a reduced need to travel for journeys previously completed by public transport, (e.g. because they work from home), or that passengers have shifted their travel to other modes of travel, such as driving or active transport.

2.3.1 How do working from home patterns impact patronage?

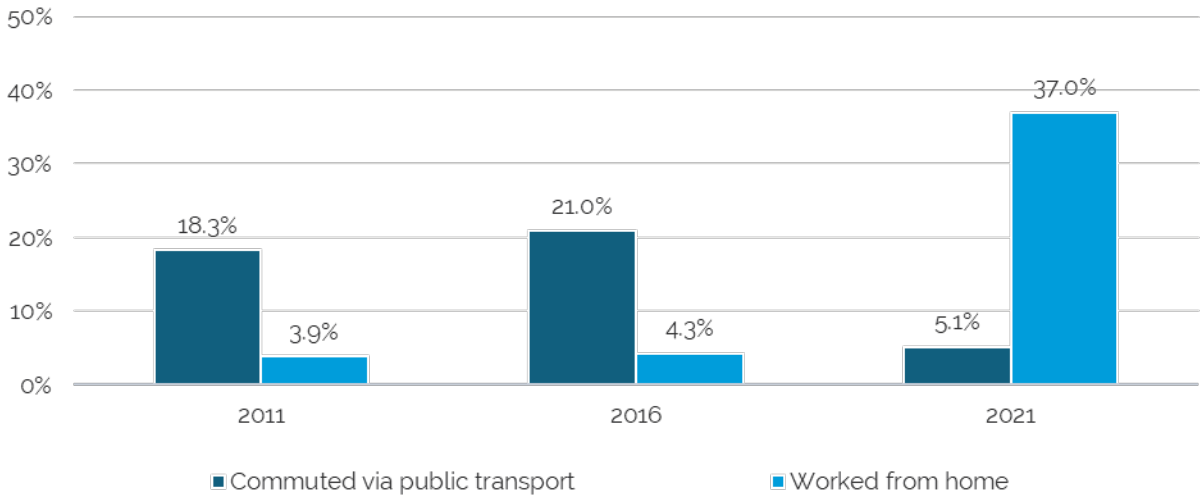
One of the key benefits of public transport is that it can transport people to a central location with less congestion (and therefore more efficiency) than if those people each used private transportation. In the Opal network this includes key economic areas such as the economic corridor from Macquarie Park to Sydney Airport (which includes the Sydney CBD) and the Parramatta CBD.

However, the travel patterns of some transport users who commute to these areas were significantly impacted by the COVID-19 restrictions. While travel restrictions are no longer in place, travel patterns have not returned to pre-COVID-19 levels. It is likely that flexible working arrangements will continue to impact travel patterns over the four years of our determination period, and potentially much longer than that. Therefore, it is important that maximum Opal fares are set with consideration of potentially changing demands of public transport, to ensure fares are efficient and support the fare setting objectives.

Commuting as a purpose of travel has declined since 2018-19 from 3,670,000 trips on an average weekday to 2,533,000 in 2022-23, across all modes of transport.[12] It is likely that this has also affected trips on public transport to a similar extent.

Figure 2.7 shows how people across the Opal network travelled to work on the 2011, 2016 and 2021 census days. It shows public transport commuting and working from home becoming more popular from 2011 to 2016. However, it then shows a significant decrease in public transport travel in 2021, mirrored by a significant increase in the proportion of people working from home. This highlights both how important public transport is to commuters and how significantly patronage was impacted during the COVID-19 restrictions.

Figure 2.7 Method of travel to work in NSW on Census day



Note: This data is for all of NSW and therefore includes people that live outside of the Opal network.
Source: ABS, Census 2011 Method of Travel to Work by Sex, accessed April 2024, ABS, Census 2016 Method of Travel to Work by Sex, accessed April 2024, ABS, Census 2021 Method of Travel to Work by Sex, accessed April 2024.

The University of Sydney's Institute of Transport Logistics' most recent survey of transport opinions found that about 26.3% of commuters travelled to work using public transport.[13] This figure is based on people who travelled to work and excludes those working from home. Together with historical Census data this indicates that it is reasonable to expect that 20-25% of commuters use public transport to get to work.

Using this figure, we can estimate the ongoing shifts patronage caused by working from home arrangements.

In 2018-19 on an average school day there were about 3.67 million commuting trips in NSW across all modes of transport (private, public and active). In 2022-23 there were about 2.53 million.[14] This is 1.14 million less trips undertaken for the purpose of commuting.

Of the 1.14 million trips fewer commuting trips undertaken, we would expect that 25% or 284,000 of these trips would have been undertaken using public transport. If these trips did occur then public transport trips (for all purposes) on an average school day in 2022-23 would have increased from about 1.76 million[15] to 2.04 million, an increase of about 16%.[e]

It is important to also consider how often workers commute and how often they work from home. Current academic research suggests about 21% of hours worked in NSW are not in the principal place of work (such as the home or a satellite office).[16] Although it should be noted that only about 61%-68% of working days are worked entirely in the main office.[17] Transport for NSW's Strategic Transport Model currently assumes that workers work about 2 days a week from home. We discuss the research on changing patterns of work in Australia is shown in Box 2.1.

[e] These figures are based on the Household Travel Survey.

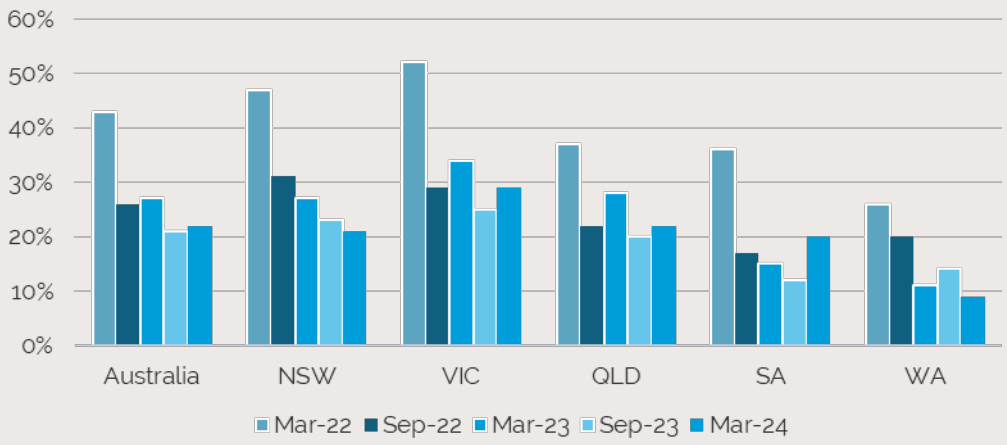
Box 2.1 Research on changing patterns of work in Australia

The University of Sydney's Institute of Transport and Logistics Studies conducts a biannual Transport Opinion Survey of 1,000 adults. Their sample is designed to be representative of Australia's population distribution and demographic characteristics.

The most recent survey was conducted in March 2024. The survey found that 22% of working hours were worked from home across Australia, this was consistent with the 21% reported in September 2023.

Figure 2.8 shows the proportion of days worked from home over a two week period. This shows that overall working from home has declined since March 2022. NSW still has higher working from home rates than Queensland, South Australia or Western Australia.

