TE MANATŪ WAKA
MINISTRY OF TRANSPORT

Domestic Transport Costs and Charges

Information session – Urban Public Transport

29 August 2022

TE MANATŪ WAKA
MINISTRY OF TRANSPORT

Disclaimer

All reasonable endeavours are made to ensure the accuracy of the information in the draft report. However, the information is provided without warranties of any kind including accuracy, completeness, timeliness or fitness for any particular purpose.

Te Manatū Waka the Ministry of Transport excludes liability for any loss, damage or expense, direct or indirect, and however caused, whether through negligence or otherwise, resulting from any person's or organisation's use of, or reliance on, the information provided.

Results included in this file may be subject to revision as the project team finalises the estimates for the DTCC Final Report.

TE MANATŪ WAKA
MINISTRY OF TRANSPORT

Contents

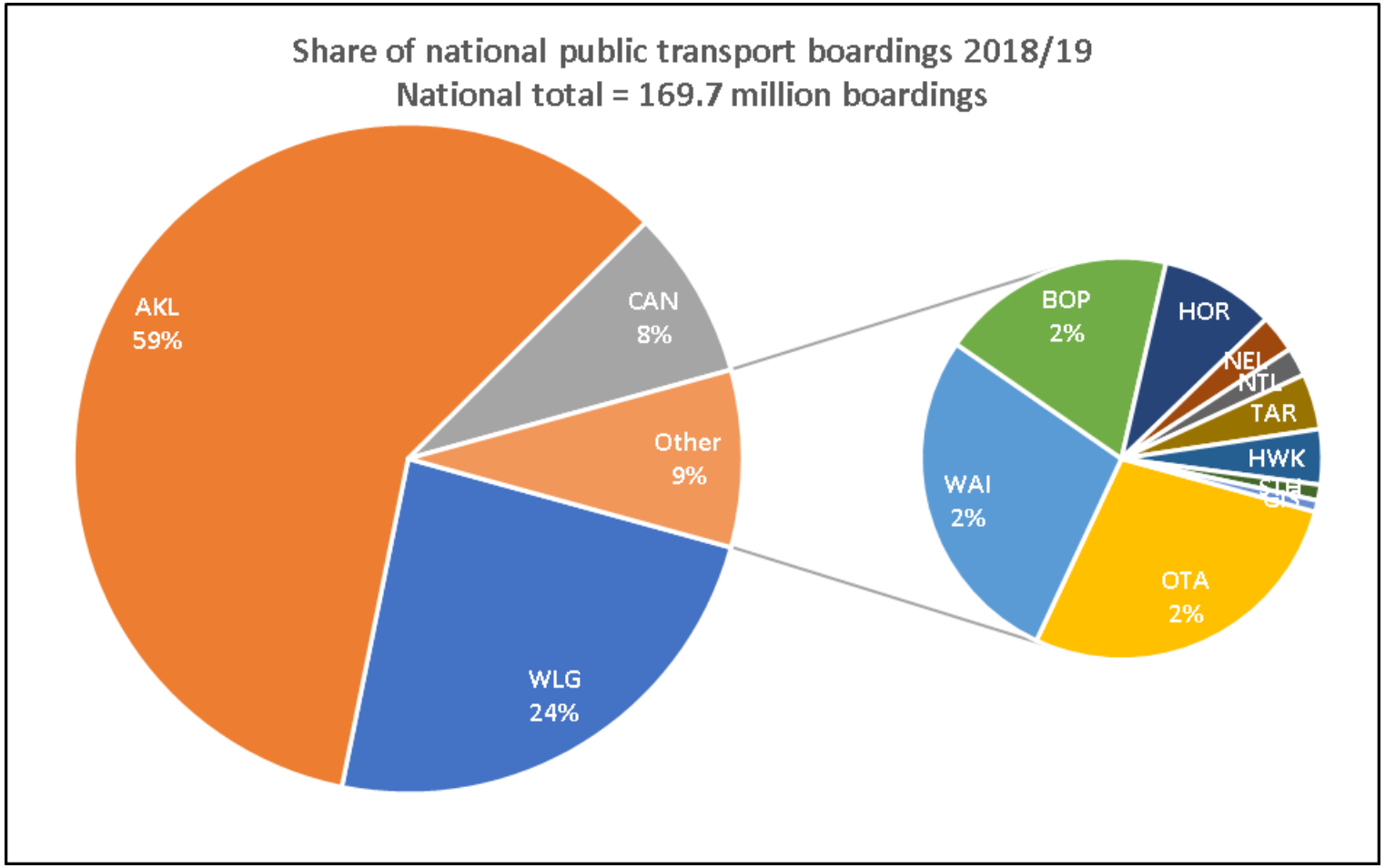
1. Sector overview

NZ Urban Public Transport (UPT) Sector

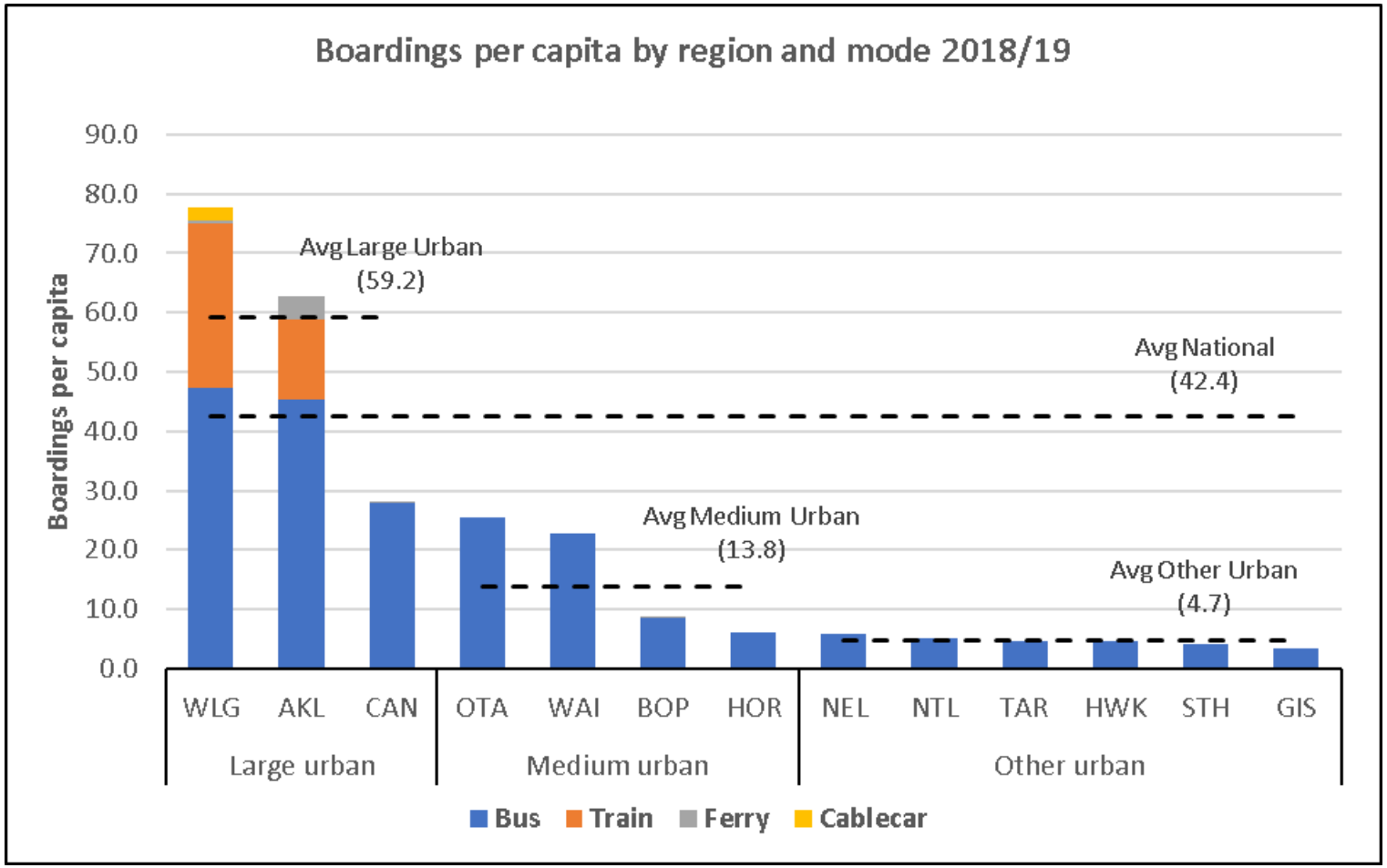
- Urban (local) PT services
- Bus (all regions), Rail (AKL, WLG), Ferry (AKL, other)
- Managed by regional councils
- Funded jointly RCs, central government
- c$1500 million pa business (gross costs)
- Heavily subsidised (c 30% cost recovery)

