Domestic Transport Costs and Charges

Ministry of Transport
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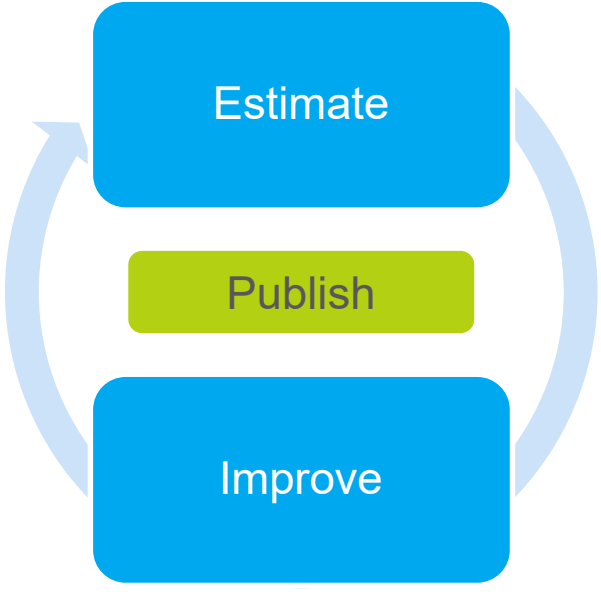
Transport Knowledge Hub, 2 December 2020

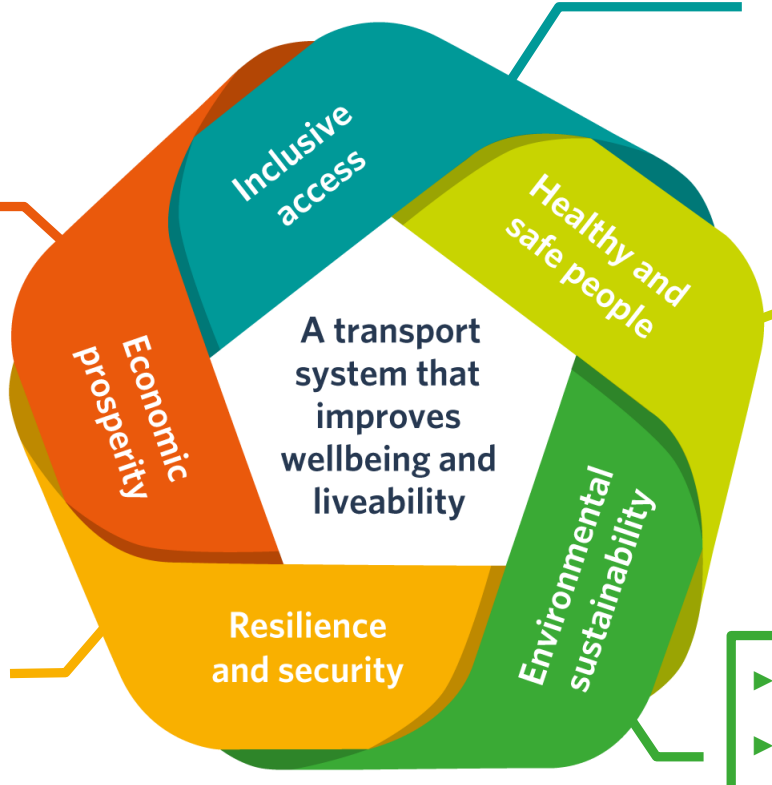
Project outline

- Measure or estimate transport costs and charges
- Mode neutral basis
- Scoped methodology
- Baseline snapshot (2018/19 year)
- Include external costs
- 30 Working Papers, to be received by year-end
- Culminating in a Final Report by March 2021
- Identify areas for further research
- Develop plans to refine & update estimates



Examples of costs and charges

- Infrastructure cost
- Services cost
- Congestion
- Travel time
- Travel cost



- Vehicle costs
- Public transport costs
- Travel time

- Crashes
- Pollution
- Noise
- Vibration
- Health

- CO2 emissions
- Water quality
- Biodiversity

- Damage
- Adaptation
- Recovery
- Response
- Security

Segmenting our domestic modes

Network	Mode	Notes
Road	Walk	
	Cycle	Includes e-bikes and e-scooters
	Motorcycle	
	Bus and coach	
	Truck (road freight)	Light, medium and heavy
	Car	Includes taxi and car share
Rail	Passenger	Metro and long distance
	Freight	By commodity/line
Air*	Passenger	Trunk and regional
Sea	Passenger	
	Freight	Bulk and container

