

2016-17 Fares for Opal Services Pricing Proposal

Introduction

Transport for New South Wales (TfNSW) is pleased to present this pricing proposal (proposal) to the Independent Pricing and Regulatory Tribunal (IPART) which sets out the Proposed Fare Change Events in accordance with IPART's current determination of maximum fares for Opal Services.¹

Proposed Fare Change Events

TfNSW has identified the following Proposed Fare Change Events as defined by clause 4 of Schedule 1 of the Determination:

- 1) Retirement of remaining paper tickets, effective 1 August 2016.
- 2) Increasing the price of Opal Single Trip Tickets consistent with achieving a 20% price premium above equivalent Opal card fares, effective 5 September 2016.
- 3) Amending Opal card benefits, by introducing a transfer discount of \$2.00 for adults for transfers between transport modes within 60 minutes and reducing the discount for Travel Reward from 100% to 50% after eight paid journeys in the week, effective 5 September 2016.

Compliance with IPART's determination

After assessing the impact of these changes, TfNSW estimates that the average Adult fare for 2016-17 is \$2.56, an increase of 3.0% on the average Adult fare of \$2.49 for 2015-16.

This increase is less than the maximum permitted increase for Adult Fares from 2015-16 to 2016-17 of 6.6%, as set out in clause 2(b) of Schedule 1 of the Determination.

¹ Transport – maximum fares for Opal Services, Determination No. 1, 2016, IPART (May 2016)

Proposed Fare Change Events overview

Fare change event 1: Paper ticket retirement

Table 1 presents the paper tickets proposed for retirement effective 1 August 2016, their equivalent replacement tickets and ticket price impacts. The vast majority of the retired tickets are replaced by an Opal Single Trip Ticket at the same price. However, light rail and Newcastle Bus 1-Hour tickets have a range of potential replacements based on existing customer choice. This is due to these tickets being zone-based or time-based while Opal is distance-based.

Table 1: Proposed Ticket Retirements

Ticket	Current Price	Replacement	1 Aug 2016 Price	Impact
MyTrain 1 Single	\$4.00	Train Band 1 Single	\$4.00	–
MyTrain 2 Single	\$4.80	Train Band 2 Single	\$4.80	–
MyTrain 3 Single	\$5.40	Train Band 3 Single	\$5.40	–
MyTrain 4 Single	\$7.00	Train Band 4 Single	\$7.00	–
MyTrain 5 Single	\$8.80	Train Band 5 Single	\$8.80	–
MyFerry 1 Single	\$6.20	Ferry Band 1 Single	\$6.20	–
MyFerry 2 Single	\$7.60	Ferry Band 2 Single	\$7.60	–
MyBus 1 Single	\$2.40	Bus Band 1 Single	\$2.40	–
MyBus 2 Single	\$3.80	Bus Band 2 Single	\$3.80	–
MyBus 3 Single	\$4.70	Bus Band 3 Single	\$4.70	–
Newcastle Ferries Single (Stockton Ferry)	\$2.60	Newcastle Ferries Band 1 Single	\$2.60	–
Light Rail 1 Zone Single	\$3.80	Light Rail Band 1 Single *	\$2.40	(37%)
		Light Rail Band 2 Single *	\$3.80	–
Light Rail 2 Zones Single	\$4.80	Light Rail Band 1 Single *	\$2.40	(50%)
		Light Rail Band 2 Single *	\$3.80	(21%)
Light Rail 1 Zone Return	\$5.20	2x Light Rail Band 1 Single *	\$4.80	(8%)
		2x Light Rail Band 2 Single *	\$7.60	46%
Light Rail 2 Zones Return	\$6.40	2x Light Rail Band 1 Single *	\$4.80	(25%)
		2x Light Rail Band 2 Single *	\$7.60	19%
Newcastle Bus 1-Hour	\$3.80	Bus Band 1 Single *	\$2.40	(37%)
		Bus Band 2 Single *	\$3.80	–
		Bus Band 3 Single *	\$4.70	24%
Moore Park Single (Sportsground)	\$3.50	No change	\$3.50	–
Moore Park Return (Sportsground)	\$6.00	No change	\$6.00	–
Randwick Racecourse Single	\$3.50	No change	\$3.50	–
Randwick Racecourse Return	\$6.00	No change	\$6.00	–

* No direct replacement

Fare change event 2: Increased prices of Opal Single Trip Tickets

Table 2 presents Tickets and their proposed price rises effective 5 September 2016, then presents the proposed prices relative to the equivalent fare on an Opal card.

