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# Ministry of Transport, Long-Term Insights Briefing 2022

Report of the Transport and Infrastructure  
Committee

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Chairperson

# Ministry of Transport, Long-Term Insights Briefing 2022

## Recommendation

The Transport and infrastructure Committee has considered the Ministry of Transport's long-term insights briefing and recommends that the House take note of its report.

## Introduction: Automated vehicles in New Zealand

In August 2022 Te Manatū Waka the Ministry of Transport produced its first long-term insights briefing, as required by the Public Service Act 2020. It was referred to this committee by the Governance and Administration Committee. The briefing is titled *The impact of automated vehicles operating on Aotearoa New Zealand roads*. The ministry explained that it chose this topic as automated vehicles (AVs) present one of the areas of greatest uncertainty in the transport sector. AVs have been “almost here” for a long time now, but it is still unclear when fully automated vehicles will begin to operate in New Zealand. Also, the extent to which they will affect daily life is unknown.

The ministry used the long-term insights briefing to assess the opportunities and risks associated with AVs and how their introduction could affect New Zealanders. The briefing focuses on vehicles that would be almost or fully autonomous most of the time, not vehicles with specific automated features, such as autonomous emergency braking or lane control. The Acting Secretary of Transport said that a fully automated transport system will not become a reality for quite some time. He explained that an automated transport system has the potential to be safer, cheaper, and more accessible. If deployed effectively, AVs could reduce emissions and congestion, transcend the barriers between personal and public transport, and offer new options for designing cities. The Acting Secretary expressed thanks to all those, from the public and private sectors, academia, and general public, who contributed to the briefing.

## About long-term insights briefings

The Public Service Act 2020 requires chief executives of government departments to develop and publish long-term insights briefings at least once every three years. The briefings must be produced independently of the relevant Minister, and the chief executive must consult the public on the subject matter of the report and a draft version.

The purpose of the briefings is to inform the public about medium- and long-term trends and future risks and opportunities facing New Zealand. The briefings should provide information, impartial analysis, and potential policy responses to the challenges identified in the briefing. We feel the ministry's briefing met these requirements.

## The ministry's main findings

The Ministry of Transport's long-term insights briefing considers the opportunities and challenges that automated vehicles (AVs) may bring within the context of the Transport Outcomes Framework.<sup>1</sup> The framework sets out the purpose of the transport system and what outcomes the system aims to provide. The five main outcome areas are discussed below. They are: inclusive access, healthy and safe people, economic prosperity, environmental sustainability, and resilience and security.

### Inclusive equitable access to AVs

The ministry predicts that AVs could improve access to services and society for many New Zealanders. However, AVs would need to be affordable, provide for the needs of all people, and be deployed across the country to ensure equitable access. If AVs are too expensive to buy or use they will be inaccessible to many people. For example, some people may be unable to use AVs as they cannot afford a smart phone which would likely be needed to connect to an AV.

AVs could improve access for people with disabilities and mobility issues. We discussed the importance of ensuring that people most in need of using AVs would be the first to gain access to them. The ministry said that disabled and elderly communities were very interested in the prospect of AVs improving their independence. These groups provided their perspective on many matters discussed in the briefing. The ministry noted that policy and regulation could be used to incentivise manufacturers to include features in AVs that would enable people with impairments to operate them.

Finally, to ensure equitable access AVs need to be available everywhere and the physical and digital infrastructure needed to support them must also be available. People living in places with limited public transport options may not be able to access AVs if distribution is not managed and equitable. The ministry suggested that regulation would be needed to incentivise businesses to use AVs all around the country and share them.

### Shared ownership of AVs

The briefing emphasises that a shared-ownership model where numerous people can use one AV would provide the most equitable access for everyone. The ministry noted that private AV ownership would likely increase congestion, making it harder for anyone to access work or their community. The ministry suggested that policy and investment decisions about AVs would need to encourage shared usage and equitable access for all New Zealanders.

### AVs in rural areas

We asked whether the ministry had considered what would be needed to support the use of AVs in rural areas. The ministry explained that it is difficult to tell at this stage. Some vehicles will be manufactured to operate independently of infrastructure, others not. The ministry explained that physical infrastructure, including road marking, parking places, and pedestrian crossings, may need updating to ensure AVs can safely navigate using this infrastructure.

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<sup>1</sup> Te Manatū Waka Ministry of Transport, *Te Anga Whakatakoto Hua mō ngā Waka: Transport Outcomes Framework*.

