Auckland/Wellington Public Transport Comparison

Recommendation

That the board:

i. Receives the report.

Executive summary

A comparison of Auckland and Wellington rail services indicates that Auckland is more expensive than Wellington on a per passenger and per kilometre basis. Many of these key differences will be mitigated when Auckland introduces a new electric fleet of trains. Some are due to the mature nature of Wellington's public transport usage and to topographical differences.

Background

The following analysis is not a comprehensive evaluation; it is a comparison of some key statistics at a point in time, based on publically available information.

The time for a comprehensive comparison will be after new bus contracts are in place in both cities, having adopted the PTOM contracting model, and after Auckland's electric trains are in service. Only then will more meaningful like with like comparisons be achievable.

Nevertheless, the following quick snap-shot provides some useful insights.

While the focus of this memo is on rail, the rail network does not exist in isolation from other public transport. For example, Auckland has a Northern Bus-way and makes extensive use of ferries. Comparison of the wider and integrated public transport system is also considered briefly. The greatest difference between the two cities relates to rail. Wellington has a relatively new electric train fleet servicing a long-established clientele; Auckland is about to change an old diesel service in an environment of growing patronage.

Key Statistics for Rail

		FY 2012		FY 2013	
		AkId	Wgtn	**AkId**	Wgtn
Passengers Carried	# million	**10.9**	11.3	**10.0**	11.4
Passenger Kilometres	million km	**151**	268	**136**	270
Average Fare	$	**2.92**	3.37	**2.96**	3.56
Punctuality [1]	%	**80.6**	91.6	**84.8**	93.9
Reliability	%	**98.0**	98.8	**98.0**	99.2
Customer Satisfaction	%	82	48	79	59
Accessibility	% trains	**100**	100	**100**	100
Track Length (at year end)		**96.8**	159.0	**96.8**	159.0
Stations		**42**	49	**42**	49
Operational Expenditure	$ millions	**106.1**	80.4	**112.7**	81.2
Operational Expenditure per passenger	$	**9.7**	7.1	**11.2**	7.1
Operational expenditure/car km	$	**10.2**	7.3	**11.3**	7.0

Note: Wellington data sourced from Wellington Metropolitan Rail 2012/13 Annual Report

Patronage

Auckland has more than 70 million public transport journeys a year. Wellington, a city one third the size, has around 38 million.

Within these totals there is considerable variation; Wellington has around 100,000 ferry journeys while Auckland has over five million. The number of rail journeys is similar at around 11 million for each city.

Wellington has low growth in patronage while Auckland's passenger numbers have grown rapidly in five years and are forecast to continue to do so.

There are a number of factors which influence PT usage statistics in both cities:

- Wellington has a long history of public transport usage while Auckland needs to attract patrons to use the services after a long period of poor service offering. This applies to bus as well as train services
- North of Wellington, urban development runs in two narrow strips; the Hutt Valley and along the coast. This development is better suited to a rail network than the more spread-out nature of Auckland's urban growth. This is reflected in average trip length which is 23 kms in Wellington but only 16 kms in Auckland. In addition, in the Wellington region, 55% of people live within 400 metres of a public transport stop[1].
- Wellington has new trains. Patronage declined[2] over an extended period when Wellington upgraded platforms and track ahead of new trains. Auckland is currently in a period of transition to new trains.
- Wellington bus patronage is influenced by the existence of feeder buses to rail (for example Titahi Bay & Whitby to Porirua Station and Waitangirua and Stokes Valley to Lower Hutt) which are not yet a common feature of Auckland's integrated network (and in essence double counting some of Wellington's patronage)
- Congestion is less acute in Wellington (although public acceptance of peak hour delay is no higher)

Wellington 2010/11 (From Wellington regional transport Plan 2011 . No breakdown avaliable for 2012/13 year)		**Rail**	**Bus**	**Ferry**	**Cable Car**	**Total**
Passenger Fares	$M	35.1	48.5	1.1	1.7	**86.4**
Other income	$M	Not disclosed	Not disclosed	Not disclosed	Not disclosed	
Total Operating income	$M	**35.1**	**48.5**	**1.1**	**1.7**	**86.4**
Government (NZTA) subsidy	$M	17.7	17.4	0.1	0	**35.2**
Rates Funding	$M	11.8	17.4	0.1	0	**29.3**
Total Operating Funding (subsidy)	$M	**29.5**	**34.8**	**0.2**	**0**	**64.5**
Patronage	**M**	11.1	24.3	0.1	1.1	**36.6**
Operational funding (subsidy) per trip	**$**	2.66	1.43	2.00	0.00	**1.76**

