

Te Manatū Waka Ministry of Transport Long-Term Insights Briefing

The impact of autonomous vehicles operating on New Zealand roads

Summary of consultation submissions: August 27–17 September 2021

This document provides a summary of submissions on the scope and content of Te Manatū Waka Ministry of Transport's Long-Term Insights Briefing (LTIB) to Government. Thank you to everyone who took the time to provide a submission. Your input will help build and strengthen the Ministry's LTIB paper.

Overall feedback

Overall, most submitters agreed with the topic that the Ministry has chosen to focus on. Of the 27 submissions received, only one explicitly disagreed with the focus on AVs as the topic chosen for the LTIB, with two others questioning the feasibility of AVs as a part of Aotearoa's mobility future. We hope the final paper helps address the concerns from these three submissions.

The Ministry received submissions from a broad range of advocates, reinforcing the wide-ranging implications of this work for the Ministry and New Zealand. The summary below reflects some of the common themes. This does not preclude the Ministry from including additional suggestions. We will work with submitters to discuss these and other ideas through the development of the LTIB.

We received 27 submissions:



The Ministry received some great suggestions around how the scope and content of the LTIB could be improved. Several submitters commented on the importance of emphasising the potential social and equity impact of AVs, the role of government and regulation, and data and cybersecurity concerns. A few submitters wanted the impact of AVs in the wider transport ecosystem, other parts of society, the natural environment and supporting infrastructure requirements included in the discussion. Other submitters mentioned the commercial and supply chain side of AV deployment, and one commented that the LTIB needed to cover a broad range of AV use cases in order to provide a comprehensive assessment of their impact. Submitters also wanted to see discussion on how AVs will feature in a New Zealand-specific context.

Many of the comments received reinforced our existing thinking around what the LTIB should cover. There were also points that had not been previously considered or were not given prominence in the consultation document that we will endeavour to better reflect in the final paper. A few comments identified important issues but are beyond the scope of what can be covered in the LTIB, or we feel are receiving enough attention through other pieces of work currently underway within the Ministry. These are discussed in more detail below.

Summary of responses

Important ideas that will be reflected in the final LTIB

There was consensus across a number of submissions on several key themes. While many of these further reinforced our thinking, a few suggestions helped highlight either a) things we had not yet considered or b), aspects of the LTIB that need greater emphasis.

The need to focus on the human aspect of AV deployment in Aotearoa was a common thread across a number of submissions. Topics including equity, rural and urban differences, public health concerns, human factors (i.e. interaction and trust in the technology and human behaviour as a result) and the social impact of AVs were recurring themes. We agree that people should be placed at the centre of any discussion involving new technology (as evidenced by the Ministry's [Transport Outcomes Framework](#)) and this may not have come through as strongly as we would have liked within the consultation document. Within the LTIB we will ensure that the outcomes we want to achieve, namely improved wellbeing of our people and the liveability of our places, are a central lens for our discussion and conclusions. This will be clearly articulated at the front of the document.

“In terms of the proposed content of the LTIB, it is important that the social impact of AVs receives at least as much attention as the other areas identified. - Academic ”

In line with greater emphasis on the human component of AVs in Aotearoa, some submitters wanted more detail around the roles and responsibilities of the different parties involved in the use,

“ Provided that all effects are considered, including the effects on all road users, on the land transport system as a whole, and on the wider country and the community. All these aspects must be understood fully and taken into account. - Advocacy Group ”

distribution, maintenance, and supervision of AVs. Training and education for both those involved in testing and inspecting vehicles and the driver/user was highlighted. We are aware that these are aspects of AVs that need to be addressed in the New Zealand-context and intend to incorporate discussion around these issues in the final LTIB.

Specific aspects regarding the safety of AVs were also raised including the need to address the implications of a mixed fleet environment (particularly in Aotearoa where we see slow turnover of the fleet), and the impact of AVs on current vehicle dependence. Others noted that there needs to be

more discussion around the viability of AVs, New Zealand's unique driving environment and its impact on the safe operation of AVs. A few submitters also mentioned the need to emphasize the importance of potential security issues (both cyber security and national). We will speak to these points in the final LTIB in line with the seven key areas we have identified in the consultation document.

It was also noted that the paper needs to capture a broad range of vehicle use cases including public transport, shuttles, freight, and micro-freight. We agree it is important to cover all relevant use cases and intend to capture a range of land-based autonomous goods and passenger vehicle use cases within the LTIB. Related to this will be discussion on the commercial aspects of AVs such as global and local opportunities and constraints surrounding these different use cases.

Feedback was also received that the paper should include discussion on how people engage and interact with technology, AVs potential impact on existing transport issues (like parking and congestion), the impact on driver licencing, and how the data collected from AVs could be used and for what purpose. We agree that these are all important issues to cover in this paper and will include commentary on each of them.