2. National picture

2.1 Patronage (boardings) – national and regional statistics

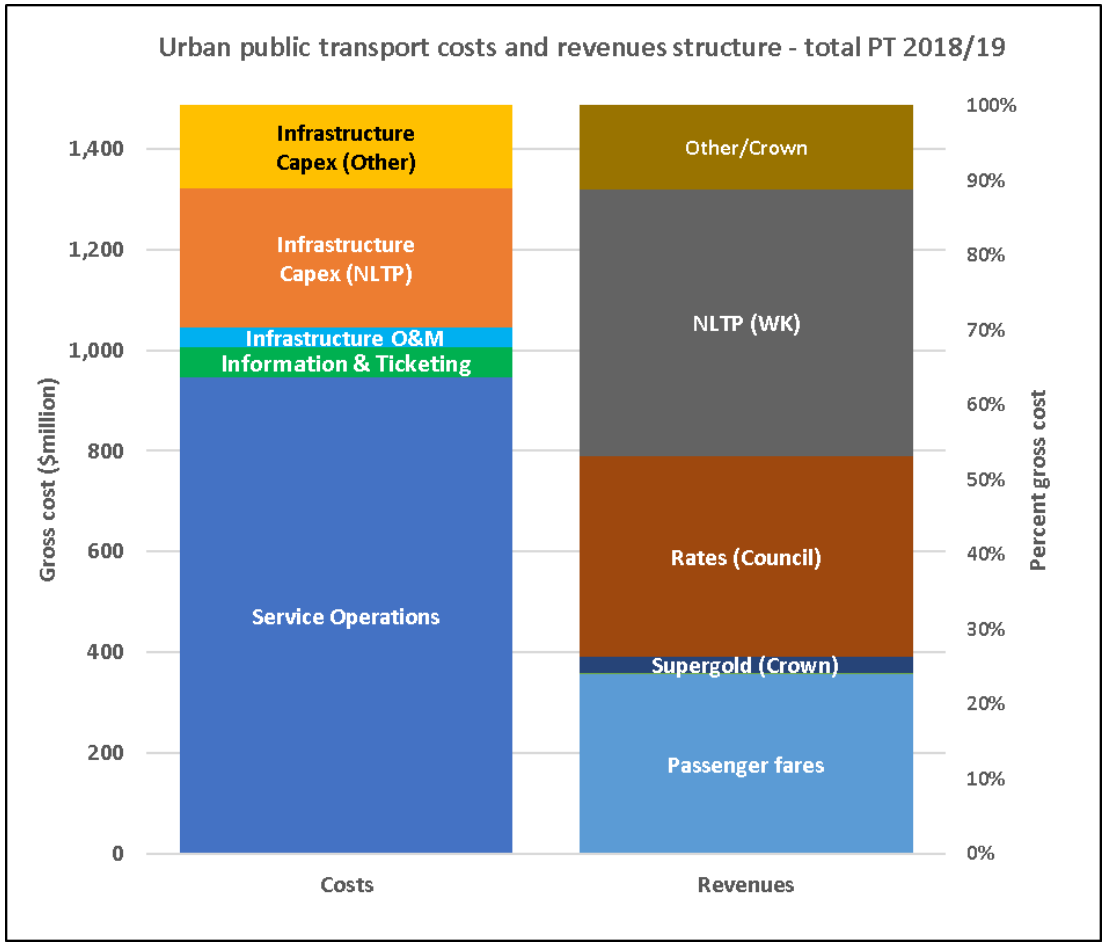


2.2 Patronage by region and mode



DRAFT RESULTS

2.3 National costs and revenues structure

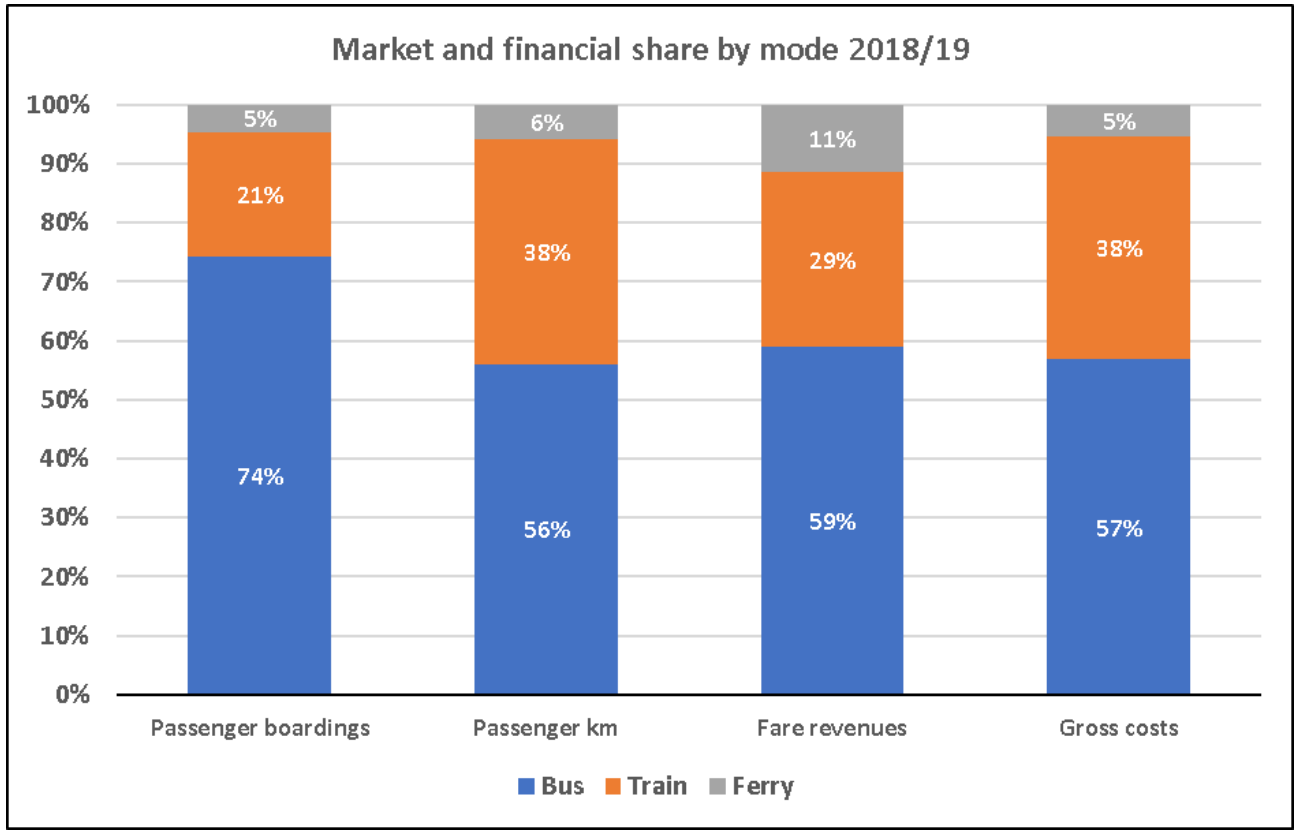


Category	Type	Costs	Revenues
Opex	Service Operations	945	
	Information & Ticketing	60	
	Infrastructure O&M	39	
Capex	Infrastructure Capex (NLTP)	277	
	Infrastructure Capex (Other)	166	
User	Passenger fares		358
	Third party		2
Subsidy	Supergold (Crown)		31
	Rates (Council)		400
	NLTP (WK)		531
	Other/Crown		166
Total		**1,487**	**1,487**

