IMPLEMENTING AUTONOMOUS PUBLIC TRANSPORT IN NEW ZEALAND

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Author: Melissa Winters, BMus, MTF (pending)

Senior Network Planner, Bay of Plenty Regional Council

Contact: melissa.winters@boprc.govt.nz

ABSTRACT

Autonomous Vehicles (Avs) are no longer a vision of the future. They operate every day in cities across America, with over 145 million miles driven by autonomous passenger vehicles, delivery robots and long-haul trucks, as stated in the State of AV report (2025) issued by the Autonomous Vehicle Industry Association. According to Leung (2025) writing for the CarNewsChina website, in China AVs have logged around 25 million kilometres of travel, fully driverless. The Ultimo project (2025) in Europe is focussed on deploying economically viable large-scale, on-demand, and passenger-oriented Automated Vehicle public transport services.

AVs present an opportunity to address workforce constraints while improving road safety, reducing congestion, and achieving environmental and accessibility gains. New technologies offer the potential to enhance mobility, increase operational efficiency, and deliver user-centric, accessible transport solutions.

This paper explores how international success factors and technological advancements in autonomous vehicle deployments inform the feasibility and viability of implementing autonomous public transport in New Zealand, considering benefits, barriers and challenges. The role of Government to support the introduction, testing and operation of autonomous vehicles on our roads is a key focus of this research.

By drawing on international case studies, regulatory reviews, and insights from leading New Zealand subject matter experts, this paper considers the current state of autonomous vehicle technology and applies global learnings to the New Zealand context.

This research identifies four critical factors influencing the implementation of autonomous public transport in New Zealand.

Key findings from this research indicate that:

- **Technology readiness** is advancing rapidly, but variability in performance across environments remains a constraint.
- The **regulatory environment** lacks clarity and consistency, with current frameworks not yet equipped to support wide scale deployment.
- **Safety, privacy, and data security** are central public concerns, requiring robust standards and transparent governance.
- **Equity and community acceptance** is both a barrier and an enabler with public trust hinging on visibility, education, and testing.

International experiences demonstrate that AVs can deliver safer, more accessible, and more efficient public transport, provided deployment strategies are tailored to local conditions and community needs.

New Zealand has the technological capacity to trial autonomous public transport, but faces regulatory and societal hurdles needing clear, bold leadership. A coordinated, government-led approach—incorporating global best practices and local innovation—is essential to realise the potential of autonomous public transport for New Zealand's future. Overall, clear government leadership, adaptive procurement approaches, and inclusive pilot programs emerge as critical enablers to unlock the transformative potential of autonomous public transport in New Zealand.

This paper contributes to ongoing national dialogue around transport innovation and offers insights to inform next steps around policy development and pilot planning.

INTRODUCTION

New Zealand faces persistent challenges in public transport provision, especially driver shortages and constraints magnified by the Covid-19 pandemic as discussed by T Blessen (2025). The emergence of AV technology offers potential solutions to this issue - and potentially offers enhanced safety, efficiency, accessibility, and sustainability - while presenting regulatory, social, and ethical dilemmas unique to the local context. Unlike automated driver assistance systems, autonomous vehicles operating at SAE Level 4 and above, perform all driving tasks within defined operational domains without human intervention (Society of Automotive Engineers (SAE) International, 2021).

This paper reflects work undertaken as part of a Master's degree research project that explores how international advancements in autonomous vehicle technology can inform New Zealand's adoption pathways, addressing regulatory, legal, social, and technological barriers. The primary research question is: 'How can international experiences and technological advancements in autonomous vehicle deployments inform the feasibility and viability of implementing autonomous public transport in New Zealand?'

METHODOLOGY

A qualitative multi-method research design was employed. It included:

- Comprehensive desktop review of grey literature and recent academic studies on AV deployments and policies worldwide. This was essential for building foundational knowledge and contextual awareness prior to engaging with subject matter experts.

- Comparative case studies on Waymo (USA), Accessibili-D (Detroit), and OHMIO shuttles (New Zealand/EU). These case studies were selected based on relevance to public transport integration, diversity of geographic and operational contexts, and availability of documentation.