Figure 2.8 Average percentage of days worked from home in the last 2 weeks



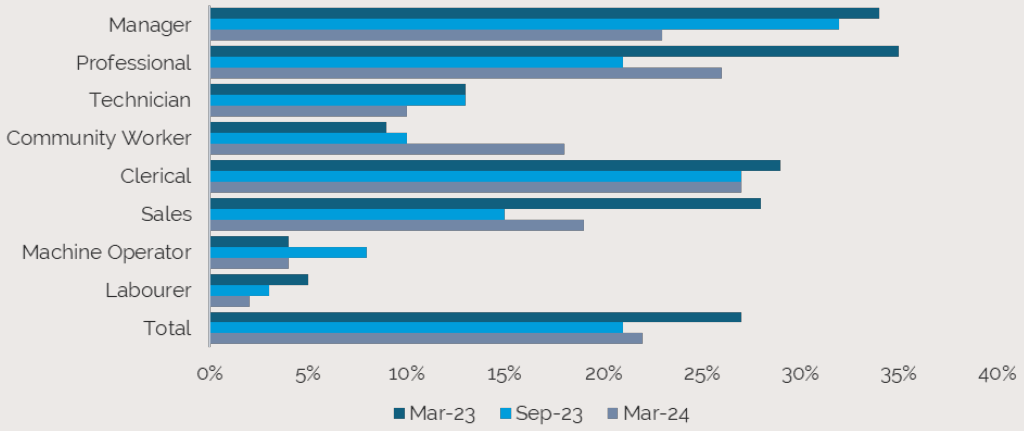
Source: Institute of Transport and Logistics Studies (ITLS), Transport Opinion Survey (TOPS), March 2024, p 25.

Rates of working from home also differ with profession, because not all jobs can be worked from home. Figure 2.9 shows that professions such as manager, professional and clerical still have working from home rates higher than the average, while professions such as machine operator and labourer have far fewer working from home rates.

This will indicate which areas of the public transport network (i.e. which train lines) are more likely to have their commuter patronage impacted by continuing working from home arrangements. It is likely that transport to and from areas with large office buildings will be most impacted.

Box 2.1 Research on changing patterns of work in Australia

Figure 2.9 Average percentage of days worked from home in the last 2 weeks



Source: Institute of Transport and Logistics Studies (ITLS), Transport Opinion Survey (TOPS), March 2024, p 27.

However, despite potential impacts on commuting travel, it is important to note that the Transport Opinion Survey found that 94.7% of people who work from home made some non-commuting trips during the days they worked from home (September 2023 survey results).

Of these trips for purposes such as leisure, shopping or personal business, people used a number of different transport modes including train (12%), bus (9%) and light rail (3%). (September 2023 survey results).

The Australian HR Institute released a report in October 2023 on Australian workplace practices. It found that 24% of Australian organisations expect remote working or working from home to increase over the next two years, while only 14% expect it to decrease, 59% expect it to remain consistent at current levels and 3% were unsure.[18]

Changes in flexible working arrangements is a complex issue and one that would normally not significantly impact the setting of maximum Opal fares. We consider that assuming minor decrease in hours worked from home over the next four years may be the best approach to calculate the flow on effects to public transport patronage. This will reflect the changes that have been shown in the Transport Opinion Survey since March 2022 while also recognising the strong preference for flexible or hybrid working arrangements shown by several organisations and industries.

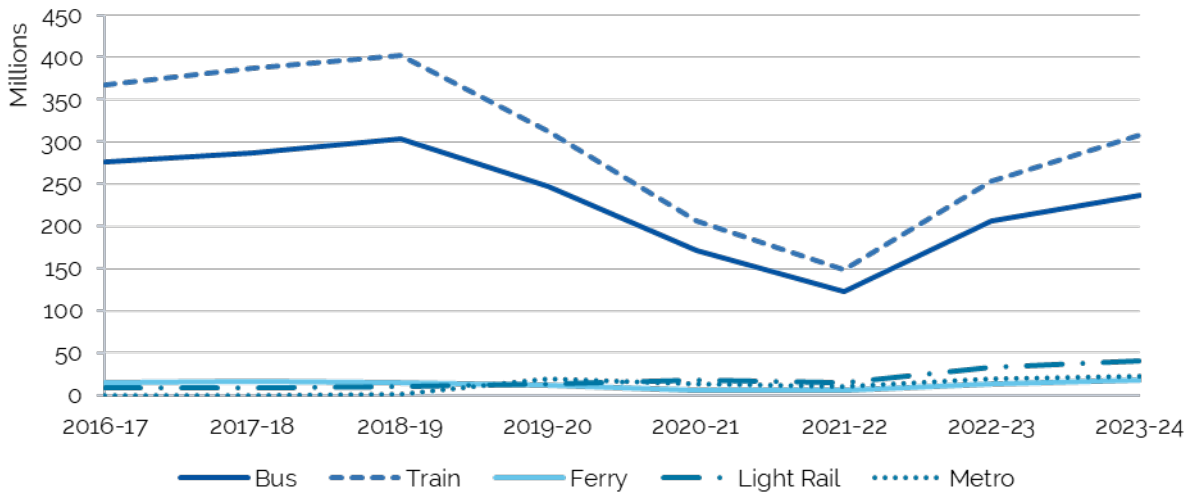
3 How do existing travel patterns impact patronage?

3.1 How does patronage vary by mode?

Figure 3.1 shows that trains and buses are the public transport modes used by the majority of Opal passengers. However, light rail and metro services have experienced rapid patronage growth since the opening of new services in 2019, increasing the proportion of total trips on these services.

The share of trips for train and bus has decreased from 93% in 2019-20 to 87% in 2023-24. Meanwhile light rail and metro trips have increased from 5% to 10%. Ferries have only grown slightly from 2% to 3% of trips.

Figure 3.1 Annual patronage by mode (millions of trips)



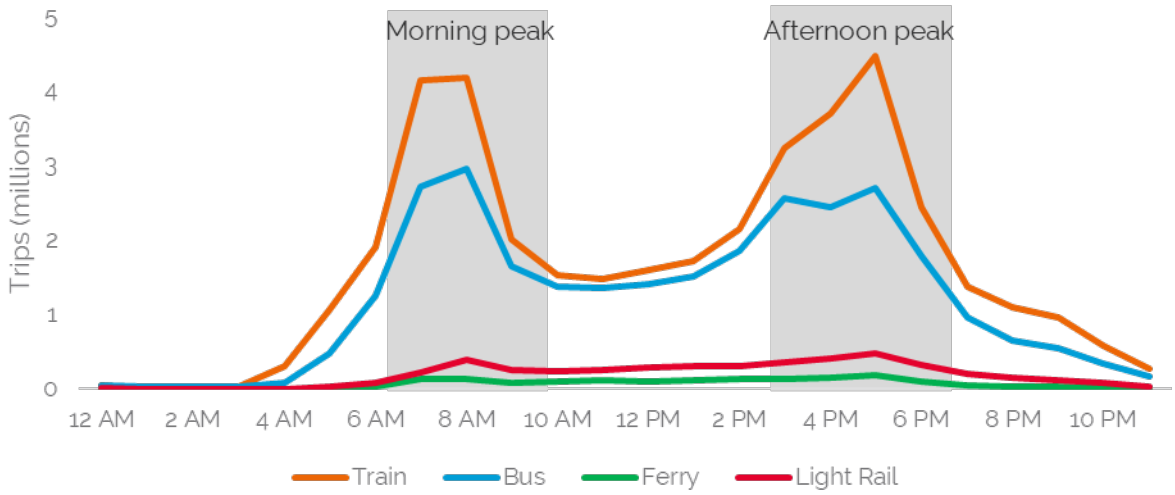
Note: The first trips on the metro occurred in 2018-19.
Source: Transport for NSW, Opal Trips – All Modes, accessed July 2024.

The ratio of bus travel compared to train travel was 75% in 2018-19. This increased during the years impacted by COVID-19 and peaked at 83% in both 2020-21 and 2021-22. The level has declined now to 77% of trips by bus compared to trips by train.