TE MANATŪ WAKA
MINISTRY OF TRANSPORT

DRAFT RESULTS

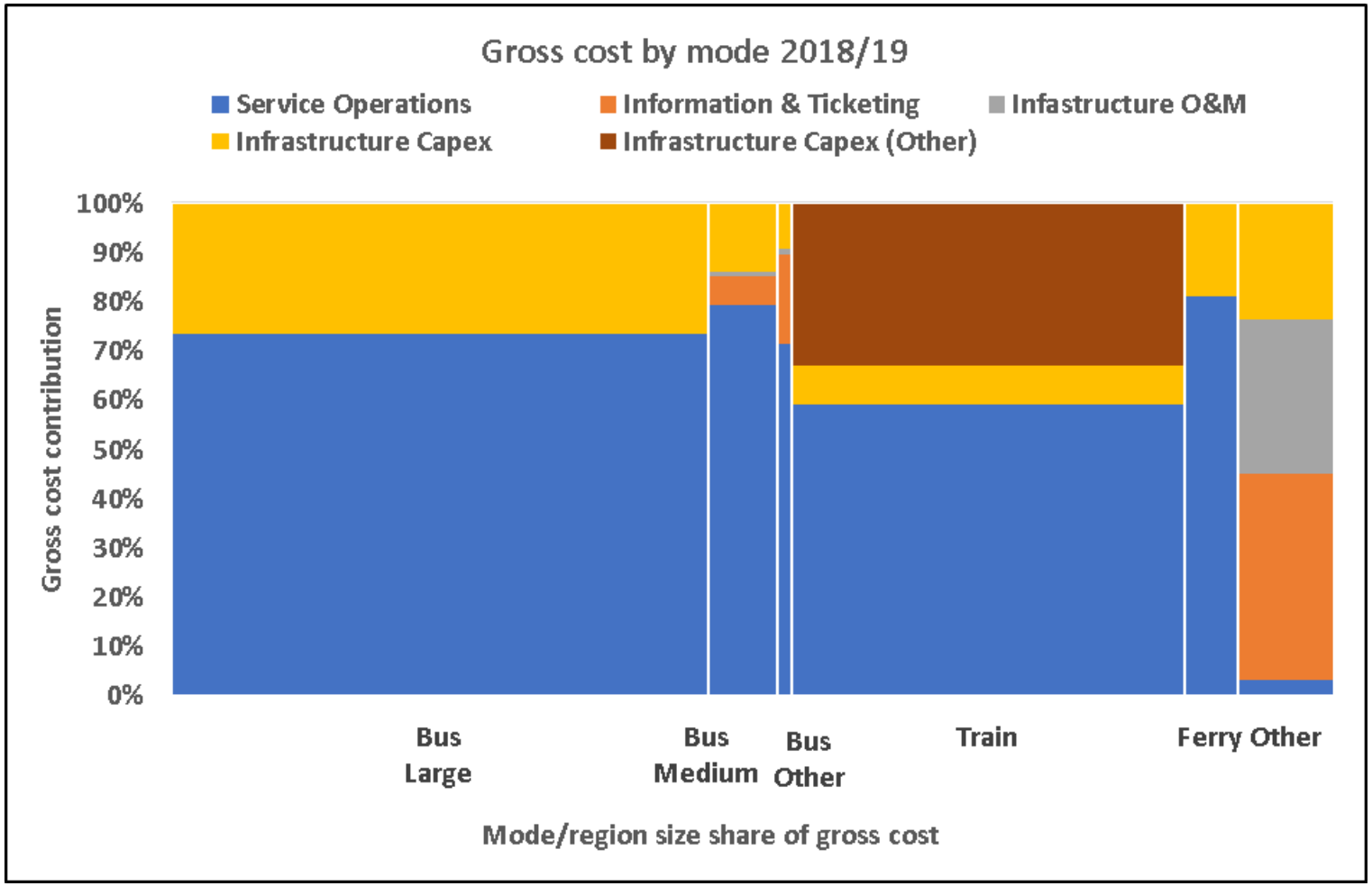
2.4 National market split by mode



	Bus	Train	Ferry	All	Total
Passenger boardings	126.0	35.8	7.9	-	**169.7**
Passenger km	890.3	606.9	90.8	-	**1,588.1**
Fare revenues	212.4	106.0	41.3	-	**359.7**
Gross costs	771.3	513.3	72.0	130.8	**1,487.4**