- Semi-structured interviews with four key stakeholders across consultancy, government, industry, and international policy domains using thematic analysis to identify barriers, enablers, and strategic insights.

This multi-faceted approach enabled a triangulated understanding of the regulatory, technological, and societal dimensions of AV integration. The iterative design of the methodology reflects both the complexity of the topic and the need to adapt to emerging evidence and expert insights throughout the research process.

Ethical approval was obtained, with participant confidentiality and informed consent ensured throughout.

FINDINGS

Grey Literature Review

<u>Key Companies and Deployments:</u>

- Waymo, Cruise, Pony.ai: Operating Level 4 autonomous taxis in U.S. cities like San Francisco, Los Angeles, Phoenix, and in China for Pony.ai.
- May Mobility and Beep: Developing autonomous shuttles with 'driver out' trials in the USA (Georgia, Florida) and partnerships with Uber/Lyft.

- Zoox: Testing Level 3 autonomous taxis on streets in San Francisco and Las Vegas but not yet offering public rides.
- Other companies (Mobileye, ZF, Wayve, EasyMile, Oxbotica, Navya, Ohmio) focus on autonomous driving tech or shuttles with deployments across Europe, USA, Asia, and New Zealand.

2025 Global Trials:

- China (2025): Shows leadership despite safety concerns; emphasises public education on assisted driving.
- Norway (2025): EU-backed trials in Oslo aiming for fully automated, on-demand public transport without onboard safety drivers.
- Germany (2025): Project KIRA integrates AVs into rural public transport, addressing driver shortages.
- Jacksonville, Florida (2025): Beep operates America's first fully autonomous public transit system using electric vans on a fixed route.
- Singapore (mid 2026): Plans to trial driverless public buses initially with onboard safety drivers, progressing to remote supervision.

The landscape is global and rapidly evolving with varying levels of autonomy, partnerships between tech and manufacturers, and pilot deployments in urban and rural settings. Lessons and innovations from these worldwide efforts offer relevant insights for advancing autonomous public transport in New Zealand.

Interview Insights

The interviews with four key experts revealed rich, multi-faceted insights into the regulatory, operational, technological and social challenges confronting autonomous public transport deployment in New Zealand.

Experts highlighted the absence of a clear regulatory and licensing framework in New Zealand as the leading barrier to AV deployment, a sentiment echoed by Khoo et al., (2024). Ambiguities around vehicle approvals, waivers, safety testing, and compliance standards were emphasised, alongside infrastructure deficits in supporting sensor maintenance and certification. Procurement constraints and the need for pragmatic, stakeholder-led pilots were cited to reveal practical regulatory gaps. As one interviewee said, ''*At the moment, New Zealand Transport Law says nothing about automation. There is no rule one way or the other that says if your vehicle is capable of driving itself that we can have any control on it. So the absence of a human driving the vehicle is not in itself a problem for New Zealand law.'* Social concerns included managing expectations around automation capabilities and the safety of standing passengers in autonomous shuttles.

Across the interviews, regulatory ambiguity in New Zealand was unanimously identified as the primary obstacle, compounded by procurement rules that inhibit innovation. As one interviewee noted when talking about engineers and policymakers responsible for evaluating exemption requests, *'If they feel that the government is not supportive of risk, then they'll make conservative decisions. If they think the government is supportive of risk, then they might make different decisions.'*

Technological readiness is advancing globally, but the unique operational challenges inherent in integrating autonomous driving systems, dynamic routing, user interaction, and emergency protocols within a shared public transport model are yet to be solved, as discussed in Discover Sustainability journal (Hadid et al. 2025). As stated by one interviewee, *"If you don't have a driver or a person in a position of authority on board the vehicle, how do you ensure passengers are safe?... That's part of what this software solution tries to answer through real time two way communication and a human in the loop at all times."* Safety testing tailored to local conditions, cybersecurity, and privacy are critical to building public trust. Technologically, while AV sensor and control systems have matured worldwide, New Zealand's lack of tailored safety standards and

inspection capacity hinders local deployment. Social acceptance requires experiential exposure through pilot projects, especially for vulnerable populations.