3.2 How does patronage vary by time of day?

Use of public transport differs throughout the day. Hourly public transport usage on the Opal network (Figure 3.2) displays a pattern of demand with distinct peaks during morning (AM) and afternoon (PM) windows when the transport network experiences its highest demand. The AM peak shows a pattern of usage that increases sharply from 6am for most modes. It experiences the highest level of demand between 7-8am and then drops sharply between 8-9. This aligns to workers commuting via public transport. The PM peak shows a similar pattern, but demand remains high over a longer period. The highest demand is very pronounced just after 5pm. This pattern of usage is clearest for train, bus and to a lesser extent light rail. However, ferry services only exhibit a minor AM and PM peak and demand remains relatively consistent throughout the day.

Figure 3.2 Hourly Opal trips week days (October 2023)



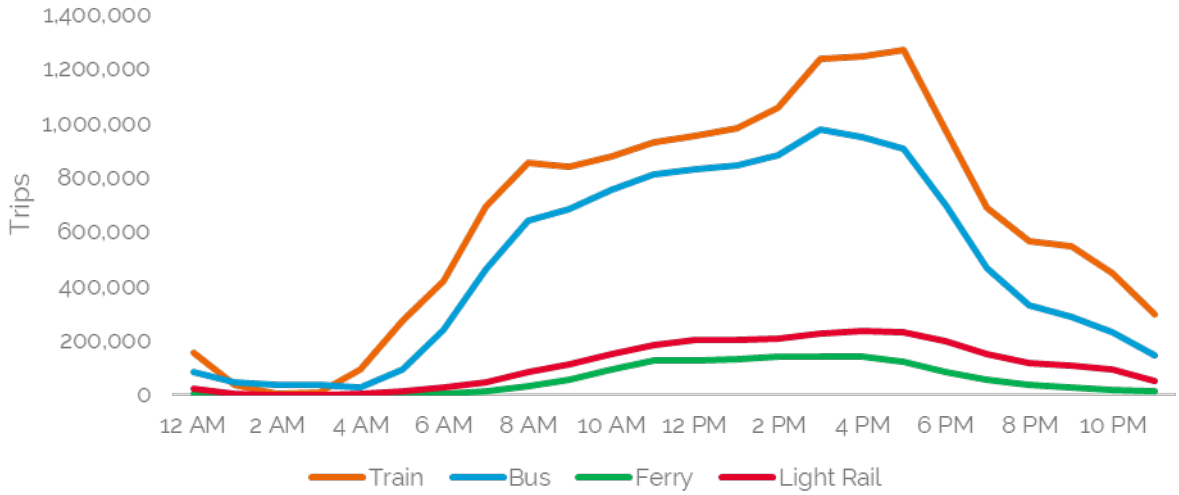
Note: Based on October 2023 data. Excludes weekends, Fridays from 20 October 2023 and public holidays.
Source: Transport for NSW, Opal Patronage, accessed November 2023.

Patronage levels broadly correspond within the peak hours; however, some anomalies appear within the patterns of usage. For example, train, bus and light rail usage between 9-10am within the peak hours appears lower than patronage between 2-3pm in the off-peak (intra peak) period.

Figure 3.3 shows trips by time of day on '*off-peak days*'[f]. It shows that the modes do not exhibit pronounced short peak times as experienced during the week. Instead, travel is sustained from about 8am to 5pm for trains and buses, and from about 11am to 5pm for ferry and light rail. The different modes reach their peak in the afternoon from 3pm to 5pm.

[f] Fridays, weekends and public holidays when the off-peak rate is charged all day.

Figure 3.3 Trips by time of day on off-peak days (October 2023)



Note: Based on October 2023 data. Includes weekends, Fridays from 20 October 2023 and public holidays, all other days excluded.
Source: Transport for NSW, Opal Patronage, accessed November 2023.

A key difference between ferry services and other modes is that a higher proportion of trips take place on days with off-peak pricing only. Days with off-peak prices (i.e. the weekend) could be considered the peak period for ferry services. We found that ferry passengers made 45% of ferry trips on the off-peak days in October 2023 (Table 3.1), these were 12 out of 31 days (39%) in that month. This shows that the proportion of monthly trips on off-peak days is highest for ferries compared to other modes. There are currently no off-peak prices available for ferries. Regardless of the time or day of travel passengers pay the same price for a single fare although daily, weekend and weekly caps do apply to ferry trips. One stakeholder told us that off-peak fares should not be introduced for ferries.[19]

Table 3.1 Proportion of trips during days with peak prices and days with only off-peak prices (October 2023)

Mode	Proportion of monthly trips on days with peak prices	Proportion of monthly trips on days with only off-peak prices
Train	72%	28%
Bus	72%	28%
Light rail	63%	37%
Ferry	55%	45%

Source: Transport for NSW, Opal Patronage, accessed November 2023.

On the topic of peak fares, we heard from several stakeholders through the Have Your Say website that they preferred larger off-peak discounts and longer off-peak hours. It is important to note that this survey is not representative of the community, because stakeholders self-selected participation in the survey. This means that while the survey can give an indication of passenger preferences it is not a robust sample of passengers or the wider community.

We heard from stakeholders about their preferences for peak hours. In our Have Your Say survey we asked passengers if they would shift some of their travel from peak hours to off-peak hours. 71% of passengers told us that they would not shift their travel to off-peak hours.

While this survey is not representative of the community, it does indicate that price signals for off-peak hours may not shift the behaviour of all travellers.

Instead, some travellers may place a premium on convenience, or are significantly constrained by other obligations (i.e. working hours) such that that they would not be able to travel during off-peak hours.

We also heard from a number of stakeholders who felt that the peak periods are too long. Some stakeholders suggested that the peak periods should revert to pre-COVID-19 peak periods which were 7am to 9am and 4pm to 6:30pm.

BusNSW also identified the issue of peak hour demand patterns contributing to the need for scheduling 'split shift' driver rosters that makes it difficult to attract and retain drivers. It supported any measures that could help spread demand over the day enabling operators to offer more straight shifts.[20]

Commuting passengers only have so much flexibility in their travel times, if the peak period is too long then a passenger might receive no benefit from reasonably delaying their travel, or starting it early, because shifting their travel by an hour or so will still result in paying the peak fare.

We considered the way that peak and off-peak arrangements have changed in recent years.

If applied in October 2023, the previous peak hours would have applied to 41% of weekday trips on trains, buses and light rail. However current peak hour arrangements now apply to 60% of trips. This means that an additional 19% of trips were captured under the new peak hours.

In February 2020, the pre-COVID-19 peak hours applied to 46% of weekday trips on trains, buses and light rail, and the existing peak hours would have applied to 66% of trips. This means that a smaller proportion of passengers are travelling during peak hours under either definition. This may indicate that a small proportion of passengers have been able to shift their travel to off-peak times. However, there have been significant changes to overall travel patterns during this time, including an increase in working from home arrangements and flexible working arrangements that would predominantly impact office commuters reducing the proportion of travellers using public transport during peak hours.

We consider the design of peak hours should encourage passenger behaviour that aligns with the objectives of Transport for NSW. These objectives may change in response to patterns of demand. Well-designed peak hours will achieve an appropriate balance between peak and off-peak patronage.

We consider that there are two objectives of peak and off-peak pricing in a public transport network, and that these are not mutually exclusive. These are:

1. To encourage passengers away from the busiest times in the network – as patronage approaches capacity during morning or evening peaks, the transport operator may need to construct new infrastructure to handle the growing passenger load. However, to avoid expensive increases of capacity peak and off-peak pricing and hours could be designed to encourage some passengers who normally travel at this time to change their travel time and free up some capacity at the busiest times.

