

ENGINEERING BETTER TRANSPORT:

Briefing to the Minister of Transport (December 2023)

Transportation Group represents industry professionals

The Transportation Group congratulates you on your appointment as Minister of Transport. We are pleased to see transport and infrastructure are priorities of the Government. The Transportation Group is the leading industry body for transportation professionals, with over 1,100 members across public, private and tertiary sectors. We are a technical group of Engineering New Zealand and operate with the purpose of advancing the knowledge, planning and management of land transport. We also have subgroups specialising in [road safety](#), [traffic modelling](#), [traffic signals](#) and the [Trips Database Bureau](#).

We would like to meet with you in your first 100 days. This meeting would provide an opportunity to discuss your objectives for the transport and discuss challenges and opportunities for the transport sector and industry at large.

Recognising the pivotal role of evidence-based decision-making in fostering a robust economy and country, the Transportation Group is committed to support you.

Electric Vehicles and technology can only take us so far

New Zealand cannot meet its international legal obligations for reaching Net Zero emissions by 2050 with vehicle electrification alone¹. Autonomous vehicles are still decades away from becoming prevalent enough to make a substantial difference to road safety. The Transportation Group has a long history of supporting integration of land use and transport planning with choices for how people access goods and services. In a low carbon transport system, people (mainly in urban areas) who are willing and able are free to choose to travel in healthy and sustainable ways that meet our climate commitments.

Roads of National Significance 2.0 must prioritise regional travel

Investments in transportation infrastructure and policy decisions significantly impact travel patterns and residential and employment choices. Expanding roads often leads to increased driving in the

¹ [Full report: 2023 Draft advice to inform the strategic direction of the Government's second emissions reduction plan \(April 2023\) » Climate Change Commission \(climatecommission.govt.nz\)](#)

long run, negating any initial benefits in terms of congestion and safety.² MRCagney's [induced demand calculator](#) provides a tool to see the effect of induced demand on New Zealand cities.

Improving safety and efficiency without inducing more congestion

Lifting the standard of existing highways will improve safety and efficiency. For example, the Waikato Expressway has significantly reduced crash rates on its corridor. Extending the Waikato Expressway from Cambridge to the Tauranga turnoff, another proposed RoNS project, could improve safety and efficiency significantly. However, RoNS should not provide better access to farmland for housing subdivision, because then the freight vehicles of the future will be trapped in more congestion again. Transportation and land use policy must be coordinated.

Funding is a critical issue

Sustainable infrastructure management must be ensured

The current level of funding provided to maintain the road network is below a sustainable level, especially with increasing intensity and frequency of storms that are damaging our transportation system. This creates a burden for future generations. A key challenge will be to lift the funding (or reallocating it from new road construction) to ensure that assets are effectively and sustainably managed at an optimal whole of life-cycle cost. Under-spending on maintenance, or expanding the network without an increase in revenue, will lead to asset degradation and higher future costs.

Need to consider other forms of funding

Transport funding is increasingly limited; fuel excise duty is simply not sustainable as a funding source because of increasing fuel efficiency of vehicles, and increased numbers of hybrids and EVs. We understand there are proposals targeting additional road pricing and “city deals” for implementation as soon as 2026. This is an enormous step in policy and the Transportation Group supports these urgent changes.

Tolling for efficiency and funding

In urban and peri-urban areas, tolls can be a solution for constrained funding and address the issue of induced traffic. Road tolls play a role in prioritising high-value trips, particularly those related to freight, which is crucial for our economic growth.

Risk allocation and future policy implications

Using public-private partnerships for road tolling needs to be considered alongside the appropriate responsibility for risk.³ For example, some PPPs require governments to avoid reducing Vehicle Kilometres Travelled, which is a key Net Zero target, as that would reduce the revenue to the private operator of the new infrastructure, hamstringing future choices on land use and transport.