Economic benefits noted include potential operational cost savings through remote supervision, new revenue streams, and workforce transformation, while early deployments are advised to focus on fixed or flexibly routed public transport services to manage risk and scalability effectively. This synthesis underscores the urgent need for pragmatic regulatory leadership, adaptive procurement strategies, and inclusive trial programs to realise AVs' transformative potential in New Zealand's public transport landscape.

Case Study Synthesis

The case studies reveal differentiated AV service models that align with diverse community needs:

- Waymo focuses on commercial ride-hailing with high technological sophistication but limited shared mobility.
- Accessibili-D prioritises equity with community-driven microtransit, enhancing access for mobility-challenged demographics.
- OHMIO offers an infrastructure-light, platooning-based last-mile connectivity solution suited to semi-controlled urban and regional settings.

The three case studies analysed represent distinct models of autonomous vehicle deployment, each illustrating different approaches, technological solutions, operational contexts, and societal objectives. Together, they provide a broad perspective on the current state of autonomous public transport and the lessons applicable to New Zealand's unique environment.

Similarities Across Case Studies

- Advanced Sensor and AI Technology: All three projects employ sophisticated sensor suites combining LiDAR, radar, and cameras, integrated with AI-powered decision-making systems. This multi-modal sensor fusion facilitates high-resolution perception of the environment, real-time obstacle detection, and adaptive route navigation, forming the technical backbone of autonomous operation.

- Safety as a Core Priority: Continuous and structured safety assurance underpins each deployment. Waymo (2020) adopts a rigorous Safety Case framework supported by extensive real-world and simulation testing; Accessibili-D vehicles comply with the Mcity Safety Assessment Program (Lynch, 2024); and OHMIO shuttles undergo controlled environment trials to validate safety systems. Each emphasises redundancy, fail-safe mechanisms, and compliance with or exceeding regional safety standards.

- Public Trust and Community Engagement: Each service recognises the necessity of public acceptance as vital for successful adoption. Waymo engages in transparent communication through its Safety Hub and community partnerships; Accessibili-D involves targeted outreach to historically underserved populations; OHMIO emphasises in-situ demonstrations to familiarize communities with autonomous shuttle technology. Building trust through visible safety measures and user involvement is a common theme.

Key Learnings from Case Studies

- Service Model Adaptability: Different transit challenges require tailored AV service models. Waymo's focus on individual ride-hailing suits dense urban environments prioritising convenience. Accessibili-D's micro transit model demonstrates how autonomous vehicles can address mobility equity for vulnerable groups, while OHMIO showcases last-mile connectivity and scalability in less densely populated or controlled settings.

- Community and Equity Focus: Accessibili-D's emphasis on inclusivity highlights how AV deployments designed with the needs of older adults, people with disabilities, and underserved communities can significantly improve access to critical services and social

participation, underlining the social benefit potential of autonomous public transport.

- Infrastructure and Operational Efficiency: OHMIO's platooning technology allows multiple vehicles to operate in convoy, reducing infrastructure dependency and enabling scalable cost-effective transit solutions, which may be particularly advantageous in regions with limited transport infrastructure like parts of New Zealand.

- Challenges and Innovations in Regulation: Waymo benefits from favourable regulatory environments enabling large-scale commercial operations, while Accessibili-D and OHMIO operate within more constrained regulatory frameworks, highlighting the critical importance of clear, supportive governance for broader deployment.

Overall Insights

The deployment of autonomous vehicles in New Zealand is currently constrained by a fragmented regulatory landscape, procedural ambiguity and infrastructural limitations. Insights drawn from expert interviews and supporting research reveal a consistent view: while AV technology is advancing rapidly on a global scale, New Zealand's policy and operational frameworks are lagging behind.

The greatest systemic barrier to AV deployment in New Zealand is the lack of a clear, coherent regulatory pathway. Interviews with key transport consultants and NZTA advisors emphasised significant uncertainty about which authority governs AV approvals, what technical and safety standards would apply, and how existing rules designed for human drivers translate to autonomous operation. This regulatory gap constrains trials, procurement, and investment. Experts strongly advocate for pragmatic government leadership to develop tailored standards and provide strategic direction that can offer assurance to stakeholders and reduce risk-aversion among regulators and operators.

