



FILE NOTE

DATE 11/10/2013
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SUBJECT OIA - Concessionary Fares for Tertiary Students
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1. Introduction

This note is a response from GWRC relating to an Official Information Request (OIA)

‘On 6th May 2013 The Dominion Post cited Economic Well-Being Committee chairperson Peter Glensor as stating the cost of implementing a tertiary concession bus fare as \$4million per annum. I am interested in the origin of this value. To this end I request records of all advice and correspondence received by Mr Glensor, including any memos, reports, data or other documentation used in arriving at this figure.’

This note outlines the assumptions and contains the data that underpin the calculation of the estimated \$4 million per annum cost of implementing a tertiary concessionary bus fare.

Some of the assumptions are basic and supported by limited available data, however given the lack of alternative information and the purpose of the fare structure review - to produce a high-level assessment of the impact of potential changes to the PT fare structure - the assumptions and level of detail summarised in the Fare Structure Options Report and reported in this note are considered adequate.

1.1 Survey Data

Data was obtained from Victoria University, Massey University and Wellington Hospital travel plans surveys and provides information relating to the mode that staff / students use in order to travel to University.

Table 1 below shows the results of these surveys showing the percentage of staff / students travelling by each mode.

Table 1 Travel to Work Survey Results

Mode	Vic Uni - Staff	Vic Uni - Students	Massey Staff	Wellington Hospital
Drove (Alone)	22%	7%	31%	41%
Drove with Passenger	14%	-	11%	12%
Bus	20%	24%	13%	9%
Walk	18%	36%	31%	20%
Train / Ferry	9%	22%	7%	4%
Passenger in Car	6%	7%	3%	8%
Cycle	4%	2%	3%	3%
Motorcycle	2%	1%	1%	2%
No Work	4%	-	-	-
Work from Home	1%	-	-	-
Other	-	1%	-	1%

Given that the Massey and Wellington Hospital surveys only cover staff, who will have different circumstances / travel needs to students, it was decided that the Victoria University student survey results should be used for all three establishments.

1.2 Student Role

Information was obtained relating to the number of ‘full-time’ and ‘part-time’ students enrolled at Victoria University, Massey University and Wellington Hospital. This data is presented in **Table 2**. To estimate the number of full-time student equivalents (FTEs) it is assumed that part-time students attended University for 50% of the time.

Table 2 Student Role (Estimate)

	Full Time Students	Part Time Students	Total Students	Student FTE
Vic Uni	17,400	4,600	22,000	19,700
Massey	3,000	1,700	4,700	3,850
Hospital	1,000		1,000	1,000
Total	21,400	6,300	27,700	24,550

1.3 Yearly Student PT Trips

In order to calculate yearly student PT trips from survey and student role data the following assumptions have been made:

- Students are at University for 38 weeks per year
- Students make 8 single trips to / from University per week

Table 3 below shows the number of annual single PT trips by mode and establishment.

Table 3 Annual One-Way Student Trips

	Car	Walk	Bus	Train	Other	Total	Total PT (Bus + Train)
Vic Uni	0.42	2.16	1.44	1.32	0.66	5.99	2.75
Massey	0.08	0.04	0.28	0.26	0.13	1.17	0.54
Hospital	0.02	0.11	0.07	0.07	0.03	0.30	0.14
Total	0.52	2.31	1.79	1.65	0.82	7.46	3.43

1.4 Average Fares

In order to calculate the potential revenue and patronage impact of providing a 50% reduction in the fare for tertiary students, relative to current adult fares, an estimate of average adult bus and rail fares was required.

This was derived from annual patronage and revenue data provided by GWRC, bus operators and Kiwirail to GWRC. The revenue component of this data is confidential.

The resulting average adult fares, excluding GST and taking into account the various different ticket types available are:

- Bus - \$2.43
- Rail - \$3.58

1.5 Demand and Revenue Estimates

Table 4 below shows the tertiary PT (bus and rail combined) demand and revenue under the current fare structure. **Appendix A** presents the same analysis separately for bus and rail.