Digital infrastructure such as high-speed internet access may also need updating. This makes it hard to tell what sort of infrastructure will be needed.

## **Safe, healthy people and AVs**

AVs could reduce the number of deaths and serious injuries caused by road accidents but this will depend on when and how they are deployed. The challenges of using AVs in a mixed traffic environment are largely unknown. The ministry raised the concern that AVs may not understand local road rules or driver etiquette, which could cause confusion or accidents. Also, some AVs will still require driver input, and drivers may vary in their ability to switch their concentration back to driving after letting the vehicle drive. The ministry also considered the risk of people becoming too comfortable using their AV, and using them when active transport such as walking or cycling would be the more appropriate choice.

The ministry emphasised that safety must be the priority for AV regulation. We heard that, overseas, AV safety issues are being addressed through legislative and non-legislative means. Working parties under the United Nations Economic Commission for Europe (UNECE) are developing regulations for the safe deployment of AVs, including the operation of AV software systems. New Zealand's laws would need updating to clarify who is liable for AVs operating on this country's roads. The responsibilities of manufacturers, importers, and other stakeholders would need to be made clear. The ministry suggests that changes to primary legislation and the Road Transport Rules could be necessary to aid the safe use of AVs. Further, educating users and the wider public about AVs could improve safety.

## **Environmental impact of AVs**

The ministry said that although most AVs use clean electric power, the manufacturing and disposal processes have an adverse effect on the environment. Private ownership models could lead to a high number of AVs being produced and disposed of. Private ownership models would also increase traffic congestion: more vehicles on the road, whether automated or not, would increase the need to build more roads and other infrastructure to support AVs. The ministry explained that building of this infrastructure would create emissions and have a negative effect on the environment. The briefing stated that some local government bodies are already focusing on how to increase passenger trips, not vehicle trips.

The briefing emphasised that policy makers and urban planners should focus on enabling active modes of transport. The ministry said that removing vehicles (AV or not) from city centres should be a priority. Future transport investments need to encourage shared use of AVs and connecting people to public transport hubs.

To mitigate the negative effects that AVs could have on the environment, standards would need to be set. Acceptable processes and materials, and strategies for repair and reuse of parts, including batteries, would need to be clarified in the standards. The ministry suggests there need to be obligations on manufacturers to ensure the safe disposal of irreparable AVs and parts. Also, regulating and funding the repair of AVs will reduce the negative effect they have on the environment.

## **Businesses and economic prosperity**

AVs could improve the efficiency and productivity of New Zealand businesses, as operations could be 24/7. The need to pay drivers could be gradually phased out, further improving operating efficiency. The ministry noted that some potential uses of AVs in business are yet to be realised.

We heard that using AVs in the freight system could reduce operating costs, increase flexibility of services, and be used in ways not yet considered. However, the ministry warned that a just transition would be a slow one. Time will be needed to adapt compliance and licensing regimes, change vehicle standards, and develop new roles in the industry.

The briefing mentions that local governments will need to find different sources of revenue because revenue from taxing fuel will decrease as AVs become more common. Revenue from parking will also decrease if AVs are shared and hence not left parked for as long. The ministry suggested taxing based on kilometres travelled or the number of people in the vehicle as alternative sources of revenue.

The ministry acknowledges that the introduction of AVs presents both opportunities and challenges for businesses. Government will need to understand where the greatest benefits for AV deployment lie, and decide how to support industry to capitalise on these opportunities. The ministry said that businesses will need support and encouragement to transition to AV use in a way that is fair and just. It also suggests the Government monitor what happens overseas and how other governments respond to AVs.

## **Security risks and resilience**

The briefing explained that using AVs will pose new threats to people's security. AVs will hold personal information about their users and the public. They will be connected to the internet and third-party apps, and subject to aftermarket modifications. All these factors increase the risk of hackers stealing private, personal information or taking over control of the vehicle for malicious purposes.

We noted that some cars are already connected to the internet and can receive software updates wirelessly. With this in mind, we asked whether cyber security breaches are already a problem. The ministry acknowledged that this is a potential issue but said it does not have the expertise to make a definitive assessment of the current risk.

We asked what other countries are doing to address or prepare for the cyber security risks that AVs may bring. We heard that Australia is well ahead in regulating to prepare for AVs. Australia is currently consulting on a regulatory framework that would require manufacturers to show that vehicles have appropriate safeguards to protect them from cyber security breaches. We heard that the laws in the country where a vehicle is manufactured will determine the safeguards installed to protect people's security.

