Health impacts of transport pathways in Ināia Tonu Nei

Quantifying co-benefits of climate mitigation in Aotearoa

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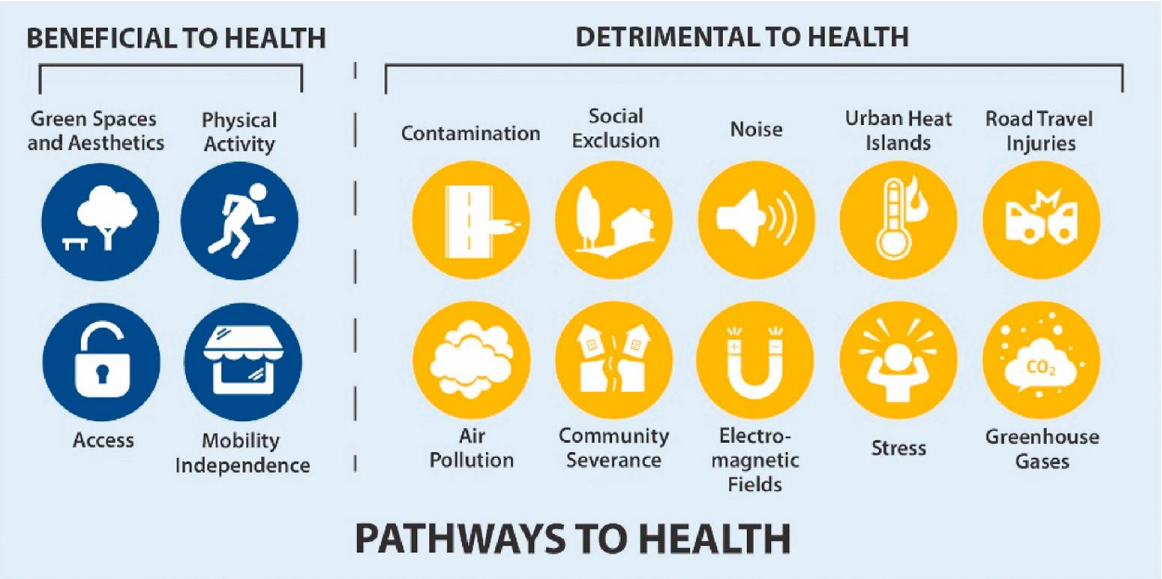
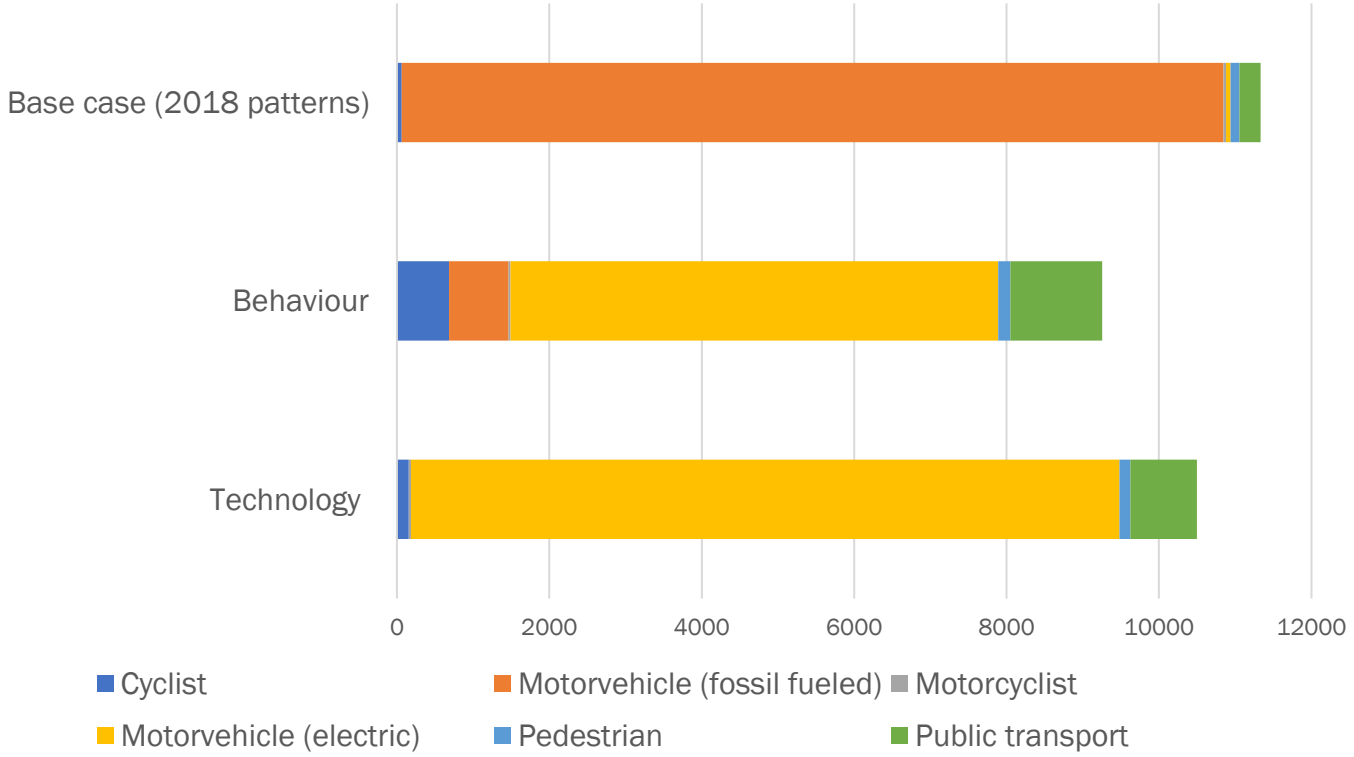
2WalkandCycle March 2024

