

31 March 2017

Submission on the Draft Government Policy Statement on Land Transport

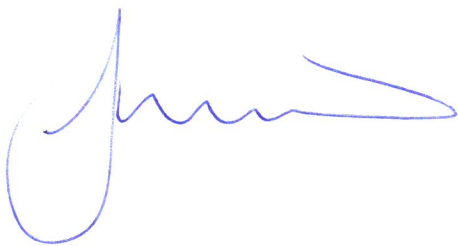
Thank you for the opportunity for Auckland Regional Public Health Service (ARPHS) to provide a submission on the Draft Government Policy Statement on Land Transport.

The following submission represents the views of ARPHS and does not necessarily reflect the views of the three district health boards it serves. Please refer to Appendix 1 for more information on ARPHS.

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Yours sincerely,



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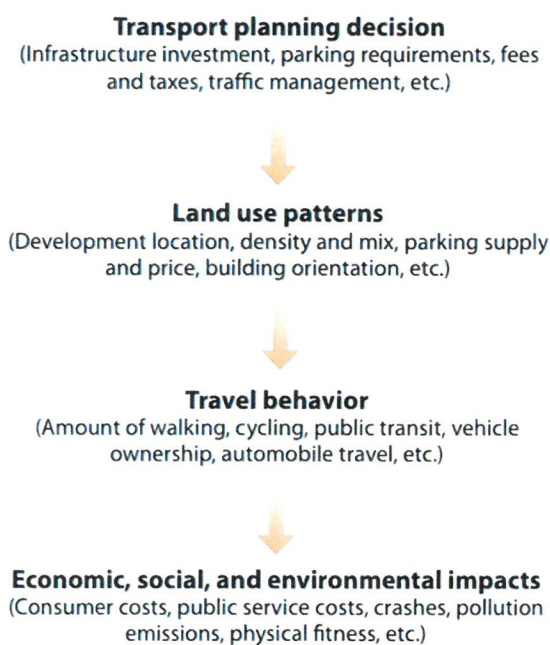
Michael Hale
Medical Officer of Health
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Thank you for the opportunity for Auckland Regional Public Health Service (ARPHS) to provide a submission on the Draft Government Policy Statement on Land Transport. ARPHS recommend that:

- The investment class allocations in the Government Policy Statement (GPS) should be reassessed to prioritise public transport and active transport above state highways and local roads in New Zealand's cities.
- For Auckland, alleviating congestion and increasing travel time reliability should be the main focus of the GPS funding and policy outcomes. This will require increased investment in the Public Transport allocation class.
- There is a need for the GPS funding and policy outcomes to better recognise the different transport demands of cities and regional areas – especially in the case of Auckland.

Wider economic and health costs and benefits

1. Transport planning decisions influence the way land is used, the development of built environments and the behaviours that follow of communities, families and individuals. The built environments and the behaviours that transport investment incentivise have a well-established evidence-based impact on social, economic and health outcomes¹.



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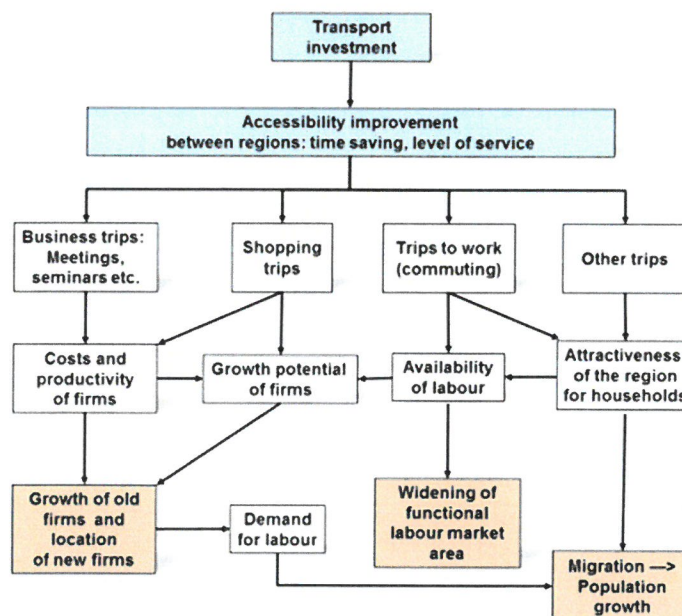
2. More than one-third (38%) of all health lost by the New Zealand population is caused by known modifiable risk factors. That is health loss – which has a wide range of societal and

¹ Todd Litman. 2013. Transportation and Public Health. *Annual Review of Public Health*. 34 (217-233)

² *ibid*

economic costs – that could be avoided through reducing exposure to these hazards³. Transport in general has a strong impact on modifiable risk factors such as physical activity, air quality, social cohesion of neighbourhoods, access to amenities and jobs, and trauma from road traffic injuries.