Auckland 2012/13		**Rail**	**Bus**	**Ferry**	**Total**
Fare box	$M	27.1	10.5	2.8	**40.4**
Other income	$M	2.1	0.6	1.3	**4.0**
Total Operating income	$M	**29.2**	**11.1**	**4.1**	**44.4**
Government (NZTA) subsidy	$M	49.6	58.0	5.4	**113.0**
Auckland Council Funding	$M	33.9	57.3	5.0	**96.2**
Total Operating Funding (subsidy)	$M	**83.5**	**115.3**	**10.4**	**209.2**
Patronage	**M**	10.0	53.5	5.5	**69.0**
Operational funding (subsidy) per trip	**$**	8.35	2.16	1.89	**3.03**

[1] 77% are within 800 metres (10 minute walk)
[2] From 11.9 million in 2009 to just over 11 million in 2010 and 2011. Patronage has still not regained 2009 levels

Financial

The key financial comparatives for rail can be considered as:

- Overall cost
- Who funds what portion of the cost
- Fares paid by customers

Auckland is more expensive to operate but customers pay slightly lower fares. Because of this ratepayers and NZTA are currently funding a larger portion (and dollar value) of the cost.

Financial comparisons of cost are difficult because:

- Differences in the two networks in terms of length, layout and topography
- How the networks can be operated. For example Wellington is able to offer express services.
- Differences in the fleets age and the type of units
- The Wellington network is mature whereas Auckland is going through a period of significant change
- The analysis is based at the level of detail publicly available and AT is not privy to a more detailed breakdown of the Wellington costs.

An expenditure comparison is shown in the following table:

	FY 2012		FY 2013	
$000's	**Akld**	Wgtn	**Akld**	Wgtn
Labour	**41,486**	23,556	**44,196**	24,900
Materials & Supplies		1,132		883
External / Purchased services		2,733		2,068
Lease & rentals		1,253		691
Fuel & traction	**11,740**	4,356	**11,287**	4,196
Other expenses		1,673		1,432
KiwiRail internal contracts		2,574		2,554
KiwiRail overheads		2,892		2,900
Other Operating	**4,137**		**1,806**	
Administration	**3,844**		**4,613**	
Contract Margin	**2,552**	3,300	**2,939**	3,220
Train Operations	**63,758**	**43,469**	**64,842**	**42,844**
Track Access	**10,720**	15,749	**10,536**	17,486
Station expenditure	**8,311**	1,597	**9,651**	1,630
Rolling Stock Maintenance	**20,009**	9,282	**21,392**	9,278
Wiri Depot				
Insurance	**945**	1,956	**1,045**	1,915
Security		1,182		1,105
Call Centre/Marketing (AT Costs)	**307**		**281**	
Total Expenditure	**104,050**	**73,235**	**107,747**	**74,258**
Metlink & Management Services		7,202		6,983
Total	**106,077**	**80,437**	**112,688**	**81,241**

Fuel and traction charges are higher in Auckland. This is explained by the relative differences inherent in running an aging diesel fleet compared to a new electric fleet, with an electric fleet being much more efficient.

Fuel consumption for the Auckland diesel trains is measured as litres/kilometre, the average consumption being between 3.0 and 3.54 litres/km, with a consequential fuel cost per service kilometre being $3.86 in 2012/13. The equivalent energy consumption for the electric trains in Wellington for the same year was ~$1.22 per service kilometre.

The greatest contributing difference is in labour. Both centres operate under a common employment agreement and it is understood Wellington operates the same level of staffing on a train other than ticket inspectors.

Auckland uses an on-board train manager on each train, with ticket collection occurring at the station. In Wellington, most stations have no staff (ticket or security) with ticket collection and purchase occurring on trains. Wellington does not use revenue protection staff (ticket inspectors).