Table 2: Increases to Opal Single Trip ticket prices

Ticket	1 Aug 2016 Ticket	5 Sept 2016 Ticket	Impact	5 Sept 2016 Card*	Ticket vs Card
Train Band 1 Single	\$4.00	\$4.10	2%	\$3.38	21%
Train Band 2 Single	\$4.80	\$5.10	6%	\$4.20	21%
Train Band 3 Single	\$5.40	\$5.80	7%	\$4.82	20%
Train Band 4 Single	\$7.00	\$7.80	11%	\$6.46	21%
Train Band 5 Single	\$8.80	\$10.00	14%	\$8.30	20%
Ferry Band 1 Single	\$6.20	\$6.90	11%	\$5.74	20%
Ferry Band 2 Single	\$7.60	\$8.70	14%	\$7.18	21%
Bus Band 1 Single	\$2.40	\$2.60	8%	\$2.10	24%
Bus Band 2 Single	\$3.80	\$4.20	11%	\$3.50	20%
Bus Band 3 Single	\$4.70	\$5.40	15%	\$4.50	20%
Newcastle Ferries Band 1 Single	\$2.60	\$2.60	–	\$2.10	24%
Light Rail Band 1 Single	\$2.40	\$2.60	8%	\$2.10	24%
Light Rail Band 2 Single	\$3.80	\$4.20	11%	\$3.50	20%
Moore Park Single (Sportsground)	\$3.50	\$3.50	–	n/a	n/a
Moore Park Return (Sportsground)	\$6.00	\$6.00	–	n/a	n/a
Randwick Racecourse Single^	\$3.50	\$3.50	–	n/a	n/a
Randwick Racecourse Return^	\$6.00	\$6.00	–	n/a	n/a

^ Special event tickets; * Opal card adult peak fares

Fare change event 3: Opal card benefit changes

Table 3 presents the current Opal card fare and benefits structure and proposed changes for 5 September 2016 (proposed changes highlighted).

Table 3: Opal card fare and benefits

Fares	Current Price	5 Sept 2016
Train Band 1 (Peak)	\$3.38	\$3.38
Train Band 2 (Peak)	\$4.20	\$4.20
Train Band 3 (Peak)	\$4.82	\$4.82
Train Band 4 (Peak)	\$6.46	\$6.46
Train Band 5 (Peak)	\$8.30	\$8.30
Train Band 1 (Off-Peak)	\$2.36	\$2.36
Train Band 2 (Off-Peak)	\$2.94	\$2.94
Train Band 3 (Off-Peak)	\$3.37	\$3.37
Train Band 4 (Off-Peak)	\$4.52	\$4.52
Train Band 5 (Off-Peak)	\$5.81	\$5.81
Ferry Band 1	\$5.74	\$5.74
Ferry Band 2	\$7.18	\$7.18
Bus Band 1	\$2.10	\$2.10
Bus Band 2	\$3.50	\$3.50
Bus Band 3	\$4.50	\$4.50
Light Rail Band 1	\$2.10	\$2.10
Light Rail Band 2	\$3.50	\$3.50
Newcastle Ferries Band 1	\$2.10	\$2.10
Benefits	Current Price	5 Sept 2016
Daily Cap (Mon to Sat)	\$15.00	\$15.00
Sunday Cap	\$2.50	\$2.50
Weekly Cap	\$60.00	\$60.00
Travel Reward	100% after 8 paid journeys in week	50% after 8 paid journeys in week
Intermodal transfer rebate	\$0.00 per transfer	\$2.00 per transfer