2. To encourage greater use of the underutilised services in the network – where some services are under-utilised such as in the middle of the day, off-peak discounts may be used to encourage greater use of the existing services.

For example, the shift in peak hours and off peak discounts during the 2020 COVID-19 period was to incentivise greater social distancing on travel. While many have observed that the peak arrangements did not return to pre-COVID-19 levels, neither did the level of patronage and crowding that was experienced in the pre-COVID-19 period (See Figure 4.2 below for a comparison of 2019 and 2023 AM peak service train loads).

Following the effects of COVID-19, the overall patronage of the network has been reduced, most peak hour services are not at capacity and therefore overcrowding has not occurred during peak hours. This may indicate that the objectives of peak and off-peak arrangements may have changed since COVID-19 to incentivise greater use of the off-peak period rather than to encourage people away from the peak period.

As train loads in the peak period approach full capacity, due to population growth or changes in working patterns and commuter behaviour, there may be a need in the future to shift passengers out of the busiest times of the peak period to avoid costly capacity increases. At this time, it would be appropriate for Transport for NSW to consider shorter peak periods or other peak arrangements to avoid overcrowding and costly investments in additional vehicles and infrastructure to service capacity.

At this stage we have decided not to set the peak and off-peak prices and hours for public transport, or whether off-peak prices are offered for a service, in the draft determination. We do recommend review of the peak and off-peak arrangements (including hours and fares) to consider whether the current arrangements are providing the right incentives to smooth demand across the day (See our Information Paper – Form of determination and Information Paper – Fare package options for more details).

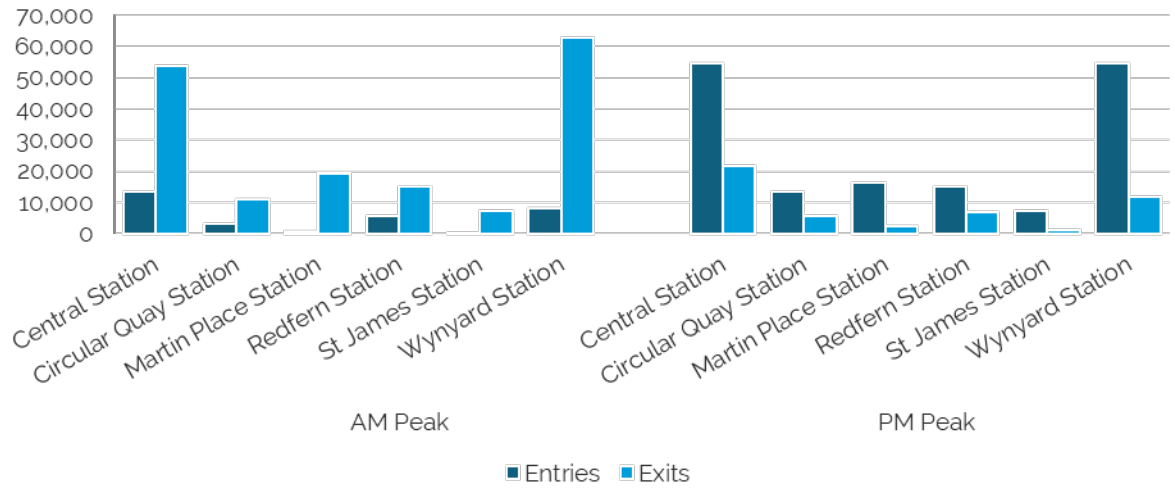
3.3 How does patronage vary by direction of travel?

We heard from some stakeholders during our consultation that peak fares should apply based on the direction of travel as well as the time of travel. Stakeholders suggested that if passengers were travelling away from the CBD in the morning, or towards the CBD in the evening they should not be charged a peak fare because these services are not overcrowded.

Figure 3.4 shows the number of entries and exits from train stations in the Sydney CBD from a 'typical day'[9] in 2019. It shows that all CBD stations have significantly more exits in the morning than entries and that the opposite is true in the afternoon.

[9] Transport for NSW prepared the data on entries and exits based on their interpretation of a typical day.

Figure 3.4 Sydney CBD station peak entries and exits on a 'typical day' (2019)



Source: Transport for NSW, Train Station Entries and Exits Data, accessed March 2023.

Despite the lower flow of passengers away from CBD stations in the morning peak and towards the stations in the afternoon peak, we have not recommended location or direction based peak pricing. This is mainly due to the complexity it would add to the system, particularly while there are the limitations of the existing Opal technology for implementing location or direction based pricing. The only other location based price within the Opal network is the Sydney Airport access fee which is outside of the scope of our review.

The key issue is the overall demand of the network during peak hours is higher than off-peak hours. More people are using stations, regardless of the direction of travel and more frequent services are provided to meet the higher demand. This incurs additional costs such as staffing, vehicles, equipment and maintenance. The higher cost of peak fares reflects the higher costs of operating during peak hours. There would also be complexities involved with calculating prices for passengers using busy services or passing through the CBD but not starting or finishing their journey within the CBD. The Opal system can only determine the start and end point of travel, not the specific route taken. We consider that to fairly implement location or direction based prices across the whole Opal network would increase complexity of the fare rules to the disadvantage of passengers. For this reason, we are not recommending location or direction based fares.

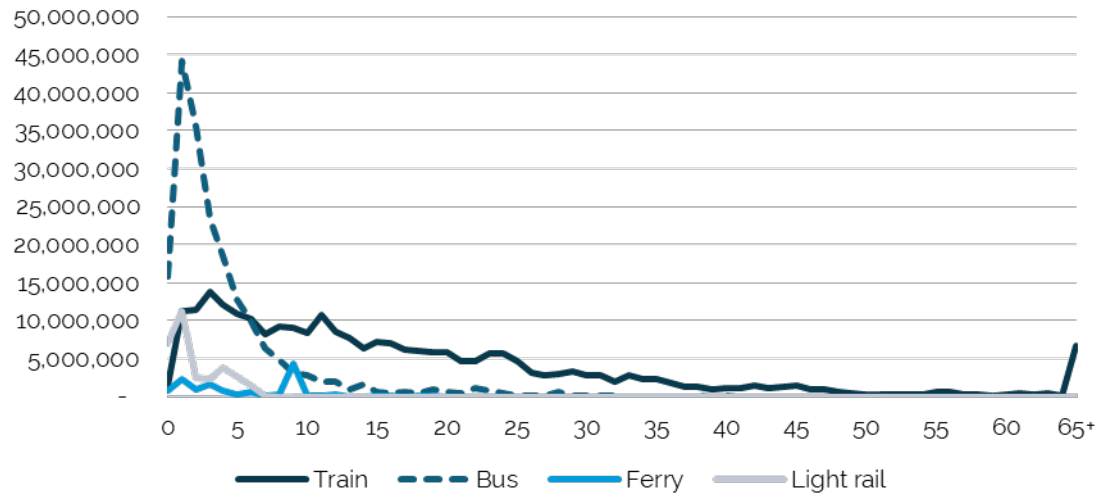
3.4 How does patronage vary by distance travelled?

A significant aspect of how travel patterns differ between modes are the distances travelled by passengers (Figure 3.5). We found that bus travel is generally used for short distance trips most commonly between 1-1.99km, with about 72% of bus trips being less than 5km. In comparison only 20% of train trips are less than 5km.

Train travel exhibits a very different pattern of usage, longer distances of travel are much more common than on other modes. Although the number of trips decrease as the length of travel increases. Other modes, particularly light rail and ferries are restricted on the total distance that can be travelled, due to less infrastructure (e.g. stops and wharves).