Table 4 Current Adult Demand and Revenue Estimates

Ticket Type	Demand (million pa)	Revenue (\$ million pa)	Average Fare
Adult - Supergold	1.9	5.0	2.59
Adult - Tertiary	3.4	10.2	2.98
Adult - Normal	21.7	62.3	2.87
Total	27.1	77.5	2.87

In order to generate an estimate of future demand an elasticity with respect to fare of -0.4 has been used. This figure is grounded in both New Zealand and international research – in simple terms it means that a 50% decrease in fare for tertiary students will result in a 20% increase in demand.

Using such ‘standard’ elasticities is deemed adequate for the fare structure review, given that it is a high level initial piece of analysis exploring a wide range of options. Should changes to tertiary fares be taken forward and assessed in more detailed it would be preferable to derive a more robust elasticity by

Table 5 below shows the tertiary PT (bus and rail combined) demand and revenue under the revised scenario with a 50% reduction in tertiary fares. **Appendix A** presents the same analysis for bus and rail separately.

Table 5 Future Adult Demand and Revenue Estimate – 50% Tertiary Fare

Ticket Type	Demand (millions)	Revenue (\$m/pa)	Avg Fare	Change
Adult - Supergold	1.9	5.0	2.59	0.0%
Adult - Tertiary	4.0	5.9	1.48	-50.5%
Adult - Normal	21.7	62.3	2.87	0.0%
Adult - All	27.6	73.2	2.65	

It shows that an additional 800,000 PT trips are generated as a result of introducing a 50% tertiary fare discount. As a consequence, revenues fall by \$4.3 million (\$5.9 minus \$10.2, approximated to \$4 million).

Given that the amount of funding GWRC receives annually from NZTA is fixed and related to farebox recovery targets, any shortfall in revenue through the introduction of a discount for tertiary students would have to be borne by GWRC.

1.6 Summary

This note has:

- summarised findings from the Victoria University travel to work survey
- documented the number of students at Victoria, Massey and Otago (Wellington Hospital) Universities
- provided estimates of trips / to from University, broken down by mode, and the underlying assumptions behind these estimates
- tabulated average bus and rail fares used for the analysis
- identified the demand elasticities used to estimate the increase in PT demand resulting from the introduction of a 50% tertiary fare
- highlighted changes in patronage and revenue as a result of introducing a 50% tertiary fare

1.7 Limitations

It has been acknowledged throughout this note that the findings are based on a number of assumptions. The level of detail and assumptions used is deemed appropriate given that the fare structure review is a high-level investigation looking into a number of options and the impact that these options might have upon patronage and revenue.

Should a 50% tertiary fare discount be taken forward, it is likely that more detailed analysis would be required to determine the exact impact that such policies might have upon patronage and revenue.

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Appendix A

Table 6 Bus - Current Adult Demand and Revenue Estimate

Ticket Type	Demand (millions)	Revenue (\$m/pa)	Avg Fare
Adult - Supergold	1.6	3.8	2.40
Adult - Tertiary	1.8	4.4	2.43
Adult - Normal	13.5	32.8	2.43
Adult - All	16.8	40.9	2.43

Table 7 Bus - Future Adult Demand and Revenue Estimate – 50% Tertiary Fare

Ticket Type	Demand (millions)	Revenue (\$m/pa)	Avg Fare	Change
Adult - Supergold	1.6	3.8	2.40	0.0%
Adult - Tertiary	2.2	2.6	1.20	-50.6%
Adult - Normal	13.5	32.8	2.43	0.0%
Adult - All	17.2	39.1	2.27	

Table 8 Rail - Current Adult Demand and Revenue Estimate

Ticket Type	Demand (millions)	Revenue (\$m/pa)	Avg Fare
Adult - Supergold	0.4	1.2	3.44
Adult - Tertiary	1.6	5.9	3.59
Adult - Normal	8.2	29.6	3.59
Adult - All	10.2	36.7	3.58

Table 9 Rail - Future Adult Demand and Revenue Estimate – 50% Tertiary Fare

Ticket Type	Demand (millions)	Revenue (\$m/pa)	Avg Fare	Change
Adult - Supergold	0.4	1.2	3.44	0.0%
Adult - Tertiary	1.8	3.3	1.80	-49.8%
Adult - Normal	8.2	29.6	3.59	0.0%
Adult - All	10.4	34.1	3.27	