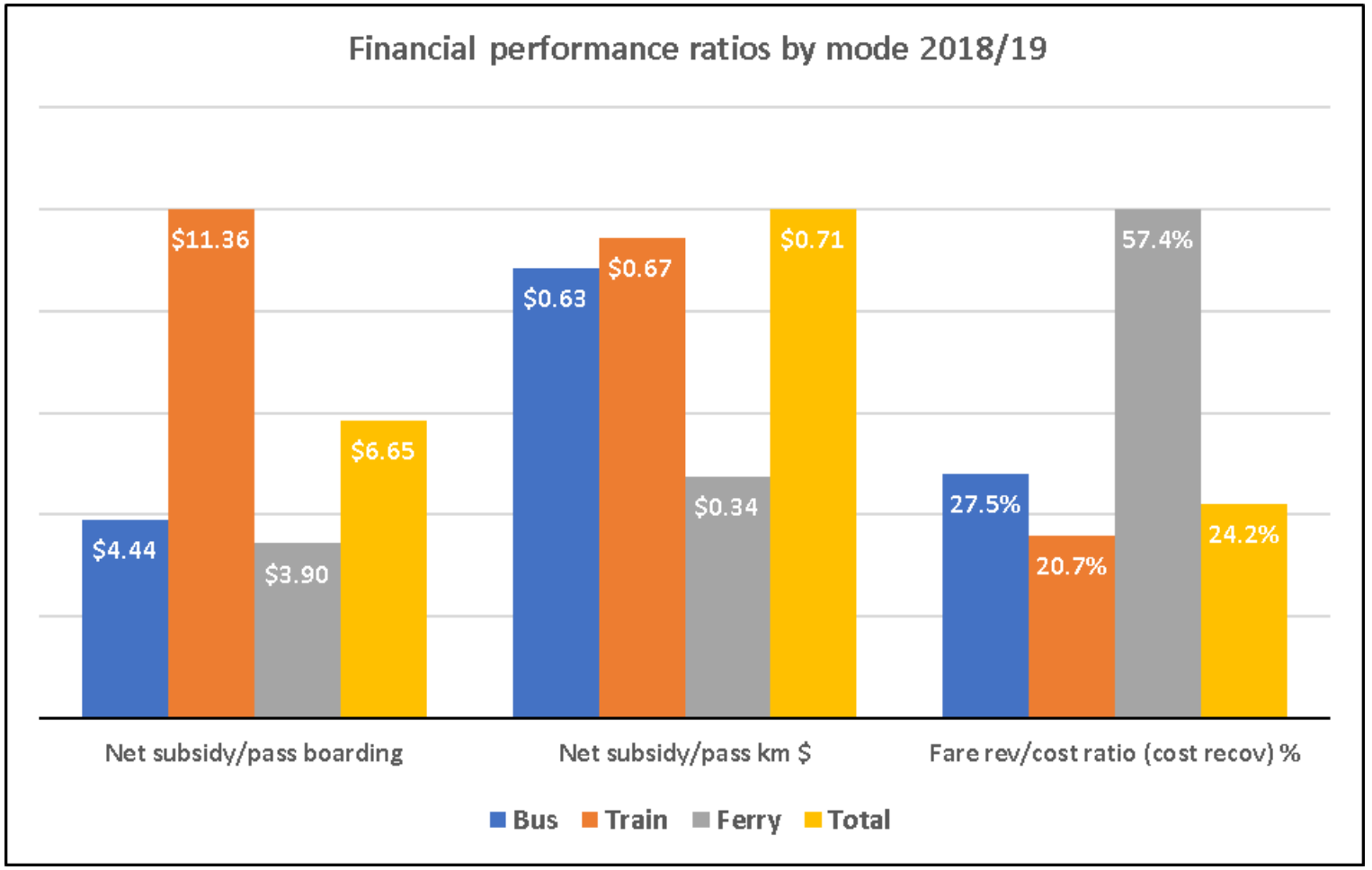
DRAFT RESULTS

2.5 Gross costs by mode and expenditure category



DRAFT RESULTS

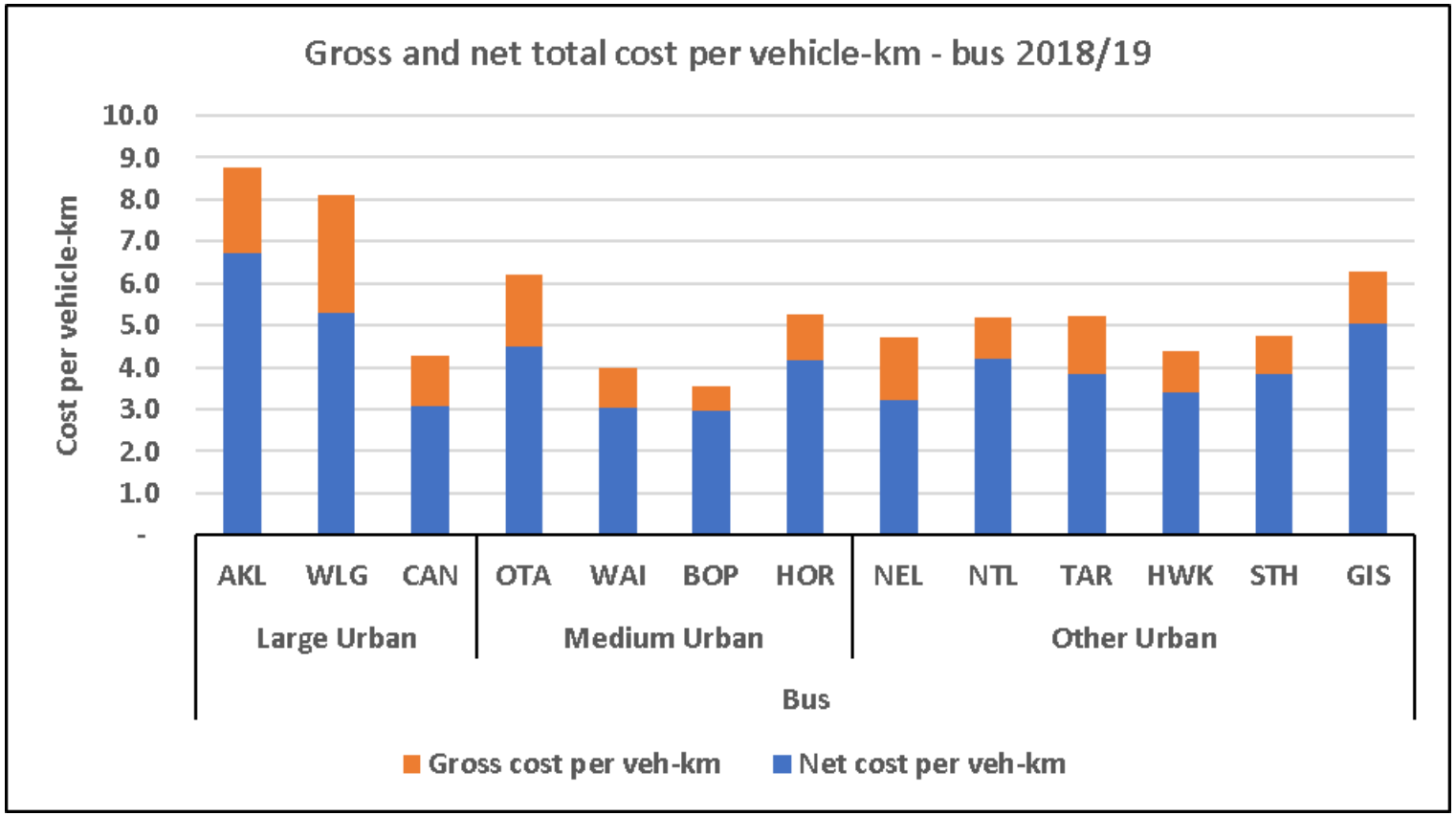
2.6 Financial performance ratios by mode