Average adult fare for the period 2015-16

TfNSW has calculated an average Adult Fare for 2015-16 of \$2.49 excluding GST, This fare is based on a trip weighted average price for qualifying travel on tickets and on Opal cards for the year from 1 July 2015 to 30 June 2016. This price includes 11 months of observed behaviour (through 31 May 2016) and one month of forecast behaviour (June 2016). The forecast month is assumed to comprise the same average Adult fare as the month of May 2016.

Table 4: Average Adult Fare 2015-16 by Product Type

Product Group	Trips 2015-16 (000s)	Average Adult Fare 2015-16
Opal card	457,823	\$2.32
Ticket	55,167	\$3.86
TOTAL	512,990	\$2.49

Note: 11 months actual and 1 month forecast

Trip distribution underlying the average Adult fare calculation

The following table presents key characteristics of 2015-16 qualifying trips.

Table 5: Trip distribution for 2015-16

Fare Up To	2015-16 Year - TOTAL			2015-16 Year - Opal Card			2015-16 Year - Tickets		
	Trip Distribution		Average Fare [^]	Trip Distribution		Average Fare [^]	Trip Distribution		Average Fare [^]
	Adult	Concession		Adult	Concession		Adult	Concession	
\$0.00	24%	13%	(\$0.00)	26%	19%	(\$0.00)	–	–	–
\$2.00	2%	5%	\$1.08	2%	3%	\$0.89	4%	8%	\$1.73
\$3.00	26%	26%	\$2.18	28%	33%	\$2.18	7%	10%	\$2.26
\$4.00	22%	31%	\$3.11	21%	25%	\$3.12	27%	44%	\$3.04
\$5.00	17%	11%	\$4.09	18%	15%	\$4.09	2%	2%	\$4.17
\$7.00	8%	13%	\$5.13	4%	4%	\$5.60	57%	35%	\$4.80
Over \$7.00	1%	1%	\$7.11	1%	1%	\$7.12	4%	1%	\$7.06
ALL	100%	100%	\$2.49	100%	100%	\$2.32	100%	100%	\$3.86

[^] Weighted average adult fare excl GST, excl airport station access fees.

Average adult fare for the period 2016-17

TfNSW has calculated an average Adult fare of \$2.56 for 2016-17. This consists of a weighting of average fares across pre-and-post fare change event periods for each product group (equal weighting by month) followed by a volume weight of the product group annual averages. Average fares by product group and the 2016-17 volume weighted average Adult fare is presented in Table 6.

Table 6: 2016-17 Average Adult Fare

Product Group	Trip Weighting	Average Adult Fare 2016-17
Opal card	93.0%	\$2.43
Ticket	7.0%	\$4.36
TOTAL	100.0%	\$2.56

The average Adult Fare for the period 2016-17 is calculated from the proposed Trip Distribution for 2016-17. The proposed trip distribution has been selected from a period of travel behaviour considered representative of expected travel behaviour in 2016-17. The following process was adopted to select the proposed trip distribution and evaluate price impacts of fare change events:

- 1) Identify time period(s) from 2015-16 which are considered representative of expected 2016-17 customer behaviour in the absence of any Proposed Fare Change Events. Note that this behaviour will be assumed until the effective date of the first Proposed Fare Change Event.
- 2) Address each Proposed Fare Change Event in turn – namely paper ticket retirement, Opal Single Trip ticket price increases and Opal card benefit changes – and establish a level of dataset segmentation that permits modelling of the expected price impacts and demand response.
- 3) Combine the impacts of each Proposed Fare Change Event to calculate the expected increase in average Adult Fare for 2016-17, including testing of price sensitivity to changes in demand.