Background

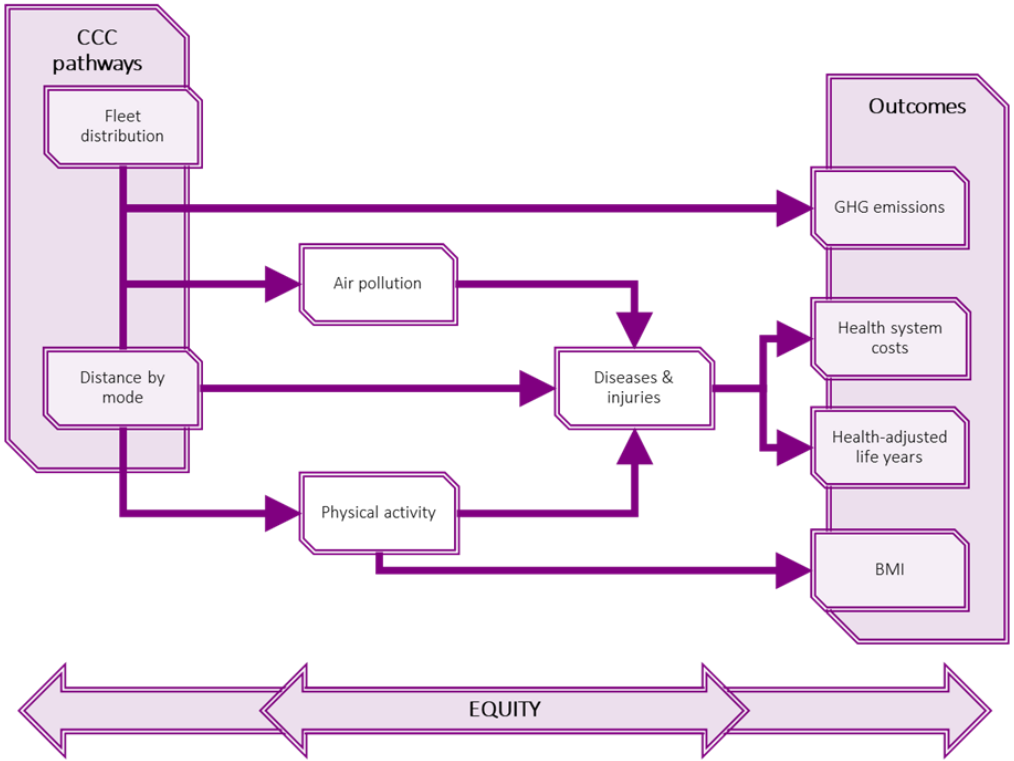


Glazener A. et al. J. Transport and Health. 2021

Annual km travelled per person by mode in 2050



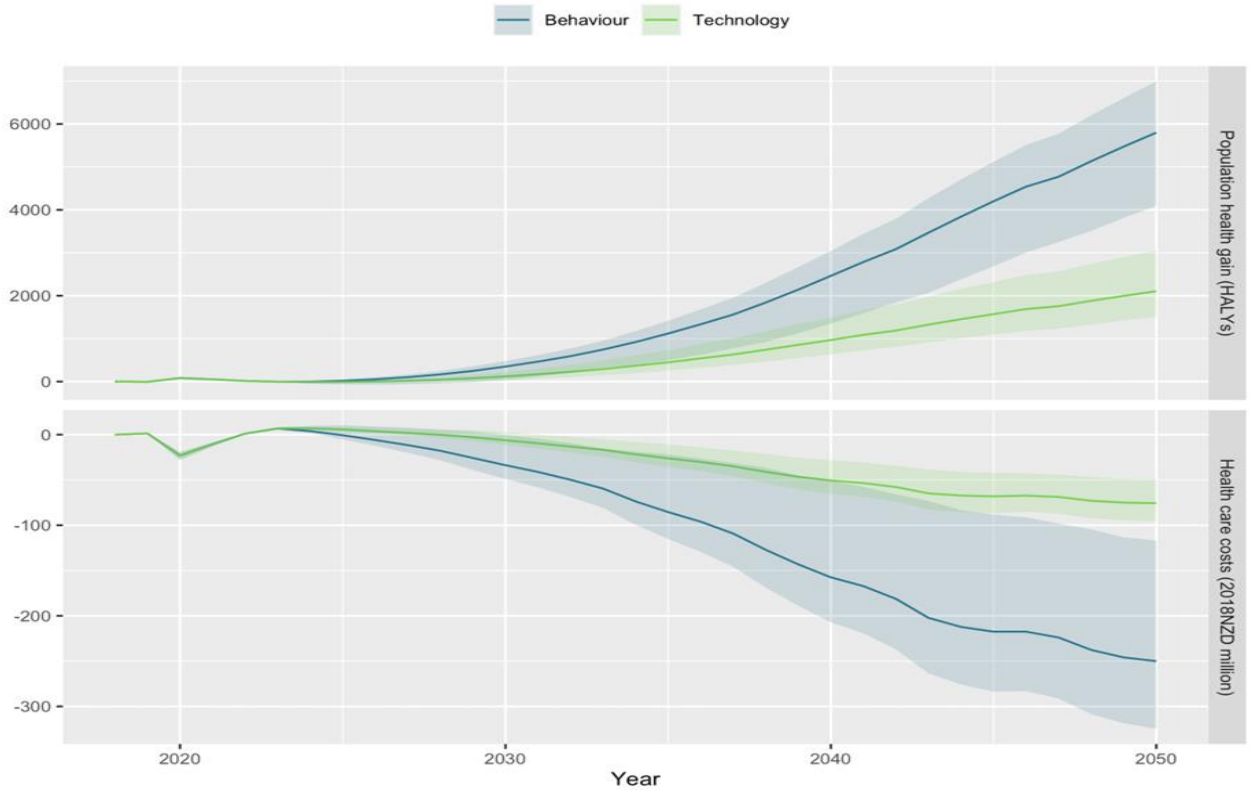
Outline of model



Passenger land transport only i.e. no freight, no air travel

CCC: Climate Change Commission
GHG: Greenhouse gas
BMI: Body Mass Index

Health gain out to 2050



Healthy life expectancy gains

0-4 years	Māori	Non-Māori	Difference
Female			
Baseline	63 years	71 years	**8.3 years**
Behaviour	+69 (51 to 87) days	+54 (40 to 66) days	**-0.51%**
Technology	+23 (16 to 33) days	+17 (12 to 24) days	**-0.2%**
Male			
Baseline	61 years	70 years	**9 years**
Behaviour	+58 (43 to 72) days	+42 (29 to 53) days	**-0.49%**
Technology	+21 (16 to 28) days	+16 (11 to 22) days	**-0.18%**

Values are means and 95% uncertainty intervals

Lifecycle GHGe in 2050

	Vehicle - tailpipe	Vehicle - other	Food- related	Total
Values in 2050 (million kg CO_2 eq)				
BAU	9,300	1,300	38	**11,000**
Behaviour	1,300 (1,100 to 1,600)	1,400 (1,100 to 1,800)	150 (31 to 290)	**2,800 (2,400 to 3,300)**
Technology	850 (600 to 1,200)	1,700 (1,200 to 2,300)	55 (12 to 110)	**2,600 (2,100 to 3,300)**

Values are means and 95% uncertainty intervals

Key results from this work

- More health gain for everyone in pathway that increases walking and cycling and reduces car travel compared to the pathway that focuses on electric car uptake and BAU
  - Magnitude of gains somewhere between those of 10% tax increases on tobacco and smoke free generation