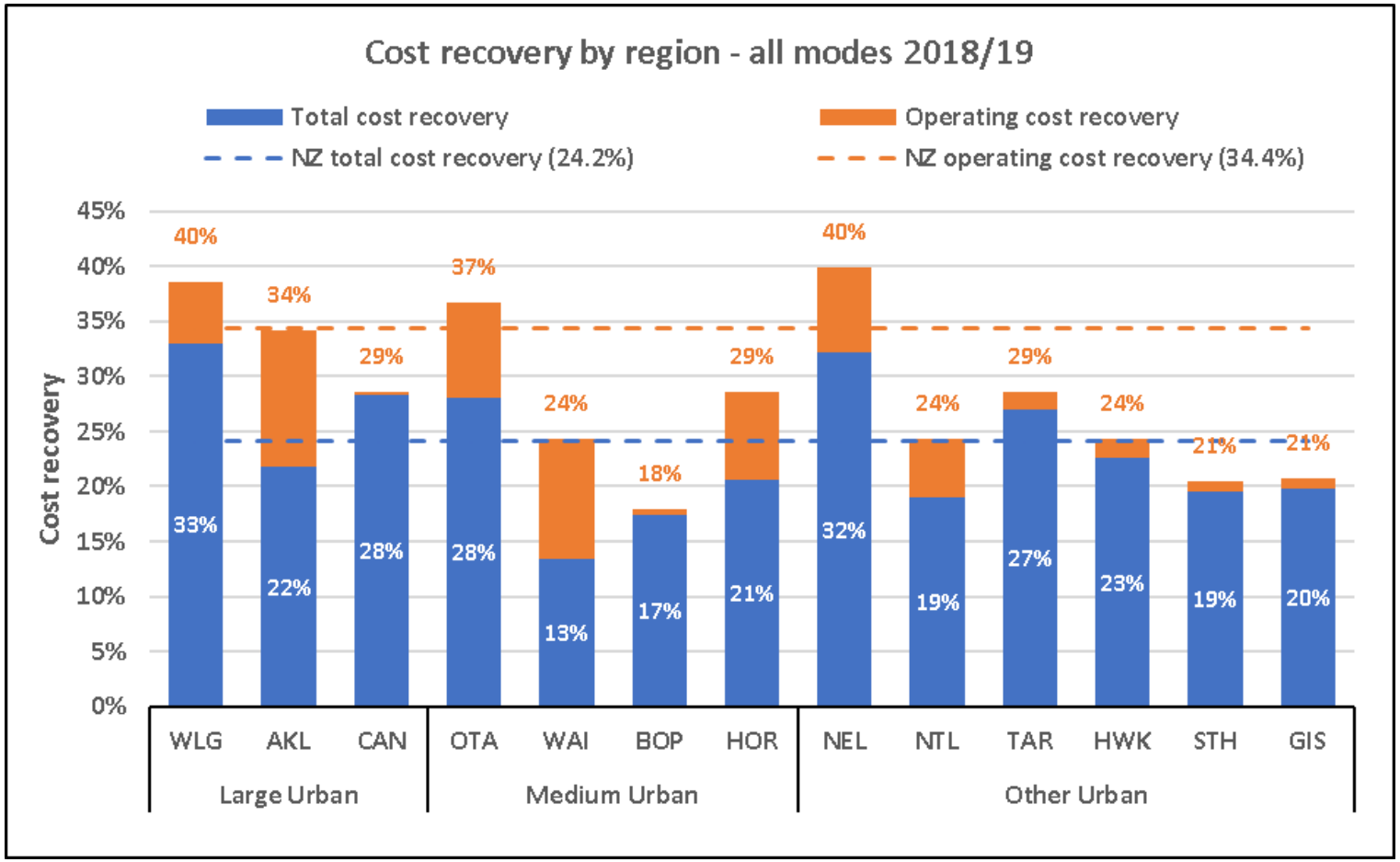
TE MANATŪ WAKA
MINISTRY OF TRANSPORT

DRAFT RESULTS

2.7 Gross and net costs per bus km by region



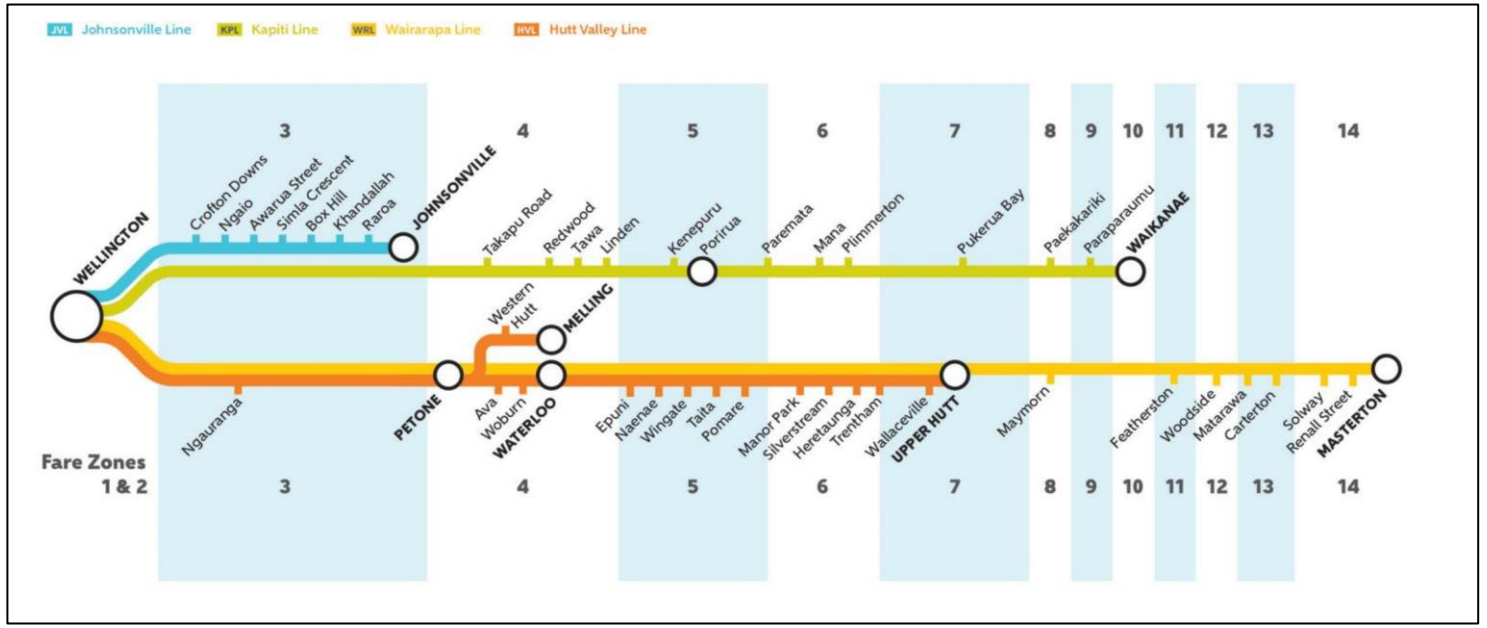
2.8 Cost recovery by region, all modes



TE MANATŪ WAKA
MINISTRY OF TRANSPORT

3. Rail costs and charges (WLG)

3.1 Wellington rail network



Line	Line segment	Kms
Kapiti (KPL)	Porirua (POR)	17.7
	Plimmerton (PLIM)	24.4
	Waikanae (WAIK)	55.3
Hutt Valley (HVL)	Melling (MELL)	14.1
	Taita (TAIT)	20.5
	Upper Hutt (UPPE)	32.4
Johnsonville (JVL)		10.3
Wairarapa (WRL)		91.0

DRAFT RESULTS

3.2 Rail operating costs and capital charges (WLG)

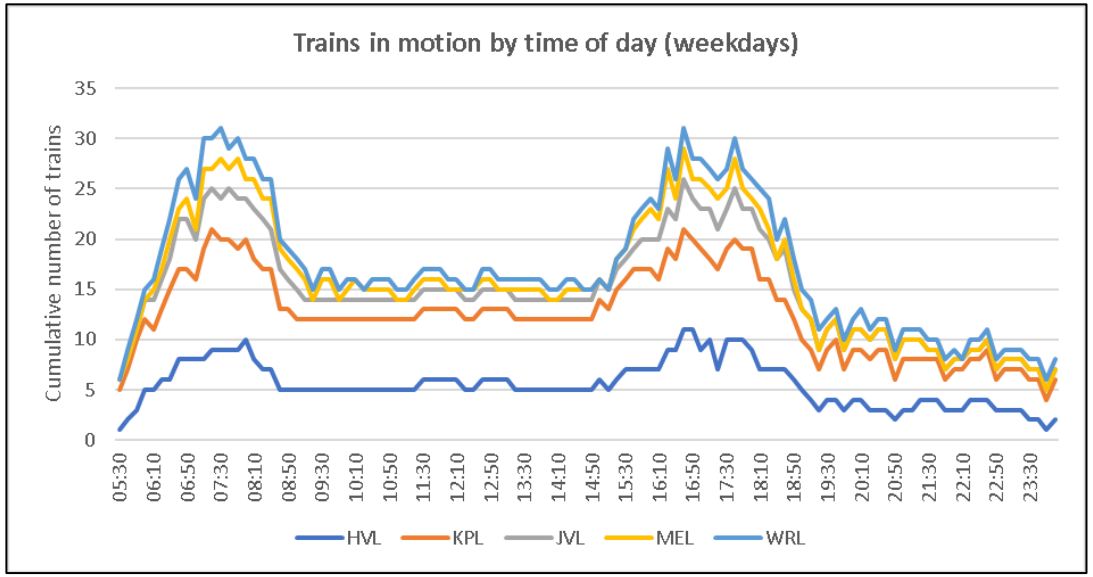
Cost item	Cost ($m)
Operating costs:	
• Rail operations	60.67
• Network operations and access	34.85
• Occupancy costs	5.17
• Metlink & mgt services	12.08
Total operating costs	112.77
Capital charges:	
• Depreciation – rolling stock	13.40
• Depreciation – stations etc	3.04
• Capital charge – rolling stock	14.61
• Capital charge – stations etc	4.23
Total capital charges	35.28
Grand total costs	148.05

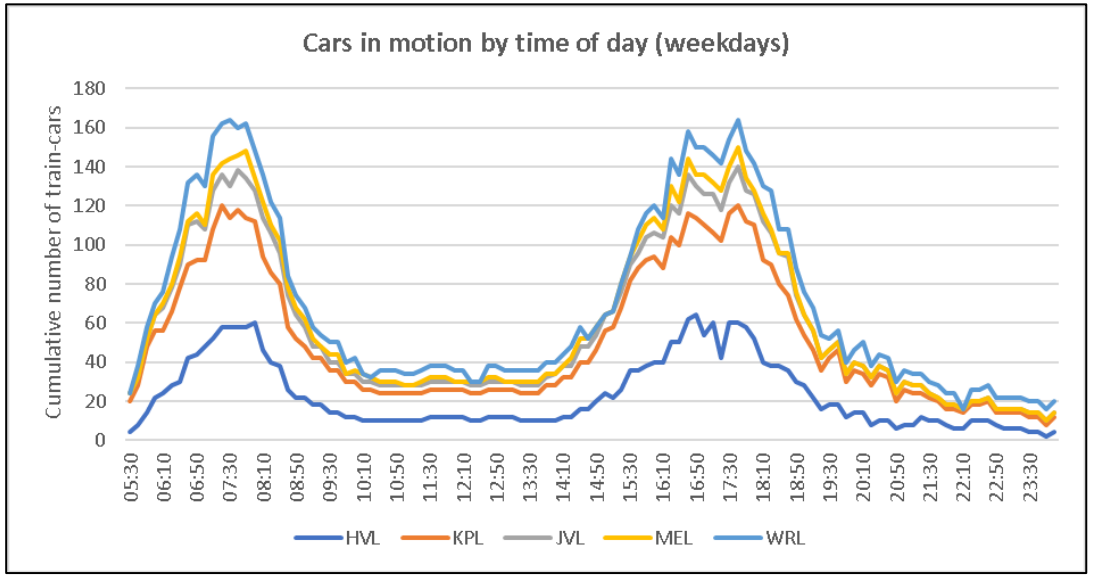
DRAFT RESULTS

3.3 Rail patronage and revenue totals (WLG)

Item	Peak	Off-peak	Total	Source
Passengers (mill)	9.541	4.783	14.324	Advice GW to IWA
Pax km (mill)	231.524	108.002	339.526	IWA estimates
Revenue – Fares ($mill)	37.5	15.6	53.124	NZTA Key Factor report 2018/19
Revenue – SGC ($mill)	0	2.413	2.413	NZTA Key Factor report 2018/19
Revenue – Total ($mill)	37.5	18.0	55.537	IWA estimates