Given the level of information we have available we cannot provide definitive reasons for the variance however we suspect it is due to a number of factors including:

- The mixed fleet Auckland operates, and previous KiwiRail hire arrangements, lead to inefficiencies in driver rostering and was more expensive than employing the drivers directly as we now do via Tranzdev.
- Longer relative journey times in Auckland compared to Wellington for the same length of trip, a factor of the faster journey times achievable with electric trains and the express operations in Wellington. While the average journey length travelled by each scheduled service is similar for both operations the average trip time in Auckland trains is 38% more than Wellington and the average speed is 40% lower. This will have a significant effect on number of crew hours. The new EMUs will reduce existing travel times by around 10% but the stations in Auckland are generally closer together than those in Wellington which will continue to impact journey times.
- Auckland's costs include all Tranzdev wages and salaries – drivers, train managers, revenue protection staff, supervisors, rostering and planning staff, communication and station customer services staff and all Tranzdev Head Office staff plus all their related overheads. It is not clear what costs are actually included in the Wellington costs and there is a feeling, based on past studies that many of the support role costs are part of KiwiRail Corporate overheads and not specifically employed by, or identified against the cost of, the Wellington metro operations. The costs of some of these functions may also be included as part of the Wellington Regional Council costs.
- We believe that Auckland spent more time on driver training with the mixed fleet, and varying levels of driver qualifications required and the changes needed to familiarise drivers with the change from diesel to electric operations.
- We could not replicate Wellington's fare collection staffing model. On all three Wellington lines, the first outbound / last inbound stop[3] is a considerable distance from Wellington station. This allows one staff member per two carriages at peak hours and one per train at other times to collect all fares between the first / last stop and Wellington. In Auckland, fares could not be collected in the time between Newmarket and Britomart, requiring fare collection to be station, rather than train-based. This impacts both staffing and the potential for fare leakage.

[3] Crofton Downs, Takapu Rd and Petone are each at least ten minutes from Wellington, allowing ticket staff to move through the train

Auckland has lower track access charges than Wellington. This is because the:

- Auckland network is smaller (96.8km v 159.0km)
- The model used to split track access charges between passenger and freight services differs between the two regions
- Level of work KiwiRail needed to undertake on the lines in those years will be different and dependant on each area in terms of maintenance, renewals etc. It is understood that there were some wash out events that impacted Wellington in the years under review and some renewal costs in Auckland were funded through major upgrade projects rather than through the access agreement.

Station related expenditure is higher in Auckland. This will be due to:

- Auckland stations are operated to higher levels of service in terms of quality of experience, safety, security (with extensive use of CCTV and security patrols) and on-platform ticketing systems. This will result in higher operating costs than the equivalent for Wellington stations (see customer satisfaction below).
- Auckland monitors its stations 24/7 through the security control and incident response rooms. We understand Wellington has no equivalent service.
- Auckland costs include the operating costs for Britomart station (approx. $3.5 million p.a.) while there is no corresponding cost in Wellington. We understand that the Wellington Railway Station is a shared use facility between Victoria University (West Wing), New World Supermarket (ground floor) and KiwiRail Group activities which includes the national Train Control centre.

Rolling stock maintenance expenditure is significantly higher in Auckland due to:

- The significantly higher costs needed to maintain an aging diesel fleet compared to a new electric fleet
- Auckland “rolling stock maintenance” costs also include (approximately $5.7 million) of other costs namely KiwiRail management overheads, facilities costs and management fees related to the “maintenance programme” and also the hire of the diesel locomotives
- The combined relative cost/kilometre for the Auckland diesel fleet is $7.32 per service kilometre compared to $2.71 for Wellington. This line item is anticipated to reduce significantly under the new electric train maintenance agreement with CAF.

It is expected, in time, for the comparisons between the two networks to become more favourable with the changes to electric units and the transfer of KiwiRail drivers to Tranzdev allowing us to utilise a single pool of drivers on a single fleet.