Representative time periods

TfNSW has identified that Opal Card average Adult Fares are substantially impacted by 2 distinct types of week, determined by whether a week contains a public holiday (Holiday week) or not (Normal week). TfNSW has selected the week containing ANZAC day, along with the week immediately thereafter as the 2015-16 weeks that best represent 2016-17 expected behaviour and has adopted them in this analysis.

Representative weeks fit

The price and customer distribution of the 2015-16 year and the representative weeks is presented below, indicating strong similarities in the trips and average price distributions for both Adult and Concession Opal cards.

Table 7: Representative weeks trip and price distribution compared to 2015-16

Fare Up To	2015-16 Year - Opal Card			Holiday Week			Normal Week		
	Trip Distribution		Average	Trip Distribution		Average	Trip Distribution		Average
	Adult	Concession	Fare^	Adult	Concession	Fare^	Adult	Concession	Fare^
\$0.00	26%	19%	(\$0.00)	22%	16%	–	26%	19%	–
\$2.00	2%	3%	\$0.89	2%	5%	\$0.92	2%	4%	\$0.94
\$3.00	28%	33%	\$2.18	31%	35%	\$2.18	27%	32%	\$2.17
\$4.00	21%	25%	\$3.12	22%	26%	\$3.12	21%	26%	\$3.12
\$5.00	18%	15%	\$4.09	18%	14%	\$4.09	18%	16%	\$4.09
\$7.00	4%	4%	\$5.60	4%	3%	\$5.58	4%	3%	\$5.61
Over \$7.00	1%	1%	\$7.12	1%	1%	\$7.15	1%	1%	\$7.21
ALL	100%	100%	\$2.32	100%	100%	\$2.43	100%	100%	\$2.32

^ Weighted average adult fare excl GST, excl airport station access fees

Impact of Proposed Fare Change Events

Event 1: Ticket Retirement

Of the 16 tickets being retired, 11 have direct replacements at the same price point, two (Light Rail 1 Zone Single, Light Rail 2 Zones Single) have direct replacements at the same or lower price points, whereas 3 tickets present a mix of price points including a higher price point. The 5 tickets with price point changes are considered in Table 8. The sales allocation from the retiring ticket to the replacement tickets are inferred from considering distances between key station pairs (in the case of light rail) and with reference to travel survey data (Newcastle Bus 1-Hour).

Table 8: Ticket Retirement Average Fare Impact

Ticket	Current Price	Ticket Sales	Sales Allocation	Replacement	Proposed Price	xTrips	Trips
Light Rail 1 Zone Single	\$3.80	3,837	50%	Light Rail Band 1 Single	\$2.40	1.0x	1,919
			50%	Light Rail Band 2 Single	\$3.80	1.0x	1,919
Light Rail 2 Zones Single	\$4.80	3,837	50%	Light Rail Band 1 Single	\$2.40	1.0x	1,919
			50%	Light Rail Band 2 Single	\$3.80	1.0x	1,919
Light Rail 1 Zone Return	\$5.20	2,104	50%	Light Rail Band 1 Single	\$2.40	2.0x	2,104
			50%	Light Rail Band 2 Single	\$3.80	2.0x	2,104
Light Rail 2 Zones Return	\$6.40	2,104	50%	Light Rail Band 1 Single	\$2.40	2.0x	2,104
			50%	Light Rail Band 2 Single	\$3.80	2.0x	2,104
Newcastle Bus 1-Hour	\$3.80	34,937	30%	Bus Band 1 Single	\$2.40	1.0x	10,481
			30%	Bus Band 2 Single	\$3.80	1.0x	10,481
			29%	Bus Band 3 Single	\$4.70	1.0x	10,132
			4%	Bus Band 1 Single (x2)	\$2.40	2.0x	2,795
			4%	Bus Band 2 Single (x2)	\$3.80	2.0x	2,795
			3%	Bus Band 3 Single (x2)	\$4.70	2.0x	2,096
							54,872
Representative Period Revenue Impact (000s)							-\$1
Total Representative Period Trips - Tickets (000s)							1,419
Price Impact per Trip							(\$0.00)

The net impact on average Adult fare of the retirement event is negligible for each ticket-based trip.