Similar to bus services, shorter distances are popular for light rail and ferry services. These are generally smaller networks that service a fixed route or local area. For ferry services the most commonly travelled distance is between 9-9.99km, for light rail services the most commonly travelled distance is between 1-1.99km.

Figure 3.5 Number of trips completed by distance (2023)



Note: Train journeys on the Opal network can extend to over 500km. This chart ends at 65km and groups all other trip lengths into the 65km+ grouping.
Source: Transport for NSW, Information request from IPART.

4 What factors drive patronage growth?

In this section we will discuss several factors that influence patronage growth and how these factors have changed or will change in the next few years. Some of the factors we will discuss include new services such as Sydney Metro and Light rail, population growth including growth in the labour force, customer satisfaction with public transport services, capacity during peak periods and new technology.

4.1 How will new services in the Opal network impact patronage?

New services can increase the overall patronage of the network as services become more accessible to more people. New services can increase the convenience of public transport, through more direct services and services closer to where people live. This can encourage non-passengers to start using public transport and encourage existing passengers to use public transport more often. New services can also lead to passengers shifting their travel from one service or mode to another.

A number of new/increased services and have recently been introduced or are expected to commence in 2024. These include:

- Sydney ferry service frequency has increased.[21]
- Stage 1 of the Parramatta light rail is expected to open in August 2024. The construction for Stage 2 of the Parramatta light rail will commence in 2024.[22]
- The Sydenham to Chatswood section of the City and Southwest Metro is expected to open in 2024. New stations will be delivered at Crows Nest, Victoria Cross, Barangaroo, Martin Place, Pitt Street and Waterloo, along with new underground platforms at Central Station.[23]

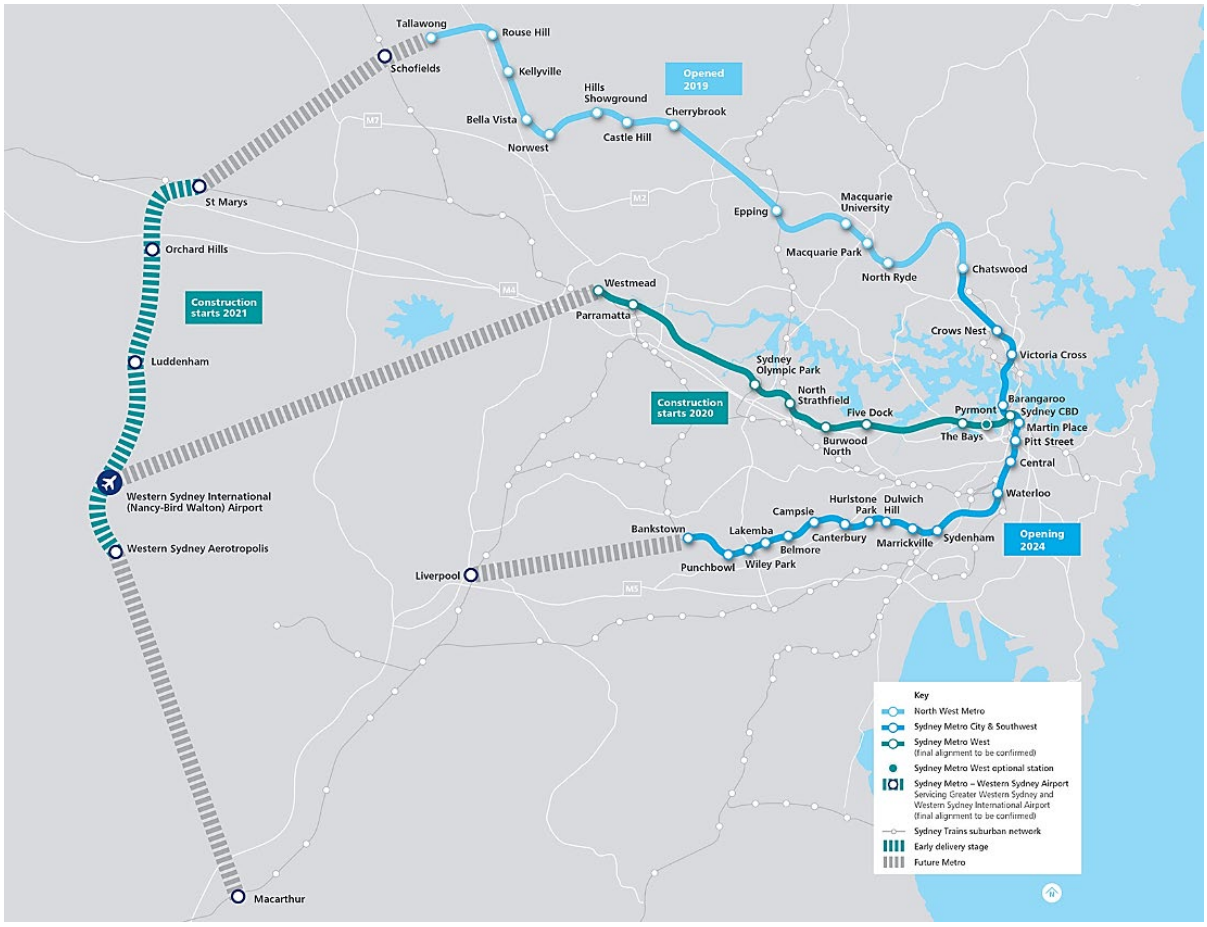
Over the next several years, the expansion of Sydney Metro will be a significant change to the capacity of the existing public transport network (particularly the rail network). The conversion of the T3 Bankstown Line between Sydenham and Bankstown to a metro service is expected to be completed in the second half of 2024, with services expected to commence from late 2025. This is expected to increase capacity from about 120 train services an hour currently to up to 200 metro services an hour beyond 2024. [24]

In the medium to longer term:

- Sydney Metro – Western Sydney Airport. The project includes six new metro stations to support the future Western Parkland City.[25]
- The Sydney Metro West project is a new 24-kilometre underground metro railway which will double rail capacity between Parramatta and the Sydney CBD.[26]

Figure 4.1 shows the planned and existing Sydney Metro lines and the planned stations.

Figure 4.1 Sydney Metro lines map



Source: NSW Government, Sydney Metro Overview, accessed February 2024.

The Sydney Metro Corporate Plan Update for 2023-24 has stated that Sydney Metro services are planning to achieve average annual patronage growth of at least 2%, with initial growth dependent on recovery from COVID-19.[27]

The introduction of new metro and light rail services is likely to drive some people to shift more of their travel from private modes to the new services (resulting in overall patronage growth for the whole network). Others will shift to the new services from existing public transport modes which will not drive overall network growth but could support the rest of the network in other ways by easing congestion and reducing overcrowding.

It is most likely that new services lead to both more public transport travel and some travel shifting between modes. Metro and light rail services in 2023 accounted for 10% of all trips on public transport and are now a significant part of the public transport network.[28] It will be difficult to determine the true extent of the Light rail and the Metro impact on patronage because the last few years have been disrupted by COVID-19.

As an example, Transport for NSW published data on bus services around the Hills area before and after the opening of the Sydney Metro on 26 May 2019. In the 3 weeks from the 6th to the 26th of May 2019 there were 502,941 bus trips. Then in the 3 weeks from 10th June to 30th June 2019 this reduced to 389,916 trips only 78% as many.[29] This coincided with the opening of the metro within this area and is an example of how trips on new services are not always new trips on public transport, some are trips shifted from other modes.

4.2 How will customer satisfaction impact patronage?

We have heard from some stakeholders that satisfaction with the reliability, quality and frequency of services is an important factor influencing their decisions to use public transport. Transport for NSW produces regular customer satisfaction reports on transport in NSW.