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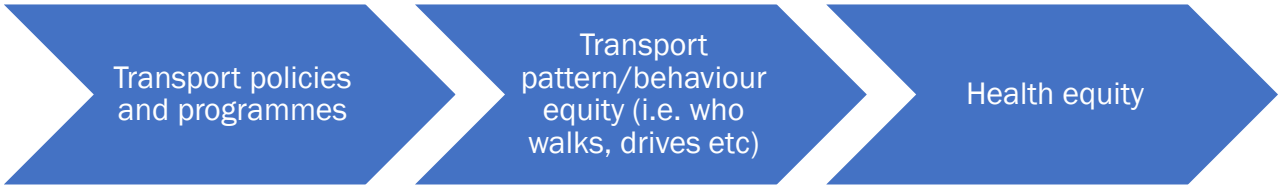
- More health gain for everyone in pathway that increases walking and cycling and reduces car travel compared to the pathway that focuses on electric car uptake and BAU
  - Magnitude of gains somewhere between those of 10% tax increases on tobacco and smoke free generation
- Greater equity gains also in the pathway that increases walking and cycling and reduces car travel
- Little difference in GHGe between the pathways in 2050 when you take a more lifecycle approach to measuring GHGe

Key messages of this work

Two levels to think about for health and health equity for a decarbonised transport system:

- Overall system design
- The policies and programmes within the transport system



Limitations of this work

Climate Change Commission view of realistic emissions reduction

- Walking is not well thought through in these pathways, which is important for health

Conservative estimates of health benefits within the model

Range of axes of inequity we could not look at eg Pacific people, disability, socioeconomic status

Doesn’t include commercial transport – many potential health impacts

Acknowledgments

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Further information

Preprint of the results of this work available here:
https://www.medrxiv.org/content/10.1101/2024.01.29.24301894v1.article-metrics

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Equity in transport patterns impacts health equity