Event 2: Single Trip Ticket fare increases

The following table presents the full year equivalent impact of the proposed change in single trip ticket prices.

Table 9: Single Trip Ticket Price Impact

Ticket	1 August 2016 Ticket	5 Sept 2016 Ticket	Impact	Trips (000)
Train Band 1 Single	\$4.00	\$4.10	2%	253
Train Band 2 Single	\$4.80	\$5.10	6%	179
Train Band 3 Single	\$5.40	\$5.80	7%	163
Train Band 4 Single	\$7.00	\$7.80	11%	82
Train Band 5 Single	\$8.80	\$10.00	14%	58
Ferry Band 1 Single	\$6.20	\$6.90	11%	52
Ferry Band 2 Single	\$7.60	\$8.70	14%	38
Bus Band 1 Single	\$2.40	\$2.60	8%	298
Bus Band 2 Single	\$3.80	\$4.20	11%	189
Bus Band 3 Single	\$4.70	\$5.40	15%	80
Newcastle Ferries Band 1 Single	\$2.60	\$2.60	–	7
Light Rail Band 1 Single	\$2.40	\$2.60	8%	8
Light Rail Band 2 Single	\$3.80	\$4.20	11%	8
Moore Park Single (Sportsground)^	\$3.50	\$3.50	–	0
Moore Park Return (Sportsground)^	\$6.00	\$6.00	–	1
Randwick Racecourse Single^	\$3.50	\$3.50	–	0
Randwick Racecourse Return^	\$6.00	\$6.00	–	0
TOTAL	\$4.47	\$4.86	9%	1,419
TOTAL (excl GST)	\$4.07	\$4.42	9%	1,419

^ Special event tickets

As a result of the proposed fare increases in Fare Change Event 2, an average Adult fare for tickets of \$4.42 has been calculated effective September 2016. The average Adult fare for tickets from 1 August 2016 includes the impact of Event 1 ticket retirement.

Event 3: Opal card benefit changes

The impact of Opal card benefit changes has been calculated for each representative week, based on a matrix of price points and discount structure features which include the fare band, indicators for intermodal transfers, indicators for transfers within the same mode, whether trips were taken as part of a peak or off-peak journey, whether trips were eligible for travel reward and if there was any daily or weekly capping on those trips.

2016-17 Trip and price distribution after Event 3

The following table presents the expected distribution of trips and average prices due to the proposed Opal card benefit changes. A substantial reduction in zero priced trips can be clearly seen in both the Holiday and Normal representative week. Also of note is that the

average Adult fare of the Holiday week is 2 cents higher than the Normal week, down from a differential of 10 cents under existing Opal card benefits.

Table 10: Representative weeks trips and price distribution after Opal card benefit changes

Fare Up To	Holiday Week			Normal Week		
	Trip Distribution		Average Fare*	Trip Distribution		Average Fare*
	Adult	Concession		Adult	Concession	
\$0.00	6%	7%	–	6%	6%	–
\$2.00	22%	22%	\$0.97	25%	25%	\$1.02
\$3.00	30%	32%	\$2.19	28%	30%	\$2.17
\$4.00	20%	22%	\$3.12	20%	21%	\$3.12
\$5.00	17%	13%	\$4.09	17%	14%	\$4.09
\$7.00	4%	3%	\$5.56	4%	3%	\$5.60
Over \$7.00	1%	1%	\$7.23	1%	1%	\$7.27
ALL	100%	100%	\$2.46	100%	100%	\$2.45

* Weighted average adult fare excl GST, excl airport station access fees

The Opal card pricing and trips distribution after the Event 3 card benefit changes assumes no change in underlying trips demand including for:

- Intermodal transfer trips, which comprise 11% of all trips (13% of travel reward trips).
- Travel reward trips, which comprise 20% of trips in the Normal week and 15% of trips in the Holiday week.