“ Drivers currently receive no training on these technologies. Should a licence issued in a Level 0/1 manual transmission vehicle really be valid for driving a Level 3 vehicle, which requires emergency takeover after a period of disengagement? - Academic ”

Ideas that need further consideration before inclusion in the final LTIB

Some submitters also noted aspects around AVs that we had not covered within the outlined scope or content of the LTIB. While we see the following areas as important to address, each topic will need further consideration before being included in the final LTIB (as some might be best covered elsewhere).

“ We also support a focus on AV infrastructure. We suggest that it be specifically mentioned up-front and include the challenges of equity and access. Key considerations might include, for example, whether new AV infrastructure will reinforce existing infrastructure deficits where roading infrastructure is already poor, and whether New Zealand can afford to build and maintain AV infrastructure.

- Government agency ”

Infrastructure requirements, investment costs versus benefits, and broader concerns around urban planning, land use and urban design were all raised as potential areas the LTIB could cover. We agree that while these areas are important to understand, they may require more data analysis and detailed modelling than time allows to develop this LTIB. We will work through the timing to develop this work before we decide whether this can be included in this briefing.

Other submissions identified the need for greater emphasis on the regulatory requirements for AVs, including legal liability issues, law enforcement and compliance standards. Again, these are important issues

to cover, but we will need to clarify the capacity we have to cover them in all in this paper. These issues will however be included in the ongoing regulatory work around AVs the Ministry is developing.

Two suggestions were made around the shape of the paper. Both suggested that the paper centre around the five outcomes identified in the Transport Outcomes Framework (resilience and security, environmental sustainability, healthy and safe people, economic prosperity, and inclusive access). Given the focus of these briefings is around the wellbeing of New Zealanders, there is a natural fit with the Outcomes Framework. We will give further consideration as to how the paper could be structured around the five outcomes. This will also depend on how easily the seven key areas already identified can be aligned to the outcomes without creating significant duplication in the paper.

Important ideas but beyond the scope of this LTIB

Several ideas were also raised through submissions that are valid transport issues needing further investigation, but we feel they still fall out of scope of the current LTIB. The main reasons for exclusion of these topics are either a) because there are already existing workstreams underway at the Ministry that will likely cover the issue in more depth or b), the subject matter is not viewed as a priority when addressing the impact of AVs operating on New Zealand roads.

Several submissions raised the importance of decarbonisation and climate change as pivotal transport issues. Aligned to this were comments around the AV product lifecycle and environmental sustainability surrounding AV development. We agree that these issues are crucial to address and an important part of the strategic context for the LTIB but think that they are better placed under the work to come out of the recent discussion document *Hikina te Kohupara – Kia mauri ora ai te iwi - Transport Emissions: Pathways to Net Zero by 2050*. This document sets out potential pathways and policies to phase out emissions across the entire transport system, and by extension, includes the potential issues surrounding product life cycle and environmental sustainability. All members of the public will be given the opportunity to provide feedback on Government initiatives to reduce transport emissions when the Government releases a draft Emissions Reduction Plan (ERP) for consultation in the second half of 2021. You can read more about the Ministry's emissions work programme [here](#).

“ Resource and energy demands; we need to see mobility methods that are less energy intensive. Autonomous tech is very energy intensive.
- Anonymous ”

“ The role and impact of AVs need to be considered within the whole transport ecosystem encompassing all land-based transport modes as well as maritime and aviation. - Industry ”

Some submissions suggested we need to broaden the scope of the document to encompass not only land-based autonomous vehicles, but also those in the aviation and maritime environments. Guidance provided by the Department of Prime Minister and Cabinet (DPMC) includes ensuring the scope of

LTIB's are manageable. Expanding the scope of this LTIB would stretch the Ministry, as significant additional work and resource would be required to address all three environments within the timeframe. In addition, there is already a substantial programme of work related to automation in the

aviation sector. A focus on land-based autonomous vehicles will however raise, and address, several issues relevant to the aviation and maritime environments. Where possible, we will identify areas where issues identified through the LTIB could also be relevant to the aviation and maritime sectors.

Some submitters commented on the need to outline a research strategy for AVs in Aotearoa as part of this work. We feel this is better addressed through the existing [Transport Evidence Base Strategy](#) and the Ministry's [Transport Knowledge Hubs](#). Several projects are also underway between Waka Kotahi and the Ministry regarding advanced driver-assistance systems up to SAE Level 2 autonomy. The Ministry is also engaged with working parties at the United Nations, and connections with counterparts in Australia and Canada. These relationships provide access to the most recent research and policy thinking around AVs, that we can then evaluate in a New Zealand context. For these reasons, outlining a research strategy will not be part of the LTIB, although the LTIB may highlight areas where additional research would be valuable.

A specific focus on Connected Autonomous Vehicles (CAV) was also raised, along with commentary on the importance of testing and trialling AVs. Both of these elements are important areas to develop our understanding around. Waka Kotahi leads work in both of these areas and is developing a Future Transport Action Plan with a focus on CAV's. Waka Kotahi is also responsible for the development of testing and trialling AVs in New Zealand. As such, this work will not be duplicated in the Ministry's LTIB.

For more information go to the Ministry's [LTIB webpage](#) or email LTIBconsultation@transport.govt.nz