Working Papers received so far

Working paper	Status
Scoping report	Finalised
Economic Methodology	Received second draft
WACC* (weighted average cost of capital)	Received incomplete draft with caveats
Aviation*	Received incomplete draft with caveats
Rail – regulation	Received second draft
Rail – safety	Received draft
Rail – funding	Received draft
Taxis & ride-hailing	Received second draft
Micro-mobility	Received second draft
Public health *(physical exercise benefits of a shift to active modes)*	Received second draft
Valuation of the road infrastructure	Awaiting second draft
Emissions	Awaiting second draft

Working Papers received so far

Working paper	Status
Walking & Cycling	Received second draft
Road expenditure & funding	Received second draft
Vehicle operating cost models *(Includes road freight)*	Received draft
Parking	Received draft
Social cost of crashes	Received draft
Coastal shipping	Received draft
Noise	Received draft
Biosecurity & biodiversity	Received draft
Road vehicle ownership/use	Received draft

Working Papers still to come

Rail – Investment	)
Rail – Long distance passenger	) Drafts withheld pending agreement between
Rail – Metro	) Ministry and KiwiRail around data
Rail – ferries	) confidentiality assurances
Rail – freight	)
Urban PT	Awaiting first draft
Congestion	Awaiting first draft
Road maintenance & operation	Awaiting first draft
Long-distance coaches	Awaiting first draft

Some preliminary results

- Cost measures or estimates on the basis of:
  - *Average Cost*
  - *Total Cost (including external costs, e.g. deaths, injuries, pollution, congestion)*
  - *Marginal Cost**

*Marginal Costs are tricky as there can be several options to raise output

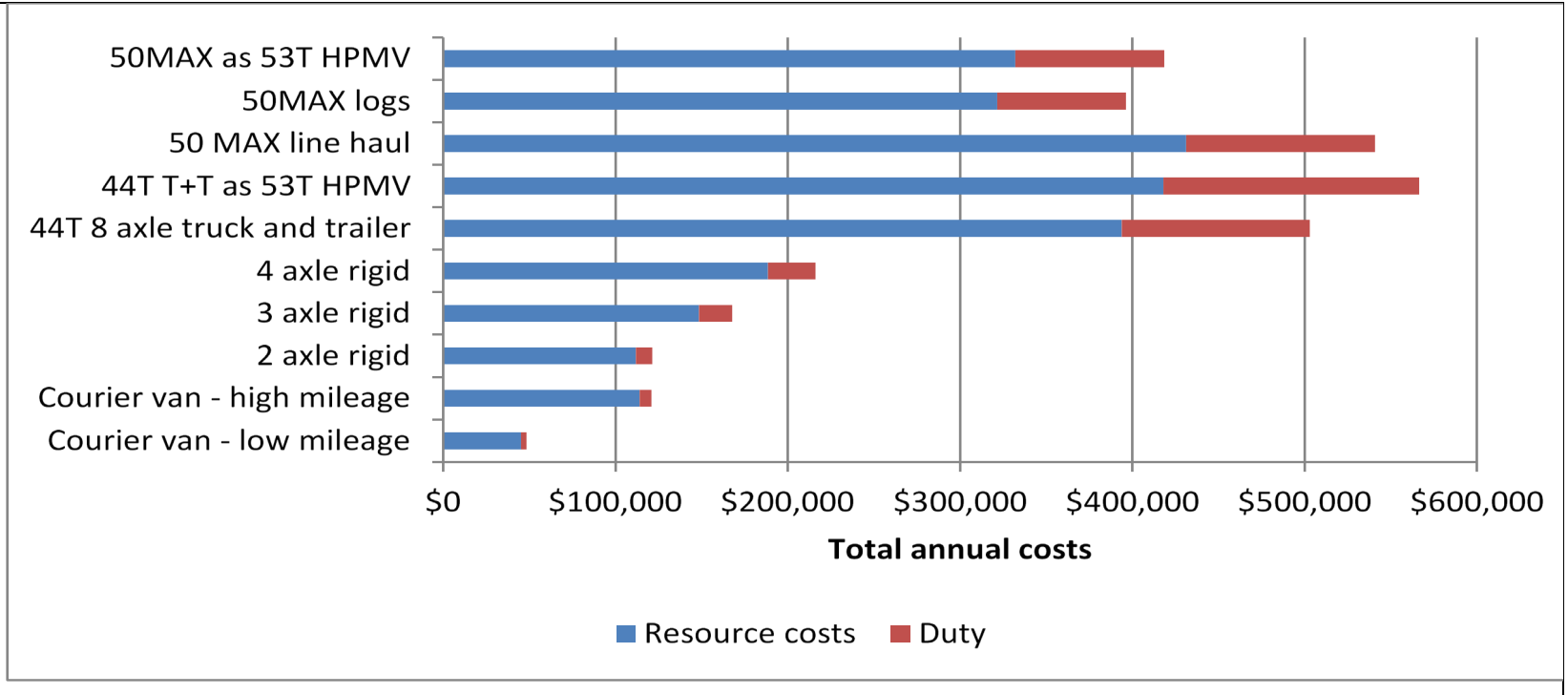
- Costs can be incurred by
  - *Providers of transport services by mode*
  - *Wider society (externalities)*
  - *MoT / WK / CAA / MNZ**