² <https://www.vtpi.org/gentraf.pdf>

³ <https://ppp-risk.github.org/risk-allocation-matrix/transport/road/> and <https://ppp.worldbank.org/public-private-partnership/identifying-risks>

Mode shift has massive health and economic benefits

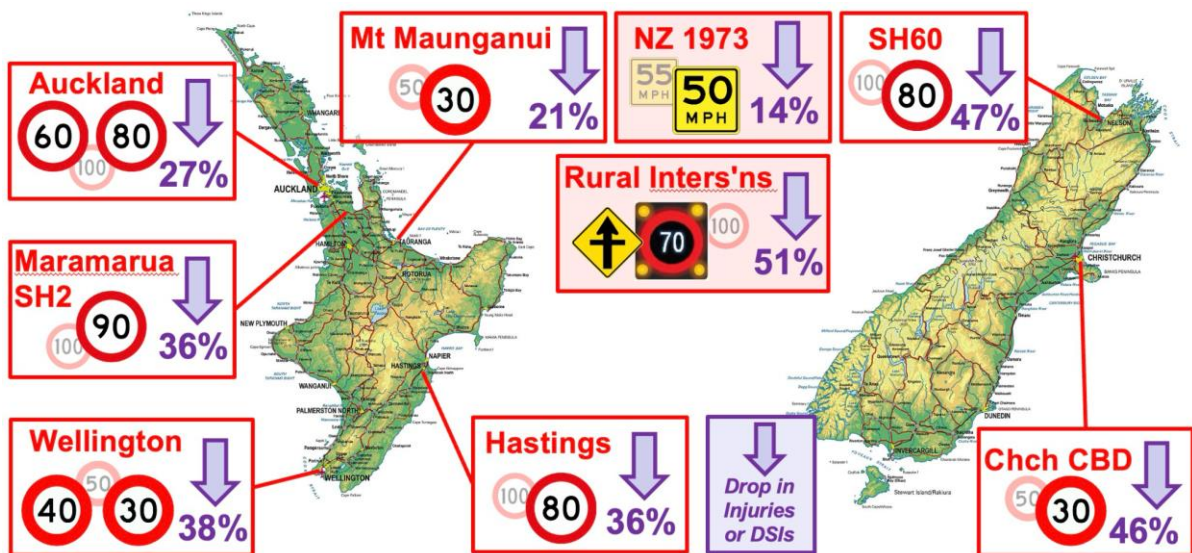
New Zealand research has found 3,300 people die each year because of air pollution (PM_{2.5} and NO₂), 70 percent because of cars.⁴ That is approximately 7 percent of deaths in New Zealand each year. Exposure to air pollution is also sending more than 13,000 people to hospital for respiratory and cardiac illnesses and giving the same number of children asthma. The social cost of these health impacts was estimated to be \$15.6 billion. Vehicle noise is also an issue in our communities affecting sleep and long-term health.⁵

The answer in our urban areas is mode shift from motor vehicles to walking, cycling and public transport (and reducing the need to travel in our cities). Travel occupies, on average, one hour per person per day. If healthy transport choices are promoted through safe and accessible infrastructure, the benefits will include reduced public health spending.

Evidence shows that mode shift is only effective if both “carrots” (improved transport choices) and “sticks” (road pricing, parking management, land use policy incentives) are implemented.

We have the tools to reduce road casualties

Deaths and serious injuries are not a “toll” we must pay, and unfortunately, we are not succeeding in reducing them.⁶ The National Road to Zero Strategy and Action Plan have attracted attention primarily around speed limit changes but contain many worthwhile action items. Targeted speed limit reductions have substantial human and economic benefits and do not result in significant travel time impacts (especially in congested urban networks).⁷ The figure below highlights how reductions in speeds have reduced injuries due to vehicle accidents.



⁴ <https://environment.govt.nz/publications/health-and-air-pollution-in-new-zealand-2016-findings-and-implications/>

⁵ <https://www.nzta.govt.nz/resources/research/reports/656/>

⁶ <https://www.transport.govt.nz/statistics-and-insights/safety-road-deaths/>

⁷ Koorey, G. Australasian Road Safety Conference 2023

Like industrial safety, efficient transport safety work prioritises the most effective actions: getting rid of risks, swapping risky things for safer ones, and using engineering to make unavoidable risks safer. In a risk management hierarchy, it's a last resort to rely on rule compliance and safety equipment. This means focusing on reducing the need to drive; reducing exposure to traffic; improving public transport, walking and cycling; engineering roads and streets to reduce speeds and conflict points; reducing speed limits; and finally improving crash protection for people and vehicles.