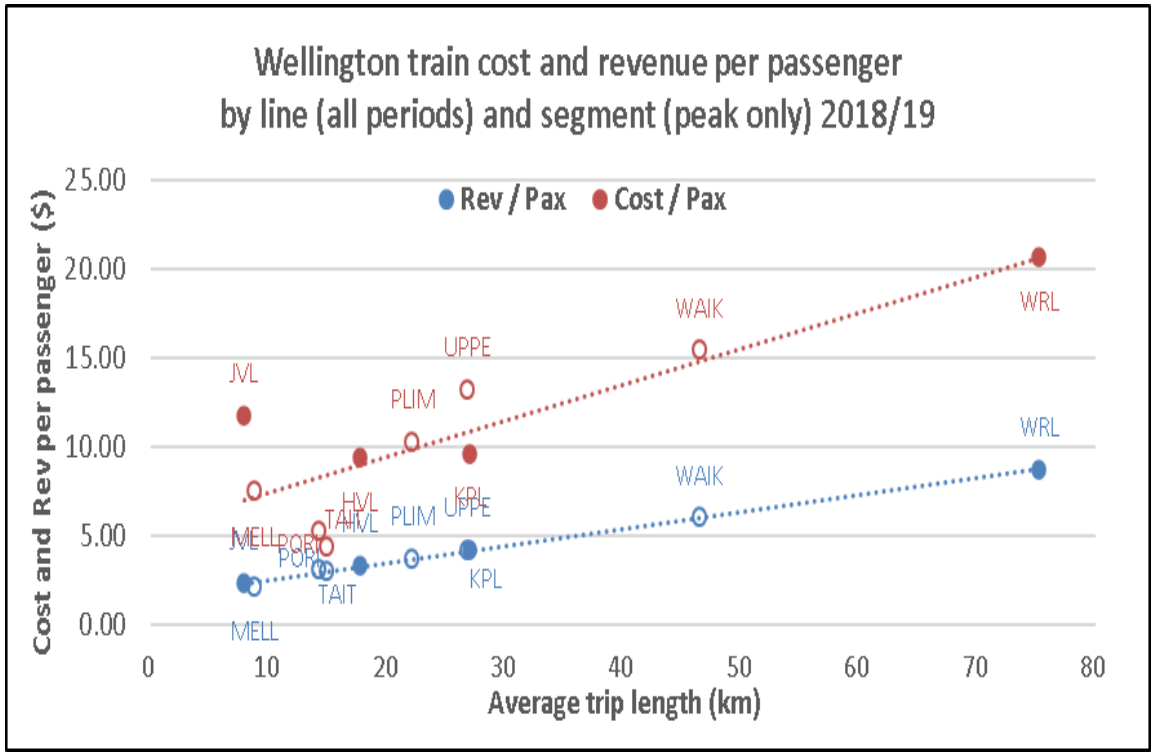
3.4 Train and car requirements by time-of-day (WLG)

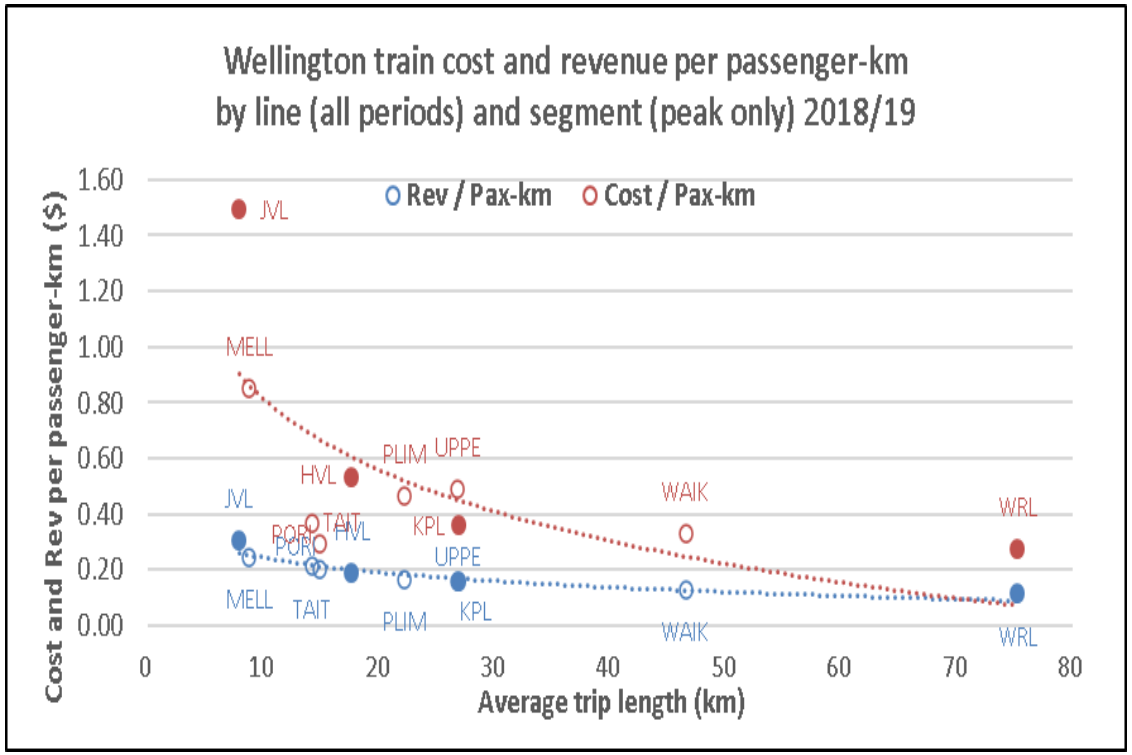




NB: Both charts show cumulative numbers of trains (or cars) as totals for all lines together (not the numbers for the individual lines)

3.5 Costs and revenues per passenger and passenger km (WLG)





TE MANATŪ WAKA
MINISTRY OF TRANSPORT

4. Bus costs and charges

DRAFT RESULTS

4.1 Urban Bus Operations Cost Model

- Based (loosely) on WLG operations and costs statistics, with typical 40 seat diesel bus)
- Cost structure - total cost =
  - $49.22 * service hours (Drivers)
  - + $1.66 * service km (Running costs)
  - + $52,600 pa * peak buses (Capital and overheads)
- Typical cost composition - bus operating 50,000 km pa at 22 km/hr:
  - total cost $250,000 pa per bus,
  - average cost $5.00 / service km **or** $110/service hr.