*To a degree, these costs are recovered by charges, levies, fees etc.

DRAFT Emissions paper (total cost estimates)

Mode	Urban			Rural			National		
	AQ	GHG	Total	AQ	GHG	Total	AQ	GHG	Total
Passenger transport ($M/yr)	**$603**	**$367**	**$970**	**$291**	**$441**	**$732**	**$894**	**$808**	**$1,702**
Passenger car	$479	$322	**$802**	$262	$355	**$617**	$742	$677	**$1,419**
Coach	$6.4	$1.7	**$8.1**	$1.9	$1.6	**$3.4**	$8.3	$3.2	**$11.5**
Other bus	$32.6	$9.3	**$41.8**	$10.7	$10.1	**$20.8**	$43.3	$19.3	**$62.6**
Motorcycle	$10.6	$1.3	**$11.8**	$6.0	$1.7	**$7.7**	$16.6	$2.9	**$19.5**
Long-distance rail	-	-	-	$0.05	$0.02	**$0.07**	$0.05	$0.02	**$0.07**
Domestic aviation	$18.5	$18.3	**$36.8**	$1.9	$66.1	**$67.9**	$20.4	$84.3	**$105**
Urban bus	$40.1	$10.3	**$50.4**	-	-	-	$40.1	$10.3	**$50.4**
School bus	-	-	-	$8.1	$7.0	**$15.1**	$8.1	$7.0	**$15.1**
Urban rail	$1.0	$0.8	**$1.8**	-	-	-	$1.0	$0.8	**$1.8**
Urban ferry	$14.2	$3.0	**$17.2**	-	-	-	$14.2	$3.0	**$17.2**
Freight transport ($M/yr)	**$849**	**$240**	**$1,089**	**$358**	**$333**	**$691**	**$1,207**	**$573**	**$1,780**
LCV	$361	$113	**$475**	$194	$133	**$327**	$555	$245.9	**$801**
MCV	$74.1	$17.4	**$91.5**	$29.2	$22.0	**$51.2**	$103	$39.4	**$143**
HCV	$353	$105	**$459**	$112	$104	**$216**	$465	$208.9	**$674**
Electric locomotive	-	$0.01	**$0.01**	-	$0.1	**$0.1**	-	$0.1	**$0.1**
Diesel locomotive	$12.9	$1.9	**$14.8**	$20.6	$8.7	**$29.3**	$33.4	$10.7	**$44.1**
Coastal freighter	$47.2	$2.5	**$50**	$2.1	$65.8	**$67.8**	$49	$68.3	**$118**
Total ($M/yr)	**$1,452**	**$607**	**$2,059**	**$649**	**$774**	**$1,423**	**$2,100**	**$1,381**	**$3,482**