Data from the customer satisfaction surveys published by Transport for NSW is presented in Table 4.1 for the period between May 2019 to May 2023. Initially, after the outbreak of the pandemic there was an increase in customer satisfaction until November 2020. This may have been caused by less crowding of services, additional cleaning and improved punctuality.[h] When patronage increased in 2022-23 punctuality levels declined coinciding with a decline in customer satisfaction on trains, buses and light rail in 2021 and the findings of the May 2023 survey, show improvement for most services and customer satisfaction has generally returned to similar levels to November 2019.

Table 4.1 Overall customer satisfaction with public transport

Mode	May 2019	Nov 2019	Nov 2020	May 2021	May 2022	Nov 2022	May 2023
Train network	89%	90%	94%	93%	92%	85%	90%
Bus network	91%	91%	94%	93%	92%	89%	90%
Ferry network	98%	98%	99%	99%	98%	98%	98%
Light rail	91%	90%	96%	93%	93%	91%	93%
Metro	95%	96%	99%	98%	98%	97%	99%

Note: Green indicates an improvement in satisfaction since the previous survey, red indicates a decline, orange indicates no change.
Source: Transport for NSW, Customer Satisfaction Report, May 2023, p 3.

The surveys also report customer satisfaction with roads by modes of vehicle. We have presented this information here as satisfaction with roads can also impact the patronage of public transport. Customer satisfaction with private transport is shown in Table 4.2.

[h] During this period punctuality peaked in 2020-21, 95% of morning peak services and 83% of evening peak services ran on time. Transport for NSW, Sydney Trains and NSW TrainLink (Intercity) performance reports, accessed April 2024.

Table 4.2 Overall customer satisfaction with roads

Mode	May 2019	May 2021	May 2022	Nov 2022	May 2023
Private vehicle	85%	85%	88%	87%	86%
Heavy Vehicle	70%	70%	63%	58%	64%
Motorcycle	87%	92%	93%	89%	84%
Bicycle	85%	87%	90%	87%	87%
Walking	87%	85%	88%	89%	90%

Note: Green indicates an improvement in satisfaction since the previous survey, red indicates a decline, orange indicates no change.
Source: Transport for NSW, Customer Satisfaction Report, May 2023, p 15.

The pattern of customer satisfaction for private transport has been less clear than the pattern for public transport. Customer satisfaction has generally experienced some decline over the most recent survey periods, but most ratings for satisfaction are similar to customer satisfaction levels in 2019.

4.2.1 Which features of public transport journeys improve satisfaction?

Transport for NSW's report on customer satisfaction also breaks down satisfaction based on features of the journey. In Table 4.3 we have examined these factors for trains and buses (which are the most used modes of public transport).

Table 4.3 Areas of highest satisfaction and dissatisfaction for train and bus services (May 2023)

Mode of transport	Highest satisfaction	Lowest satisfaction
Train	1. Ease of paying for trip (93%) 2. The payment options available (93%) 3. Ease of getting on/off this train (93%)	1. Frequency of this train service (81%) 2. Time to connect to other transport services (82%) 3. Journey time given the distance travelled (84%) 4. Availability of information about service delays (84%)
Bus	1. Ease pf getting on/off this bus (95%) 2. Feeling safe while on this bus (94%) 3. This bus being driven safely (94%) 4. Ease of paying for my trip (94%)	1. Availability of information about service delays (72%) 2. Availability of next stop information on this bus (78%) 3. Frequency of this bus service (79%)

Source: Transport for NSW, Customer Satisfaction Report, May 2023, pp 7-8.

The journey features with highest and lowest customer satisfaction are consistent across both trains and buses. Customers are most satisfied with the ease of paying for services and the accessibility of public transport. Safety was also rated highly for both passenger groups. Customers are most dissatisfied with information about services and delays, the frequency and reliability of services. For trains, customers were also dissatisfied with journey times and the time to connect to other services.

A reduction in customer satisfaction may result in lower patronage of public transport. Lower customer satisfaction may cause some passengers to shift to an alternative mode of travel or reconsider their need to travel at all.

Some stakeholders told us that increases in fares should be linked with improving service quality and the overall value for money that passengers receive for their fares.[30] Transport for NSW's customer satisfaction survey shows that overall satisfaction with public transport remains high and is higher than satisfaction with private modes of transport.

4.3 How does capacity impact patronage?

The capacity of the public transport network is an important factor for determining the total patronage of the Opal network.[i] A significant proportion of the capacity in the network is required to service the most popular travel routes/times, which are ordinarily the AM and PM peaks from Monday to Friday. Increasing the capacity of the network, allows more people to travel during peak times. Increased capacity does not necessarily increase patronage during off-peak travel times (although increasing frequency of services could impact patronage if the route/time is underserviced).

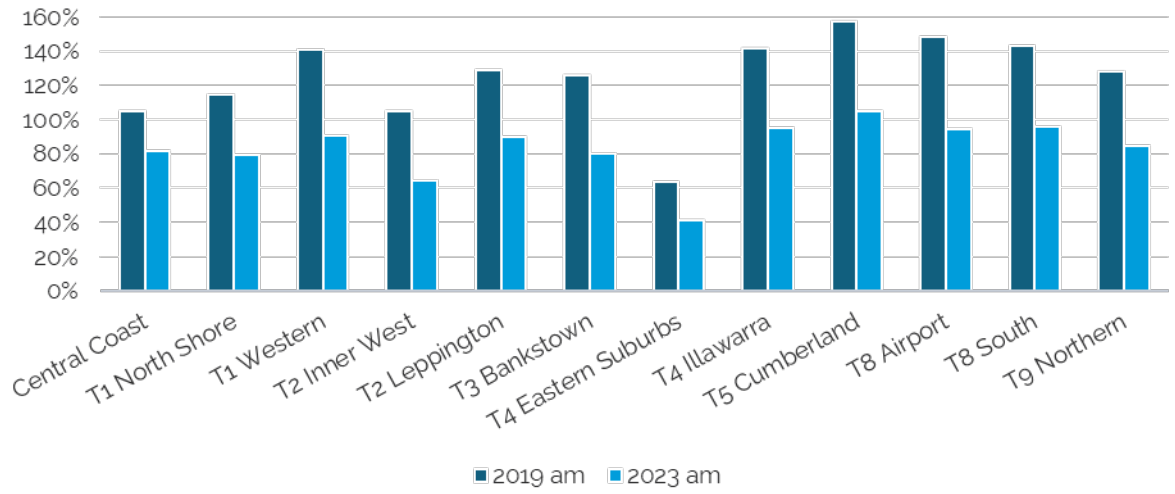
If a large proportion of passengers have a consistently strong preference for the time and destination of travel (e.g. travel to CBDs during the morning peak), then as the total number of passengers increases, overcrowding can occur on peak services. Routine overcrowding can have negative impacts that reduce the overall efficiency of the network.

Over the next few years additional capacity will be delivered to the network through projects such as new light rail and metro services as well as additional ferry services.[31] Over the medium term there will be new metro services such as Sydney Metro West and Sydney Metro Western Sydney Airport line.[32]

There is more available capacity on train services in the AM peak in 2023 compared to 2019 due to reduced patronage. Suburban train services in Sydney ran at an average 119% capacity in September 2019 from 8am to 9am arriving at Central Station. In September 2023 the average capacity was 80%. The change in AM peak capacity is shown in Figure 4.2

[i] A service is considered to be at 100% capacity if every seat is full and no passengers are standing. If some passengers don't have a seat than the capacity is over 100%. However, just because some passengers are standing this does not necessarily mean the services is overcrowded. A load factor of 135% is the benchmark beyond which passengers experience crowding and dwell times can impact on-time running.