3. A longitudinal study from a representative sample of the British Household Panel survey quantified the impact of transport modes on health⁴. It found that switching from active travel or public transport to private motor transport was associated with a significant increase in body mass index (BMI). This relationship also held in the reverse direction. Switching from private motor transport to active travel or public transport was associated with a reduction in BMI, evident even in a relatively short-time period of less than two years. The results were adjusted for socioeconomic status and health related covariates. The implication of these findings suggest that a shift in the proportion of commuters using more active modes of travel could contribute to efforts to reduce population mean BMI.
4. Transport planning policies are also a key determinant of health through access to jobs and therefore incomes. A NZTA research report⁵ identifies that the strongest link between transport improvements and access to jobs is most likely to occur through the reduction of commuting times.
5. A post-investment analysis conducted by the OECD also found a similar effect, as shown in the diagram below⁶. It found that an improvement in accessibility, mainly in time-saving, was the primary factor that drove business, shopping and commuting trips. Reducing commuting times also had follow-on effects on the availability of labour and the attractiveness (affordability) of the region for people.



³ Ministry of Health. 2016. Health Loss in New Zealand 1990-2013: A report from the New Zealand Burden of Disease, Injuries and Risk Factors Study. Ministry of Health.

⁴ Martin A, Panter J, Suhrcke M, et al. 2015. Impact of changes in mode of travel to work on changes in body mass index: evidence from the British Household Panel Survey. *J Epidemiol Community Health*;69:753-761.

⁵ Kernohan D, Rognlien L, Davies Gleave S. 2011. Wider economic impacts of transport investments in New Zealand. New Zealand Transport Agency.

⁶ Weisbrod G. 2016. Estimating Wider economic impacts in transport project prioritisation using ex-post analysis. *Quantifying the socio-economic benefits of transport*. OECD

6. Congestion and travel times are key issues for Auckland. The GPS acknowledges the challenges that Auckland is facing from the declining access to jobs, increasing congestion and also the use of public transport to ease congested corridors. ARPHS believes the GPS should take the opportunity to address and alleviate these issues, and recognise that this would create more significant gains and therefore deserves a higher priority, especially in Auckland, than the traditional funding criteria proposed by the draft GPS.

Auckland issues – Congestion

7. A recent report on the roads of New Zealand and Australia⁷ identified Auckland as performing very poorly on reliability as road users needed to budget up to an additional 45% in their travel times in order to arrive at their destinations on time during afternoon peak hours. It is not only the duration of journeys that needs to be improved but also reducing the variability of arrival times in Auckland.

Sydney, Auckland and Wellington are the worst performing cities in their respective groups

Key Congestion Measures – By City, Weekdays

City	Average Speed (Km / Hr)	Travel Time Delay (%)	Reliability (%)		Scheduling (%)	
			Morning Peak (6am to 10am)	Afternoon Peak (3pm to 7pm)	Morning Peak (6am to 10am)	Afternoon Peak (3pm to 7pm)
	<i>How fast does traffic in the city travel?</i>	<i>How much is traffic delayed from free-flow conditions?</i>	<i>What is the statistical reliability of travel times in the morning peak period?</i>	<i>What is the statistical reliability of travel times in the afternoon peak period?</i>	<i>How much time does a consumer need to budget during the morning peak period, relative to free-flow?</i>	<i>How much time does a consumer need to budget during the afternoon peak period, relative to free-flow?</i>
Sydney	29	31%	14%	9%	49%	50%
Melbourne	34	23%	11%	8%	34%	41%
Brisbane	52	12%	8%	6%	23%	23%
Perth	58	14%	7%	6%	22%	25%
Auckland	42	22%	12%	10%	37%	45%
Adelaide	28	11%	7%	3%	16%	17%
Canberra	61	9%	7%	4%	15%	14%
Hobart	42	8%	6%	4%	12%	15%
Wellington	55	10%	9%	9%	21%	20%
Darwin	36	4%	1%	2%	5%	6%

City Group: ● Group 1 ● Group 2 ● Group 3

Note: As analysis was based on 600km of the most congested roads, comparisons are better drawn among cities within the same group based on population size.

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8. Congestion produces numerous economic and public health costs. Public health outcomes are impacted from excess air pollutant exposure from fine particulate matter (PM 2.5). The cost of this pollution is high. In 2012, the total social costs including deaths, hospitalisation and restrictions in activities due to anthropogenic air pollution in New Zealand were estimated at \$4.28 billion a year⁹.