DRAFT Vehicle operating cost models



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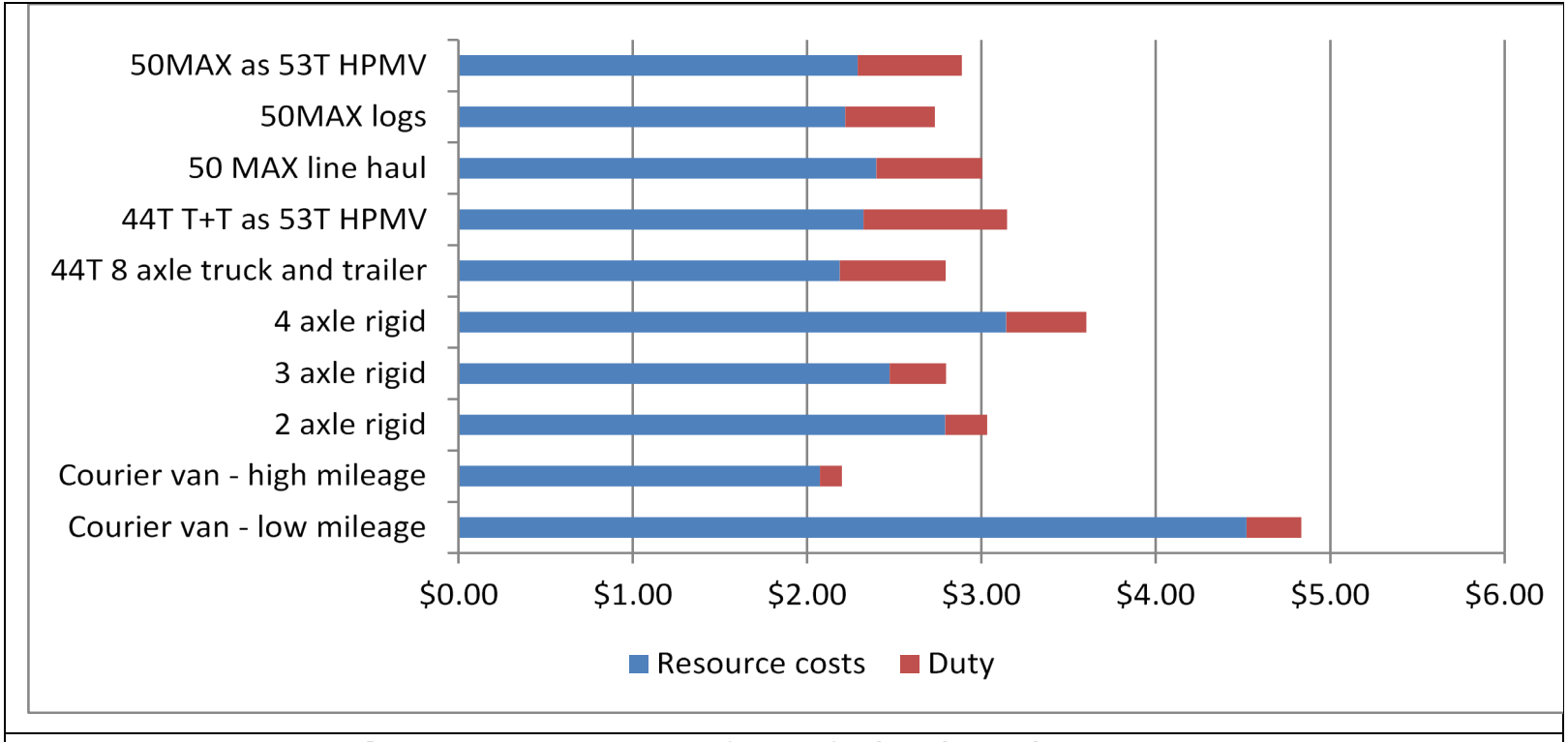
Total annual costs for different vehicle types ($)