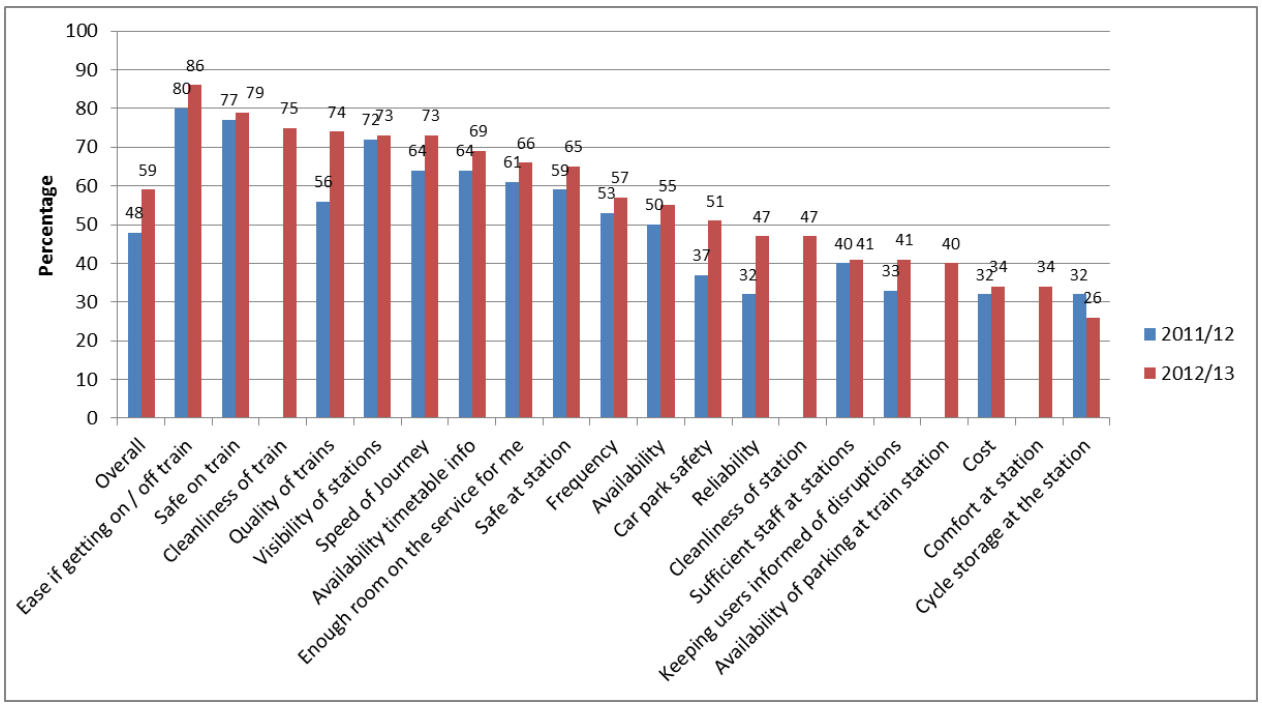
However, the different service patterns on the networks, their topography and layout and level of customer service provision will always mean the actual service hours per kilometre will disadvantage Auckland.

Operational and Customer

The customer experience is measured differently between Wellington and Auckland and the service offering is also different (and at a different stage in the life-cycle).

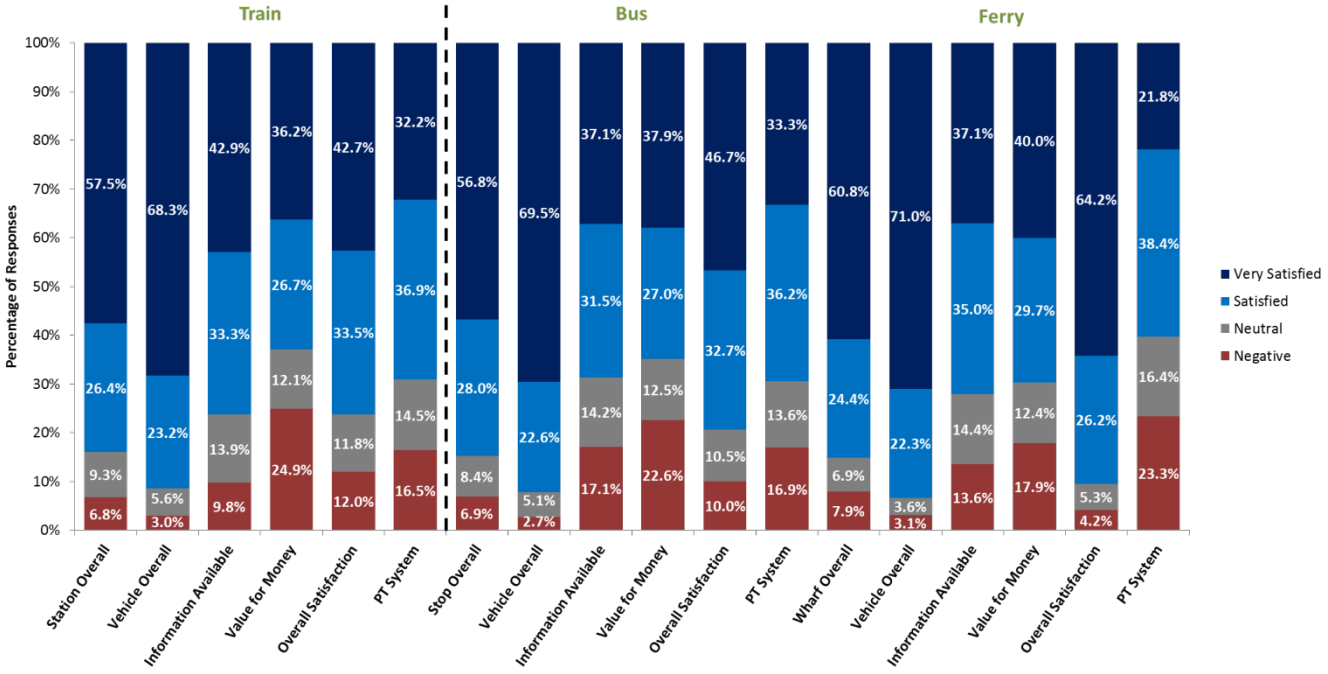
Wellington uses a composite measure of satisfaction which has improved from 48% in 2011/12 to 59% in 2012/13. Within this Wellington achieves very low scores for factors such as cycle storage, comfort at stations and parking at stations but high scores for quality of trains, personal safety and speed of service.