Table C1: NZ Urban Bus Operations Cost Model						
	All costs at Mar 19 quarter prices (excl GST)					
Unit cost category	**Cost driver**	**Cost items**	**Unit cost rates**			**Notes**
			$/Bus hr	**$/Bus km**	**$Pk Bus pa**	
A. Op costs - time	Bus hrs	Driver - wages & direct on-costs	32.00			
B . Op costs - distance	Bus kms	Fuel (diesel)		0.44		Consumption rate 40l/100km
						Price $1.10/l (excl GST)
		Oil, lubricants		0.04		
		Tyres and tubes		0.05		
		Bus R&M - wages, parts, materials, ext services		0.30		
		Road user charges (Note 2)		0.293		
C. Op costs - vehicles	Buses	Bus rego, licensing, comp insurance			1250	
		Bus cleaning, fuelling			2000	
		Depot rent & rates			3500	
Sub-total above			32.00	1.12	6750	
D. Op costs - overheads	% mark-up on items A-C	Overheads labour, other, minor asset charges	15%	15%	15%	
Sub-total op costs			36.80	1.29	7763	
E. Profit margin	% mark-up on items A-D	Profit margin/ management fee	7%	7%	7%	
F. Bus capital charges (Note 3)	Buses - by new price, age	Ave cap charge pa, covering depreciation & interest			39510	
Total all above costs			39.38	1.38	47816	
Factors to cover out-of-service operations (Note 1)			1.25	1.20	1.10	
Unit rates per service hr, service km, pk bus etc			**49.22**	**1.66**	**52598**	
Note (1):						
* Bus hr factor: Allows for addl driver time for out-of-service running, terminus time etc addl to TT time						
* Bus km factor: Allows for 20% out-of-service kmadditional to TT kms.						
* Peak bus factor: Allows for 10% 'spare' buses in fleet addl the minimum number reqd to provide the daily TT services						
Note (2):						
* RUC rates for buses from Oct 2018 were $0.263 (<18,000 kg) and $0.323 (>18,000 kg), excl GST: have used the average of these						
Note (3):						
*Based on new bus cost $450k, retained for 18 yrs, sale value 10% of original price, finance lease (PMT) @ 5% real interest rate with equal monthly payments over 18 years						

TE MANATŪ WAKA
MINISTRY OF TRANSPORT

DRAFT RESULTS

4.2 Marginal costs (financial) assessment

- Supply-based perspective - gross costs for varying (+/-) service levels:
  - Peak - c $160 / service hr
  - Off-peak - c $90 / service hr
- Difference reflects principally the incremental bus capital for peak periods.
- Demand-based perspective (eg in response to a 10% across-the-board exogenous increase in demand, in light of spare capacity on current services):
  - Peak - c 8% increase service levels (freq)
  - Off-peak - c 3% increase in service levels
- Increased service levels would further stimulate demand, resulting in estimated 12% overall increase.
- We estimate that the increased costs for the additional services (c $5.5 mill pa) would be almost offset by the increased revenue -
  - Peak period subsidy would increase by about $1.7 mill pa,
  - Off-peak subsidy would reduce by a similar amount.

DRAFT RESULTS

4.3 Marginal costs (economic) assessment

- Focus here on the marginal economic costs associated with marginal user, i.e. the net increase in (gross) operator costs less economic benefits (travel time etc) to existing passengers resulting from any increase in service levels to accommodate the marginal passenger.
- These user economies of scale in the PT sector known as the *Mohring* effect, representing a 'positive externality': the additional users result in increased service frequencies which in turn result in benefits (waiting times etc) to all existing users.
- These benefits to existing users can be readily estimated: for the Wellington bus services, our estimates are for benefits to existing passengers per incremental passenger of around $0.90 -$1.40 in peak periods, $0.20 - $0.40 in off-peak periods.

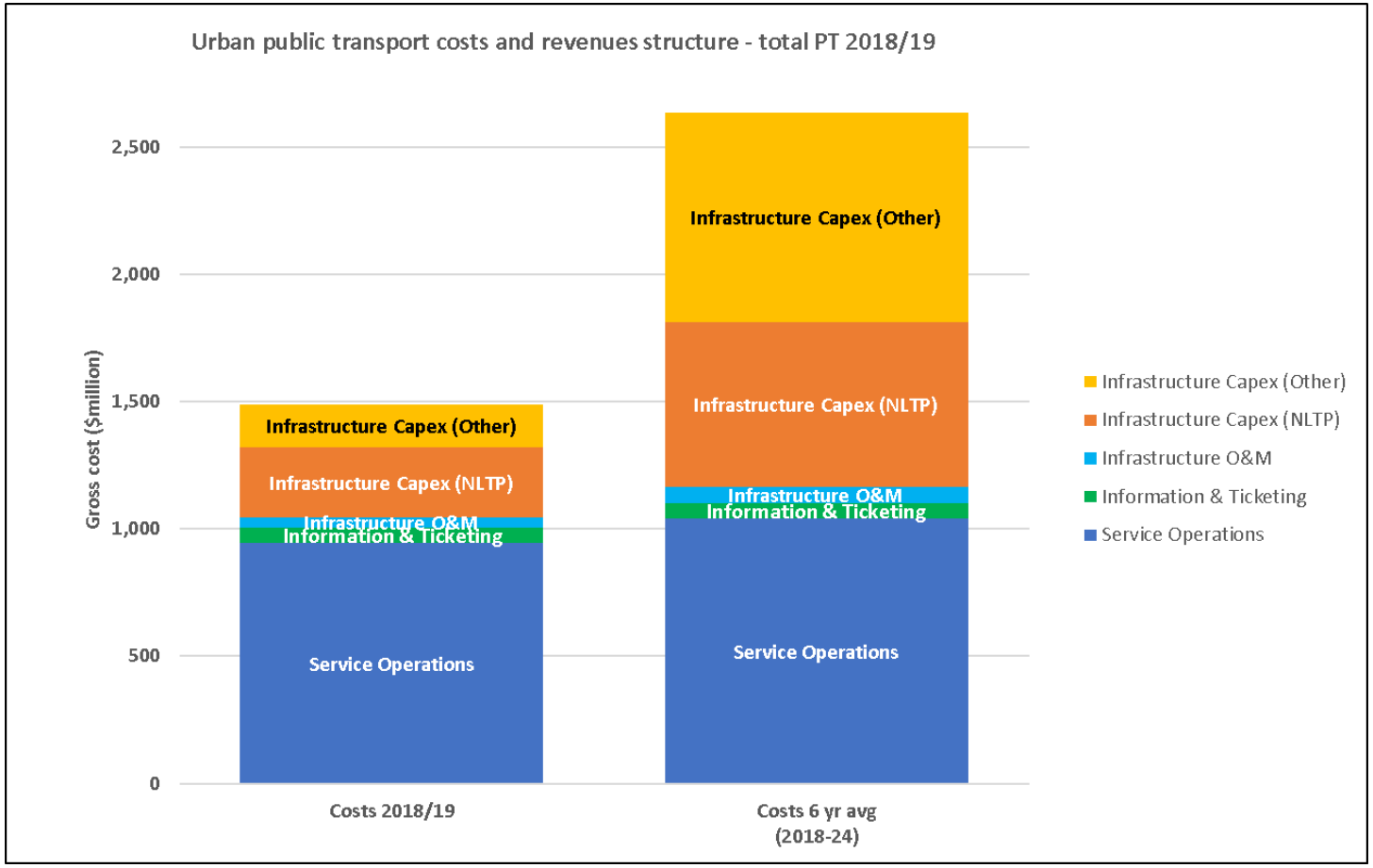
5. Medium term outlook

5.1 Data Issues

- NLTP:
  - primary data source
  - detailed expenditure figures (by region, opex by WC, capex by project)
  - NET amounts for major operational WCs (511, 512, 515)
- Fare revenues:
  - required to convert NLTP net opex figures to gross costs
  - data held by WK, separate from NLTP data
- Other (capex) projects:
  - major capital projects funded outside NLTP
  - include CRL, NZUP rail etc projects
  - capex figures available from various sources, but general lack of data on opex and fare etc revenues
- Exempt services:
  - cost and revenue data not included in any ‘official’ documents, but may estimate
  - issues re consistency of statistics when exempt services change to/from public system (eg AKL Devonport and Waiheke ferries)