⁷ Austroads. 2016. Congestion and Reliability Review. Austroads. ISBN 978-1-925451-49-8

⁸ ibid

⁹ GerdaKuschel; Jayne Metcalfe; Emily Wilton; JagadishGuria; Simon Hales; Kevin Hales; Kevin Rolfe; & Alistair Woodward. 2012. Updated Health and Air Pollution in New Zealand Study, Vol 1: Summary Report. Emission Impossible Ltd).

9. One way to alleviate congested corridors is to move more people through public transport.
10. The effectiveness of public transport is highlighted by the Northern Busway in Auckland. The Austroads report¹⁰ cites a key issue for Auckland: that the city has few public transport options and the presence of plentiful parking encourages commuters to favour private cars over public transport.
11. Another NZTA report¹¹ considered the benefits of shifting trips from car-based modes to public transport. It found that the remaining users of the road would benefit from decreased congestion, air pollution and costs. The average benefit to remaining road users applies to the peak-hour traffic, and is \$1.41/vehicle-km for Auckland as shown in the table below.

Peak period average benefits to remaining road users (2008 \$)

	Auckland	Wellington	Christchurch	Other
Average benefits including travel time, VOC and CO ₂ (/vehicle-km)	\$1.41	\$1.08	\$0.10	\$0.00

Congestion, emissions and climate change

12. New Zealand has the second highest private car ownership in the OECD¹². Transport emissions contribute more than 17 percent of New Zealand's greenhouse gas emissions. Ninety-nine percent of the energy used in transport is sourced from fossil fuels. Congestion contributes to wasted fuel and increased emissions.
13. A New Zealand study looked at the effects of shifting modes and emission outcomes. It found that mode shift from private vehicle use to cycle or public transport would result in clear environmental benefits such as reduction in emissions (CO₂, CO, NO_x and other VOCs). A shift in trips under 7kms would save approximately 700–800kg of CO₂ in a year from a single vehicle travelling 10km to work (20km return trip) for 245 work days. The effects of a percentage shift in short trips from vehicles to cycling are captured in Table 2 below¹³.

Table 2: Fuel and vehicle emission annual savings from moving short urban car trips (≤7 km) to cycling: from 1% to 30% of vehicle km.

Parameter	1%	5%	10%	30%
Reduction in light vehicle km driven (million)	44.7	223.4	446.8	1,340.4
Fuel savings (litres) ^a	4,413,000	22,065,000	44,129,000	132,388,000
Fuel savings (\$NZ) ^b	\$7,413,000	\$37,069,000	\$74,137,000	\$222,412,000
CO ₂ (tonnes) ^a	10,033	50,167	100,334	301,001
CO ₂ eq (tonnes) ^c	10,735	53,676	107,351	322,054
Carbon monoxide (tonnes) ^a	290	1,449	2,898	8,695
NO _x (tonnes) ^a	32	161	321	964
PM10 exhaust (tonnes) ^a	1.9	9.3	18.7	56.0
PM10 brake, tyre (tonnes) ^a	0.6	2.9	5.8	17.3
Volatile organic compounds (tonnes) ^a	19	95	189	568
Methane (tonnes) ^d	2.8	13.9	27.9	83.6
Nitrous oxide (tonnes) ^d	0.3	1.4	2.7	8.2

Notes:

a) VEPM 2.3 model light vehicle data used to calculate fuel, CO₂, CO, NO_x, PM10 and volatile organic compound emissions.¹⁹

b) Based on average price of petrol (91 octane, \$1.75/L) and diesel (\$1.12/L) for quarter 1, 2010,⁴⁶ and proportion of light vehicles that were petrol and diesel.¹⁹

c) CO₂eq = Carbon dioxide equivalents. Calculated using the IPCC 2007 100-year Global Warming Potential factors (methane has 25, nitrous oxide 298, and carbon monoxide 1.9 times the warming compared of CO₂).²¹

d) Methane and nitrous oxide calculations based on fuel emission factors for these gases.⁵⁰