Wellington Surveyed Customer Satisfaction - Rail



Auckland uses a different method of assessing customer satisfaction and the results are not truly comparable.

Auckland Surveyed Satisfaction by Mode



The high score Wellington self-assesses as the condition of stations may reflect physical condition but clearly does not fully meet customer expectations; an area where Auckland will achieve considerable advantage as new stations are brought on stream of a similar quality to Panmure.

Average Asset Condition (1 = excellent, 5 = extremely poor)	**2012**	**2013**
Stations		
Johnsonville Line	2.2	2.2
Kapiti Line	2.0	1.6
Melling Line	1.6	1.6
Hutt Valley Line	2.4	2.0
Wairarapa Line	2.0	2.0
Trains		
Ganz Mavag	3.7	3.7
Matangi	1.0	1.0
SW Carriages	2.2	2.2

Further dimensions to the customer experience are fares, travel times and frequency as shown in the two tables below:

Travel Choices to CBD Morning Peak (7:00am to 9:00am arrivals)

to **Wellington** Station from	Distance (km)	Journey Time (min)	Travel options	Single Fare (Cash) $
Waikanae/Paparaumu	55.4	57	4	12.50
Plimmerton	24.5	29	8	8.00
Porirua	17.7	21	12	6.50
Upper Hutt	32.4	38	8	9.00
Taita	20.6	26	11	6.50
Petone	10.5	10	16	5.50
Melling	13.5	18	5	5.50
Johnsonville	10.5	21	7	5.00
Masterton	91.0	103	3	18.00

Travel Choices to CBD Morning Peak (7:00am to 9:00am arrivals)

to **Britomart** from	Distance (km)	Journey Time (min)	Travel options	Single Fare (Cash) $
Pukekohe	52.9	70	6	10.30
Papakura	34.7	53	12	7.90
Manukau	24.4	42	6	6.80
Papatoetoe	21.6	35	18	5.60
Waitakere	31.9	59	4	7.90
Swanson	28.0	53	8	6.80
Onehunga	13.6	25	4	4.50
Glen Innes	9.4	15	12	3.40
Ellerslie	8.5	18	10	3.40

Not only is the number of services in Auckland at least as good as those in Wellington, there is a significant difference in the needs of passengers. Wellington makes frequent use of express services at peak time to move people to the city centre quickly. This means that passengers at intermediate stations do not receive the same level of service as those at major stations. A primary driver for this is the nature of Wellington employment. Lambton Quay has the highest density of employment of any statistical unit in New Zealand with 38,000 people recording a workplace address there[4]. Auckland's public transport serves a more diverse employment pattern, meaning faster trips to downtown may not be best suited to our needs.

Next steps and conclusions

Auckland is not yet at a level of patronage achieved by Wellington. Wellington's growth in PT patronage is flat while Auckland's is projected to grow significantly over the next decade or more. Public Transport, and particularly train services, has high fixed cost and improved patronage should improve most cost ratios.

There is not complete alignment in how we measure many of our targets and there may be benefit in aligning these with Wellington over time.

Further work (with Wellington) would also be needed to identify differences in cost structure.

Document ownership

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[4] Data is from 2006 census and the source is a MINISTRY OF Transport Briefing to the Minister of Transport.