The move in average Adult fare – Opal between the proposed fare structure and the existing fare structure for the Normal week is \$0.12 (Holiday week \$0.04). This comprises an increase from travel reward changes of \$0.28 (\$0.20) and a decrease from the intermodal transfer discount of \$0.16 (\$0.16).

Price sensitivity to demand changes is considered in Appendix A.

Combined impact of fare change events

The average Adult Fare for 2016-17 is presented in the following table, indicating expected prices changes around each Proposed Fare Change Event.

Table 11: 2016-17 Average Adult Fare calculation by Fare Change Event

Month(s)	Event	Holiday Wks		Ave Adult Fare - Opal	Opal Trip Weight	Ave Adult Fare - Ticket	Average Adult Fare
Jul16		–	–	\$2.32	93%	\$4.07	\$2.45
Aug16	1	–	–	\$2.32	93%	\$4.07	\$2.45
Sep16	2 & 3	–	–	\$2.45	93%	\$4.42	\$2.58
Oct16-Jun17		9	23%	\$2.45	93%	\$4.42	\$2.59
Full Year		9	17%	\$2.43	93%	\$4.36	\$2.56

Tables 7 / 10

Table 9

Conclusion

TfNSW has calculated the average Adult Fare for 2015-16 and for 2016-17 based upon representative trip distributions and three Proposed Fare Change Events.

After assessing the impact of these changes, TfNSW estimates that the average Adult fare for 2016-17 is \$2.56, an increase of 3.0% on the average Adult fare of \$2.49 for 2015-16.

The increase from 2015-16 to 2016-17 is 3.0%, below the 6.6% ceiling as set out in IPART's Determination.

Appendix A: Price sensitivity to demand changes

The following table presents average Adult fare sensitivity to:

- Changes in demand for travel reward trips (cases 1 and 2); and
- Changes in the travel mix between Opal card trips and Ticket trips (cases A and B).

Table 12: Price sensitivity to travel reward demand and Opal card to Ticket trips mix

		Baseline Demand		Case 1 Demand		Case 2 Demand		
		Demand Change	Average Adult Fare	Demand Change	Average Adult Fare	Demand Change	Average Adult Fare	
Travel mix change cases	<i>Travel reward demand change cases ---></i>							
	Opal card							
		Mon-Fri	–	\$2.63	(5.0%)	\$2.64	(15.0%)	\$2.66
		Sat	–	\$1.81	(20.0%)	\$1.88	(30.0%)	\$1.93
		Sun	–	\$1.05	(5.0%)	\$1.05	(15.0%)	\$1.05
		Average adult fare from September 2016 pre-September 2016		\$2.45		\$2.47		\$2.49
				\$2.32		\$2.32		\$2.32
		2016-17 average Adult fare - Opal card		\$2.43		\$2.45		\$2.47
		2016-17 average Adult fare - Ticket		\$4.36		\$4.36		\$4.36
	Baseline Travel Mix		Opal card % of qualifying trips		93.0%		92.9%	
		2016-17 trip weighted ave. Adult fare		\$2.56		\$2.58		\$2.60
		2015-16 trip weighted ave. Adult fare		\$2.49		\$2.49		\$2.49
		2016-17 average Adult fare increase		3.0%		3.8%		4.7%
Case A Travel Mix		Opal card % of qualifying trips		94.0%		93.9%		93.7%
		2016-17 trip weighted ave. Adult fare		\$2.54		\$2.56		\$2.58
		2015-16 trip weighted ave. Adult fare		\$2.49		\$2.49		\$2.49
		2016-17 average Adult fare increase		2.2%		3.0%		3.9%
Case B Travel Mix		Opal card % of qualifying trips		95.0%		94.9%		94.8%
		2016-17 trip weighted ave. Adult fare		\$2.52		\$2.54		\$2.56
		2015-16 trip weighted ave. Adult fare		\$2.49		\$2.49		\$2.49
		2016-17 average Adult fare increase		1.5%		2.2%		3.1%