Figure 4.2 Proportion of train seats full (AM peak) (September 2019 and September 2023)



Note: Percentages greater than 100% mean all seats are full and passengers are standing.
Source: Transport for NSW, Information request provided to IPART.

The reduced patronage on train services in the AM peak, now means there is more capacity within the train network. If working from home arrangements continue at the same or similar levels, the capacity within the network will be more permanent This means longer term augmentations may not be as urgently required, and issues with overcrowding are less likely in the shorter term.

Extra capacity during peak hours presents an opportunity to encourage greater patronage without risking overcrowding. However, this will provide benefits to the public transport network up to a certain point, beyond that issues arise due to overcrowding. Overcrowding can have impacts on the efficiency and reliability of public transport services.

In April 2020, the Audit Office of NSW reported on its investigation of overcrowding on trains. It noted that overcrowding can have several significant impacts on passengers and services. These included:

- Inhibiting movement of passengers, causing discomfort and increased health and safety risks.
- Delays in service operation as trains spend longer at the platform waiting for customers to board the service.
- Crowding can prevent some passengers from accessing the services at all.[33]

These issues can impact the frequency, reliability and quality of public transport services which can discourage people from taking public transport trips.

4.4 How do changes in fares impact patronage

Changes in the price of fares can encourage people to use transport more or less frequently. How the demand for public transport changes in response to changes in fares is known as the 'price elasticity of demand'. Demand can be considered relatively inelastic if the proportionate change in demand is less than the proportionate change in price. Meanwhile, demand can be considered relatively elastic if the proportionate change in demand is more than the proportionate change in price. For example, a price elasticity of -0.3% means that for a 10% increase in price there is expected to be a 3% decrease in demand, holding all else constant.

Public transport is relatively inelastic (less sensitive to price changes), which means that demand changes by less than the change in price (like the example above). However, elasticity is based on customers having a complete understanding of prices and price changes. We heard from a minority of stakeholders, through our survey on the Have Your Say website, that they either did not know how much they paid for public transport, or that they only had a rough idea. It is possible that customer knowledge of fares may decline as more customers use contactless payments instead of Opal cards (contactless payments currently do not provide the fare price in real time). This may reduce the accuracy of elasticity calculations if some customers are unaware of fare changes and therefore unable to change their behaviour in response to fares.

4.5 How would account-based technology impact patronage?

The flexibility offered by the current Opal system is a benefit to public transport users. This is evidenced by higher customer satisfaction with ticketing options (see Section 4.2) and what we heard from stakeholders through our survey and submissions.

The addition of contactless payments to the Opal system in 2019 has enabled introduction of account-based ticketing, which has been trialled by Transport for NSW but not yet rolled out more widely. This could be an opportunity to further improve the flexibility and simplicity of the current system, expand on the existing discounts and benefits and to tailor them to more distinct passenger groups.

4.5.1 What would account-based ticketing look like?

Account-based ticketing would change the way a passenger's relevant information is stored. Instead of a physical Opal card that identifies the cardholder as a certain type of passenger (i.e. Adult, concession, etc) and that tracks the travel to apply discounts (i.e. daily and weekly caps), passenger information would be stored digitally on an account. This would mean that all relevant passenger and payment information would be available to calculate and charge fares regardless of the payment device.

Existing ticketing

Passengers use an anoymised, physical, stand alone Opal card that contains their relevant passenger information

Account-based ticketing

Passengers have an individualised account, which stores their relevant information. Travel information is not locked to a physical card.

Some of the feedback and ideas we received to the Issues Paper could only be implemented if an account-based system is in place. Converting the Opal network to an account-based system can improve payments, fare packages and ticketing. Benefits could include:

- All passengers could use contactless payments (e.g. smartphones or bank cards) and receive fares that include their discount or concession. Currently contactless payments default to Adult fares.
- Passengers would not need to recharge their physical Opal card or replace the card if it was lost or damaged.
- Fares could be calculated and displayed in real time for contactless payments.
- New fare options could potentially be introduced such as annual or monthly passes.
- Discounts and benefits could be calculated based on individual customer information, such as discounted or free travel if your service was significantly delayed.
- Greater information about passenger behaviour, so that services may be better planned and integrated.
- More real time trip planning services to assist and incentivise passengers to choose the most efficient or suitable travel mode.
- Rebates could be more specifically targeted to passengers impacted by service disruptions.
- Family or household accounts could be linked to allow easier monitoring, top up management of school and child cards or sharing of caps and benefits.

Introducing account-based ticketing would be an opportunity to expand these existing fare options and to integrate Opal cards with contactless payments into a single method of payment. This would also have administrative benefits for public transport operators, which drive productivity improvements. In turn financial savings from these improvements can be reinvested into improving service quality and customer experience.

Transport for NSW is responsible for implementing new technology, such as account-based ticketing. These responsibilities will include ensuring passengers are familiar with how to use the technology and that any concerns, such as privacy or access to credit or debit facilities are addressed.

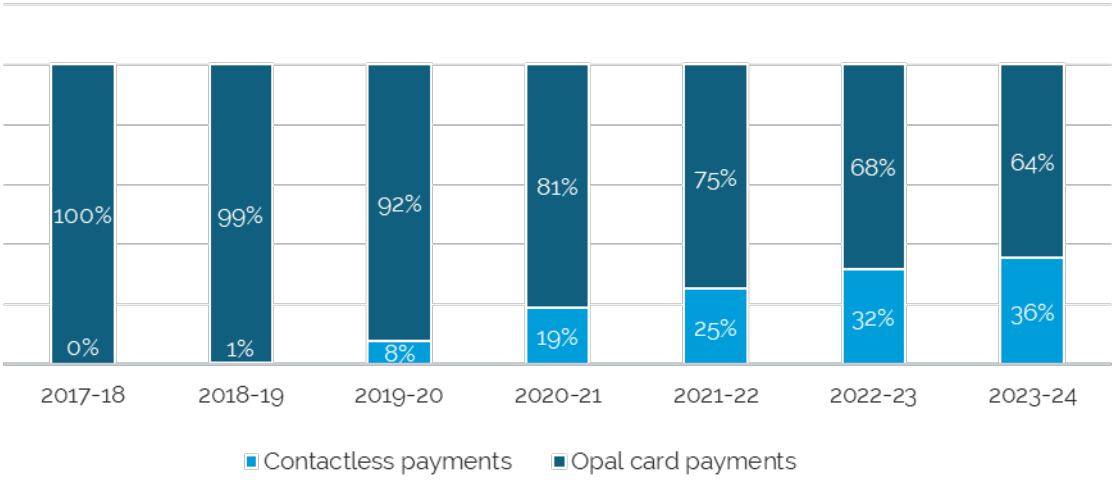
4.5.2 Would account-based ticketing impact patronage?

The introduction of the Opal ticketing system had a significant impact on patronage. A paper from the University of Sydney's Institute of Transport and Logistics concluded that the introduction of the Opal card had "coincided with significant changes in the use of most modes of transport. In particular, there is a strong and significant effect of people switching from cars (and motorcycles) to public transport, in particular to train travel."[34] While, the paper acknowledges the impact of multiple factors on transport decisions it concluded that the Opal card was a significant factor for encouraging this change.

The paper acknowledged that it was not possible to differentiate the impact of the introduction of Opal cards from the impact of the concurrent change in the fare structure. However, it stated that "it can be argued that a new (and frequently simpler) fare structure is an inherent feature of smartcard ticketing systems".[35]

Switching to account-based ticketing could further increase patronage, if it introduces payment options that improve convenience and simplicity of ticket payment options. Contactless payments are a form of account-based ticketing and have experience rapid growth since their introduction on the Opal network. They are a convenient payment method for cohorts who already use contactless payments for other purchases and do not require a concession fare or other discounted travel. Figure 4.3 shows the increasing proportion of trips using contactless payments to tap on to public transport.