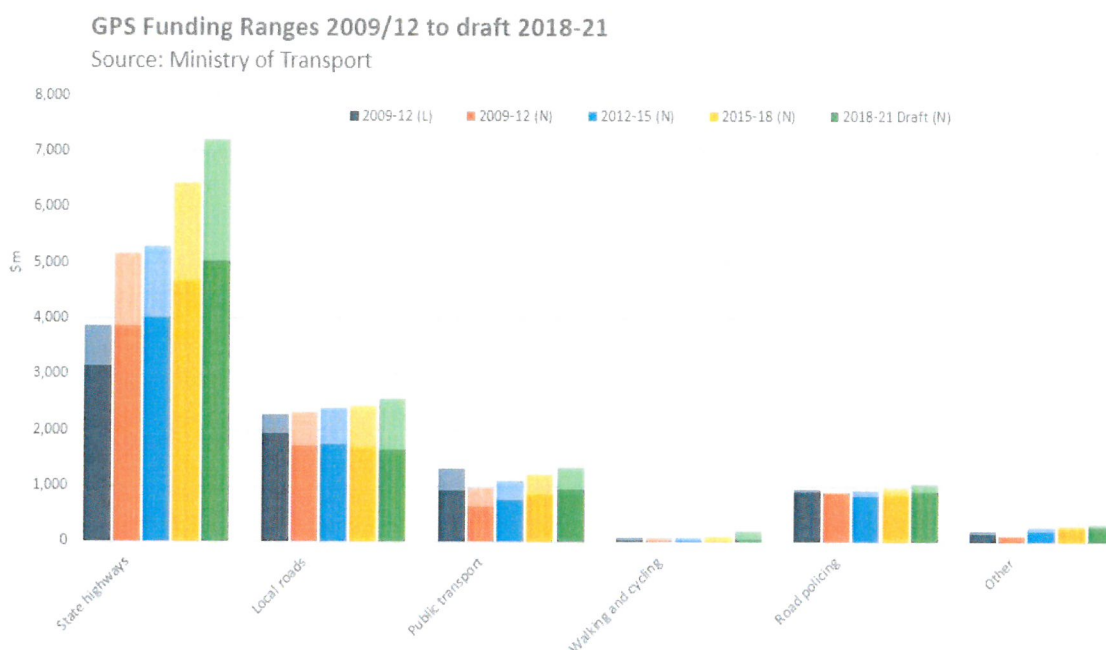
¹⁰ Austroads. 2016. Congestion and Reliability Review. Austroads. ISBN 978-1-925451-49-8

¹¹ Ensor, M et al. 2010. Forecasting the benefits from providing interface between cycling and public transport. New Zealand Transport Agency

¹² The Royal Society of New Zealand. 2016. Transition to a low-carbon economy for New Zealand.

¹³ Lindsay G, Macmillan A, Woodward A. 2011. Moving urban trips from cars to bicycles: impact on health and emissions. *Australian and New Zealand Journal of Public Health*. Vol 1 (54-60).

Funding caps and trends in the GPS



14. Tracking the proportion of investments in activity classes over time in the GPS indicates a serious skew towards state highway investment. Although major investment was required in highways for all of New Zealand, the investment trends highlight the relative under-investment in public transport.
15. It is already clear that public transport will play a major part in alleviating congestion and reducing variability in travel times for Aucklanders. As indicated in the current GPS, demand for public transport is rising, especially in Auckland. Considering the problems faced by Auckland, which are not homogeneous across all of New Zealand, a rebalancing of sorts need to occur to address the most important transport issues affecting Auckland. Encouraging the development of public transport would only accelerate the delivery of its beneficial impact.

Conclusion

16. We suggest that investment in public transport should be increased and that the GPS funding class allocation for public transport move to the upper funding limit for Auckland.
17. We suggest that the impact of transport planning on development and behaviour should be recognised through spatial planning designed to alleviate congestion through encouraging active transport and public transport improvements
18. We suggest that NZTA delineates funding and policy outcomes for cities, especially Auckland, within the GPS.

Thank you for the opportunity to submit on the Draft Government Policy Statement on Land Transport.

Appendix 1 - Auckland Regional Public Health Service

Auckland Regional Public Health Service (ARPHS) provides public health services for the three district health boards (DHBs) in the Auckland region (Counties Manukau Health and Auckland and Waitemata District Health Boards).

ARPHS has a statutory obligation under the New Zealand Public Health and Disability Act 2000 to improve, promote and protect the health of people and communities in the Auckland region. The Medical Officer of Health has an enforcement and regulatory role under the Health Act 1956 and other legislative designations to protect the health of the community.

ARPHS' primary role is to improve population health. It actively seeks to influence any initiatives or proposals that may affect population health in the Auckland region to maximise their positive impact and minimise possible negative effects on population health.

The Auckland region faces a number of public health challenges through changing demographics, increasingly diverse communities, increasing incidence of lifestyle-related health conditions such as obesity and type 2 diabetes, infrastructure requirements, the balancing of transport needs, and the reconciliation of urban design and urban intensification issues.