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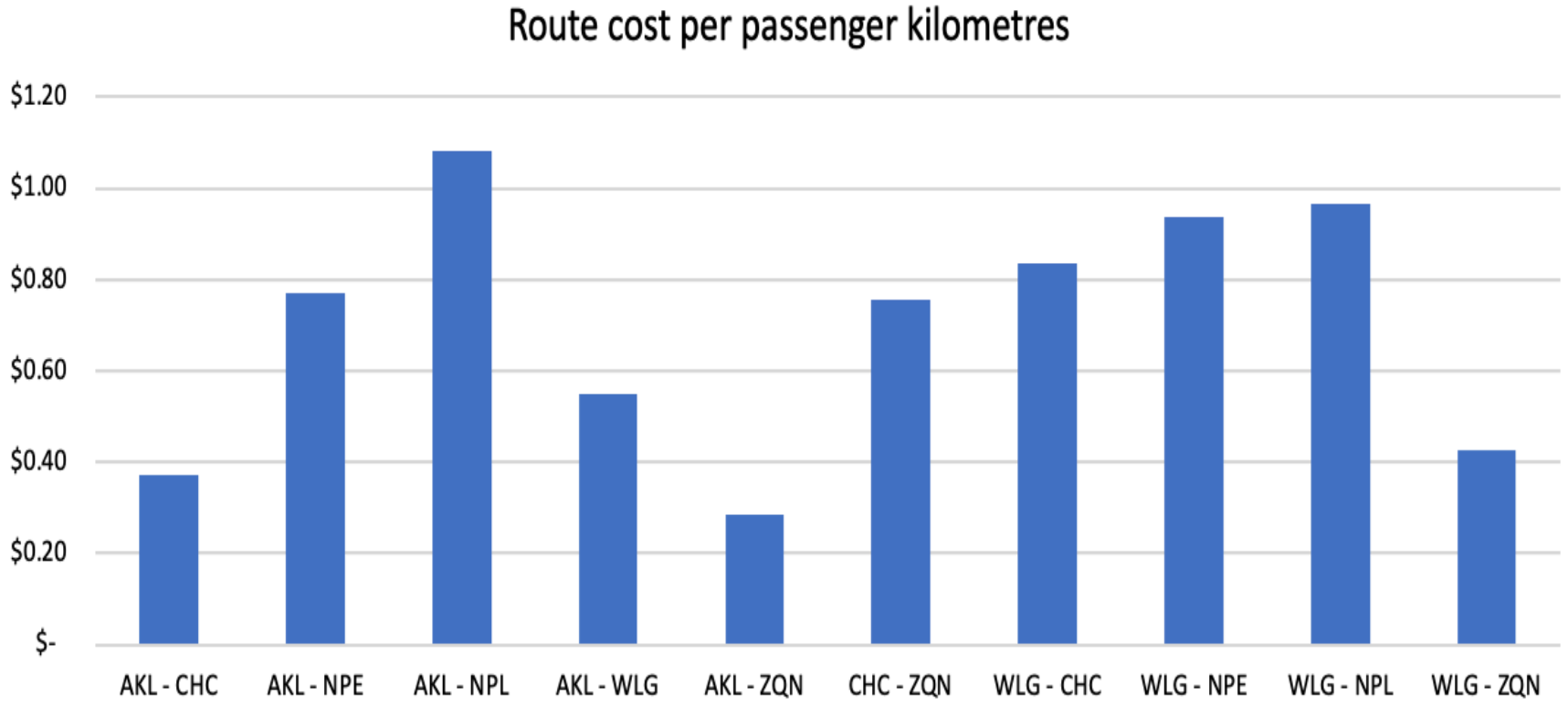
Total costs per km 2018/19 ($ per km)

- DRAFT Aviation Paper (average cost estimates)



DRAFT Taxis & Ride-hailing paper: average costs

- Total costs per vehicles km
  - *Cars* *67c*
  - *Taxis* *$2.53*
  - *Ride-hailing* *$3.37*

- Average journey 6.38km

- Therefore, average costs incurred per trip:
  - *Taxis* *$15.38*
  - *Ride-hailing* *$20.35*

DRAFT Micro-mobility Working Paper: average costs/km

Line Item	% of total cost	$ per km
Capital Expenditure	20.10%	$0.76
Operational Expenditure	22.06%	$0.83
Sales and General Administration	19.80%	$0.75
New User Promotions	21.64%	$0.82
Taxes	5.40%	$0.21
Cost of Capital	11.00%	$0.42
TOTAL	100%	$3.79

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Thank you