The ministry suggests that New Zealand should develop a clear cyber security framework that will reduce the risks mentioned above. Regulations should be developed to manage third-party apps and aftermarket modifications. Regulations should also clarify liability if an AV's security is breached. AVs could have security ratings to inform consumers of the risk associated with driving or owning the AV.

The resilience of New Zealand's transport system could be affected by global supply chains for AVs or infrastructure breakdowns. The briefing stated that AVs and the parts needed to repair them will come into New Zealand via global supply chains. Disruption to these supply chains could result in an AV being unusable until parts arrived and it could be repaired. AVs will be dependent on a robust charging network and other infrastructure. The transport system could stop working completely if this infrastructure suffered breakdowns due to power outages or adverse weather events.

## **Preparing for the introduction of AVs**

The ministry suggests that, to prepare for AVs, New Zealand needs systems, processes, investment, and regulations that aim to introduce AVs in a way that supports the broader outcomes of the transport outcomes framework.

The briefing notes that the Government is currently taking a "hands off" approach. The ministry warns that this could lead to misuse and problems associated with the first fleet of AVs, as laws would not be up-to-date to regulate production and use. The briefing outlines what some other countries are doing to prepare. Some countries are waiting to see what happens and monitoring the situation, others are developing regulatory frameworks, and some are testing AVs under temporary regulations and systems.

## **Working with industry and monitoring AV developments**

We heard that Omeo, a company that uses new technology to build personal transport products, and a number of other automation companies engaged with the ministry about the briefing. The ministry explained it engaged with parties likely to be affected by the introduction of AVs. This included representatives from the motor industry.

The ministry has an innovation team that will be monitoring technological developments associated with AVs. We heard that the ministry and Waka Kotahi are working with industry to prepare for when AVs become more common in New Zealand. This involves working with interested parties and discussing what could be trialled and pursued.

## **When to bring AVs into the transport system**

AVs would need to be introduced to different parts of the transport system at different times. We noted that automated trains and using AVs to transport freight between hubs would likely be easy to implement and could happen early on.

We agreed that it is important to bring AVs into the transport system when they will meet an obvious need. The ministry said there are already obvious opportunities to make use of AVs in specific parts of the transport system. For example, automated buses could provide reliable frequent services and alleviate the pressure placed on the limited number of bus drivers. The ministry said that if the Government clearly sets out what outcomes it would like the transport system to achieve, technology can be introduced to help meet those outcomes.

## **Reassuring people that AVs are safe**

The ministry acknowledges that people will not use AVs or want them in their community if they do not trust that they are safe. The Acting Secretary said that the social licence for AVs will need to develop. He acknowledged that it will be difficult for people affected by an AV accident to understand that there is not another person to blame and that the liability likely sits with the manufacturer. The ministry acknowledges that it will take time for people to accept this, and it could affect people's views of AV safety.

## **National Party differing view**

National thanks officials from the Ministry of Transport for their Long-Term Insights Briefing 2022 into automated vehicles.

National welcomes continued investigation into the benefits of automated vehicles and the benefits they could provide to increased mobility and safety on our roads.

While the ministry's report seeks to raise concerns around how automated vehicles could make it harder to create mode shift towards public transport, these issues should be set aside to ensure that regulatory settings are set correctly for automated vehicles, rather than pursuing an ideological view around car use which appears to be a feature of the report.

## **Committee comment**

We thank the ministry for this briefing. We appreciate the way it explores some of the opportunities and challenges that New Zealand will face as automated vehicles begin to operate here. We found it useful to consider the benefits and risks associated with AVs and how the Government could navigate these in the future. We understand that there are a lot of unknown factors when it comes to AVs. We are interested in further exploring them, particularly shared-ownership models. We note that a shared-ownership model would increase access for all and have a positive effect on the environment as fewer AVs would eventually need to be disposed of.

We encourage others to read the ministry's briefing.

## Appendix

### Committee procedure

We met between 29 September and 20 October 2022 to consider this briefing. We held a hearing with Te Manatū Waka the Ministry of Transport. [The long-term insights briefing is available here.](#)

### Committee members

Shanan Halbert (Chairperson)  
Hon David Bennett  
Simeon Brown  
Paul Eagle  
Hon Julie Anne Genter  
Dr James McDowall  
Terisa Ngobi  
Helen White