Figure 4.3 Proportion of trips made using contactless payment



Note: Opal card payments includes payments using concession cards and Opal Gold cards.

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

The introduction of account-based ticketing could lead to the implementation of a new and simpler fare structure to accompany account-based ticketing. One example is that instead of daily or weekly caps, frequent travellers could purchase discounted subscriptions that reward them for frequent travel. Currently only a small number of passengers meet the weekly cap, this percentage has decreased due to shifts in working from home. Subscription options could be available to provide discounts and benefits for different levels of weekly or monthly travel. or incentives to encourage those travellers to take more public transport trips.

An easier payment system combined with a simple fare structure with tailored incentives could further increase patronage.

Account-based ticketing could be transitioned in to also operate alongside Opal cards, which would still be available for passengers that do not wish to use the new system.

5 What is the link between patronage and financial performance?

Public transport systems rarely recover the full cost of operating a network and usually require government subsidies.

In 2022-23 we estimate that cost recovery from fares for Opal services was 18% of operating costs. In our financial and operating performance paper, we discuss and track cost recovery since 2019-20, which has declined in line with a significant decline in patronage over the period.

In submissions to our Issues Paper some stakeholders suggested that lower fares would encourage greater patronage and this would ultimately create financial performance.

A significant increase in demand for public transport would be required to offset and then improve overall revenue from reduced fares. However, significant increases in demand, particularly at peak periods, would require costly increases in capacity, because many people travel at similar times (e.g. during AM and PM peak hours into the CBD or other employment hubs). This would increase the costs to Transport for NSW to obtain and operate new/larger fleets or build new lines, stations, stops and/or wharves. The additional costs incurred would not be matched by the additional revenue and would not result in improved financial performance or cost recovery of the network.

We have also had suggestions from stakeholders that fares should be free. We have examined the impact of very low-cost fares with modelling data from Transport for NSW's strategic transport model. This is discussed in the section below.

5.1.1 How would patronage be impacted by very low fares or free travel?

We asked Transport for NSW to model the impact of very low fares on public transport patronage. The modelling estimated that a low fare scenario[j] would increase patronage by 60%.

For all modes of public transport, the period with the largest percentage increase in patronage would be the period between the morning and afternoon peak.[k] This would considerably increase the utilisation of existing public transport services. However, there would also be a large increase in the use of public transport during the morning and evening peak, which would lead to overcrowding on many services. Overcrowding causes several negative impacts on service quality, see Section 4.3.

[j] The scenario used for the modelling was fares at 40% the price of current fares. The expected change in patronage for train, bus, ferry and light rail passenger on an average school day in 2021 would have been from about 1.87 million trips to about 3 million. Significant decreases in fares impact the model's assumptions and the results may become less reliable the larger the change in fare price. This is partly why we chose not to request that Transport for NSW model free passenger fares.

[k] The Strategic Transport Model still uses pre-COVID-19 peak times for modelling purposes. This means that in the modelling results the inter peak period is 9am to 4pm. However, under the current fare structure the inter peak period is actually 10am to 3pm.

It is likely that such a decrease in public transport fares could also have a negative effect on public transport financial performance. The increase in demand would require significant investment in new services to increase the peak hour capacity of the network. However, the increased patronage would not offset the reduced fares and the total revenue received from passenger fares would also decline.

We discuss the impact of very low fares on taxpayers and the financial performance of the Opal network in our Information Paper - Financial and operational performance, available here. For more information about our modelling scenarios see our Technical Paper – Modelling socially optimal fares.

5.1.2 What is the impact of fare evasion?

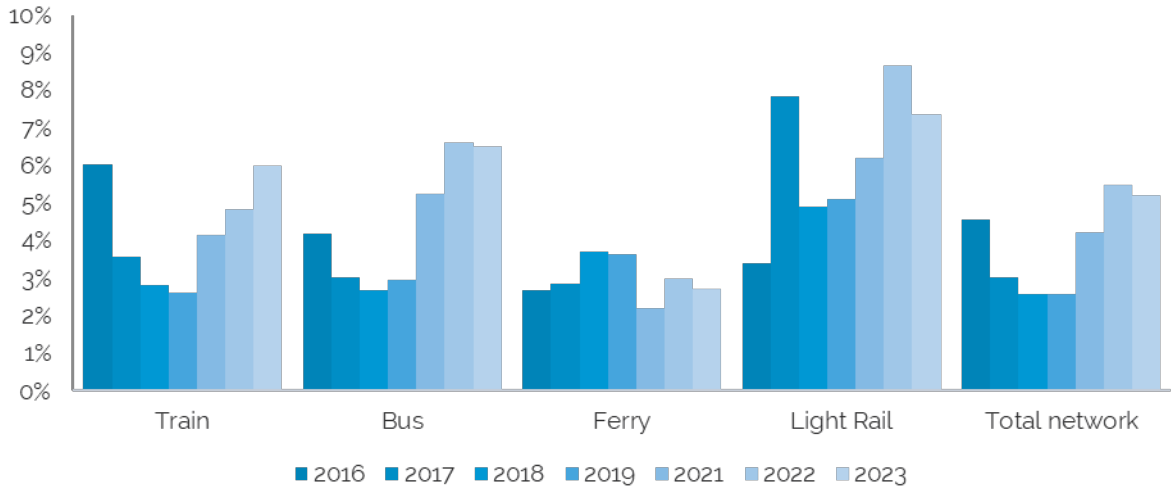
We have heard from a number of stakeholders that they are concerned about fare evasion (i.e. passengers without a valid ticket) on public transport as well as other non-compliances. We considered this issue and found that the rate of fare evasion has increased since 2019 after declining since 2016.[36]

Fare evasion and other forms of fare non-compliance are a complex set of behaviours that can have different causes and motivations. We discuss the causes of ticketing non-compliances and different strategies that can reduce non-compliances in our Information Paper - Financial and operational performance.

Fare evasion (known as 'No ticket fare loss') is a type of non-compliance on public transport. Other types of non-compliance include misuse of a concession card and no ticket but no fare loss. The overall rate of non-compliance, including fare loss, was 9% in 2023, rising from a low of 4% in 2019.[37]

Figure 5.1 shows fare evasion by mode of transport from 2016 through to 2023. It shows that for most modes there was a decline in fare evasion leading up to 2019 but an increase since 2021.

Figure 5.1 Fare evasion rate by mode of transport (2016 –2023)



Note fare compliance surveys were not completed in 2020 due to COVID-19 restrictions and safety concerns. 'Trains' include Intercity, Sydney Trains and Metro (since 2019) modes.

Source: Transport for NSW, Fare Compliance Survey Results Data, accessed February 2024.

Fare evasion results in reduced revenue and at significant levels together with some other forms of non-compliance[l] distorts the patronage data collected by Transport for NSW. In 2023 the average 'No ticket' non-compliance rate (including both revenue loss and no revenue loss categories) was 8.1% across the Opal network. This means actual patronage of services is likely higher than measured by the data.

This rate differs between modes and regions with some services recording 'no ticket rates' of over 30%.[38] We note that the latest fare compliance survey conducted in November 2023 has indicated a 2.2% improvement in compliance across the network, compared to May 2023.[39]

We discuss the revenue impacts of fare evasion and its relationship with financial performance and fares further in our Information Paper - Financial and operational performance.

[l] For example, School students not tapping on. School travel is free, so revenue is not lost when no tap on is made. Some stakeholders were concerned that services are crowded. This could impact services as patronage data is based records of passengers tapping on.

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