DRAFT RESULTS

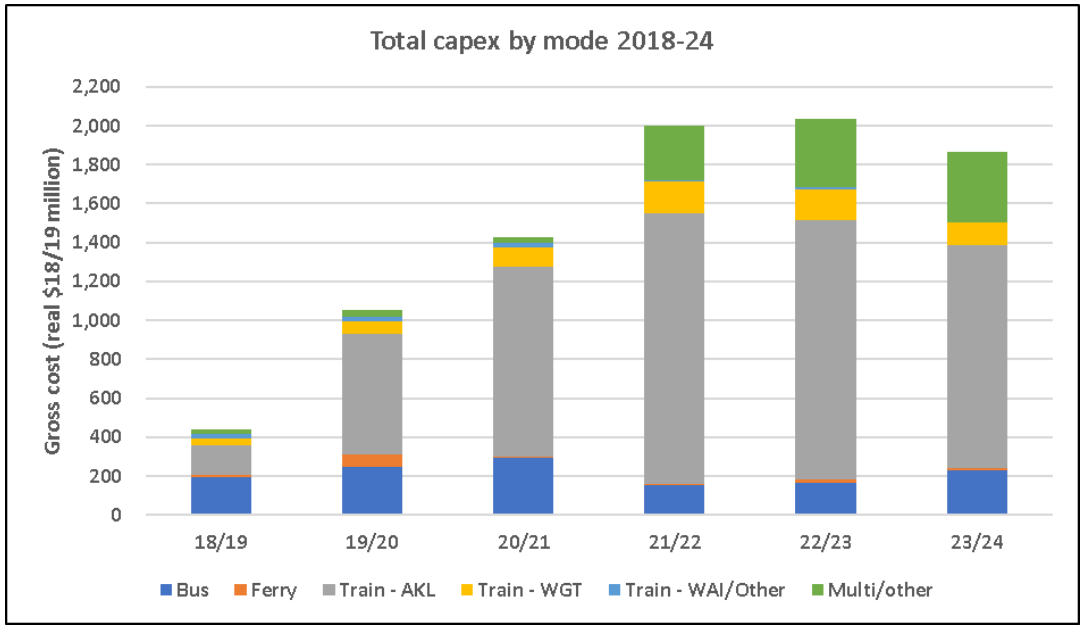
5.2 Cost structure 2018/19 and 6-year average (2018-24)

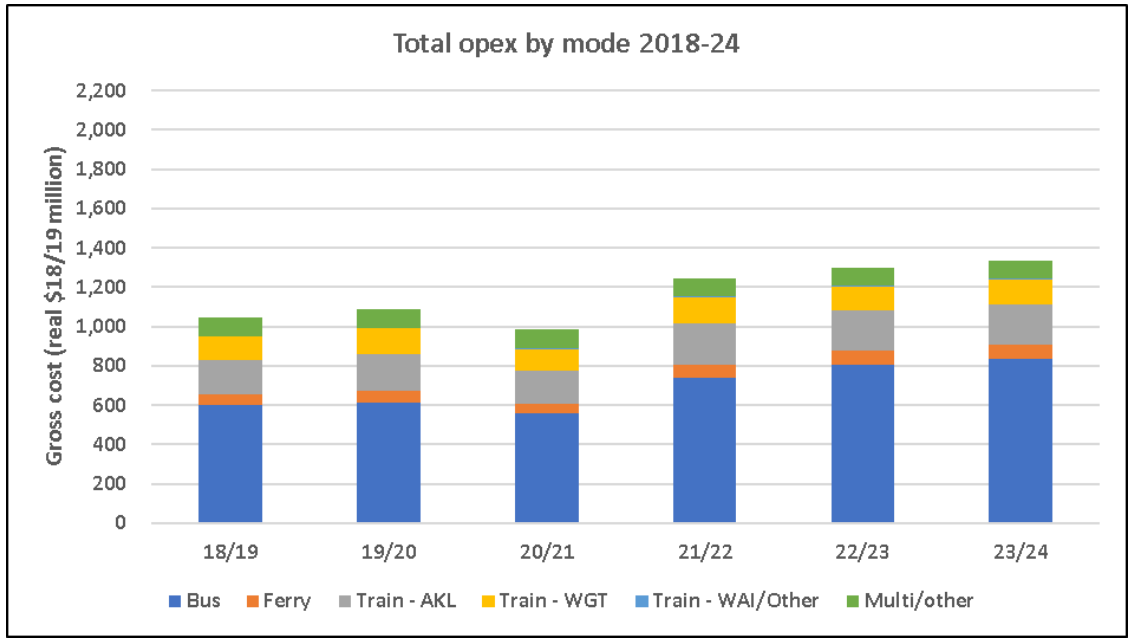


TE MANATŪ WAKA
MINISTRY OF TRANSPORT

DRAFT RESULTS

5.3 Capex and Opex by Mode, 2018/19 - 2023/24 (6 yr average)

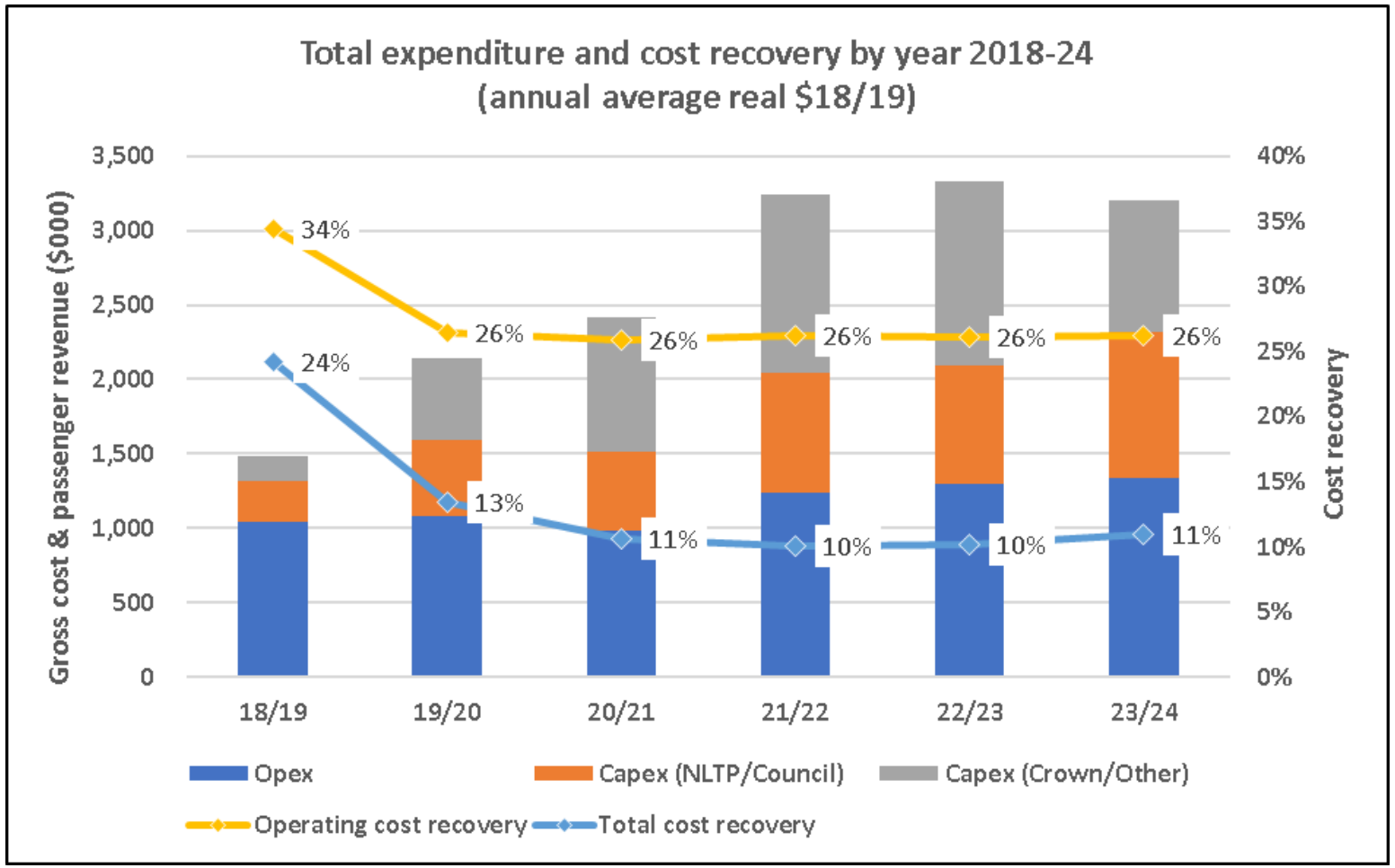




TE MANATŪ WAKA
MINISTRY OF TRANSPORT

DRAFT RESULTS

5.4 Total Expenditure and Cost Recovery, 2018/19 - 2023/24



TE MANATŪ WAKA
MINISTRY OF TRANSPORT

TE MANATŪ WAKA
MINISTRY OF TRANSPORT

Questions?