Procurement and Innovation Constraints

As detailed in Rule 7 of the NZ Government Procurement Rules (2025), current public sector procurement rules mandate open tender processes in most procurement processes. This presents inefficiencies, particularly given the nascency of AV technology. Interviewees pointed out that pilots or trials are essential to define required system attributes and benefits, but costly trial investments risk being duplicated if suppliers change between trial and tender phases. This makes early deployments resource-intensive and uncertain without supportive policy reforms or innovative procurement models that allow for progressive learning and adaptation.

Technology Integration and Operational Nuances

While the core Autonomous Driving Systems (ADS) and on-demand routing technologies are evolving rapidly globally, integrating these with user-to-vehicle interaction, particularly in shared public transport settings, remains complex. European and US experts highlighted the need for a multi-layered system architecture addressing autonomous vehicle control, dynamic fleet management, and passenger engagement including remote support and emergency communication.

New Zealand's unique transport context - such as narrow and rural roads, one lane bridges, alpine weather, unique road signage and legacy infrastructure - demands localised adaptation and scenario testing to ensure reliability and safety. This includes adapting automated driving systems to our left-hand drive system.

Safety and Localised Testing

Global safety data and testing provide a foundational benchmark, yet New Zealand requires scenario-based assessments focusing on distinctive local risks like unmarked rail and pedestrian crossings, diverse weather, and emergency service collaboration. Cybersecurity and privacy also emerged as non-negotiable priorities to protect sensitive data and maintain public trust.

Coordinated testing and real-world trials can help verify AV performance under local conditions and integrate emergency response requirements effectively.

Social Acceptance and Equity
Interviewees and academic research converge on the finding that public acceptance of AVs significantly improves with direct exposure. Pilot programs enabling New Zealanders to experience AV rides firsthand are crucial to alleviating concerns about safety, privacy, and accessibility. Ensuring equitable access - especially for vulnerable populations - and clear communication of safety protocols will foster community confidence and facilitate cultural shifts toward AV adoption.

Economic and Workforce Considerations
Industry insights from the US underline the transformative potential for public transport through AVs, including cost savings via remote supervision of fleets and opportunities for upskilling workers previously engaged in driving roles. New revenue streams such as targeted advertising and premium fare systems may also arise, enhancing financial sustainability. Flexible fleet deployment with vehicle size right-sizing is important to optimise capacity and operational efficiency, especially in mixed-use and variable-demand transit contexts.

Use Case Clarity and Scalable Deployment
Fixed or flexibly predictable routes in public transport are seen as the most suitable early use cases for AVs, supporting safer incremental deployment and more reliable service delivery. Caution is advised regarding fully flexible, point-to-point models until technological, policy, and safety frameworks evolve further. Trials using small shuttles in controlled environments, such as airport transfers or dedicated corridors, offer scalable pathways toward broader future deployment.

DISCUSSION

This research identified four key themes critical to integrating autonomous vehicles (AVs) into New Zealand's public transport system:

- Technology Readiness,
- Regulatory Environment,
- Safety, Privacy and Data Security, and
- Equity and Community Acceptance.

Technology Readiness highlights that autonomous vehicles rely on a layered technology stack - Autonomous Driving Systems (ADS), routing/navigation, and user-vehicle interaction - all at varying maturity levels. ADS hardware such as LiDAR, RADAR, and cameras, supported by multimodal AI for data fusion, have seen rapid advancements internationally but still face challenges with sensor limitations, real-time processing, and cybersecurity, as discussed by Sapien (2024).

Routing systems for dynamic on-demand transport are robust and well tested globally, including in New Zealand as seen in deployments like Baybus OnDemand (2025), and MyWay by Metro (2024) in Timaru, which was the only public transport system in New Zealand to see an increase in public transport patronage during Covid disruptions. User-to-vehicle interaction remains complex, particularly for shared public systems, requiring reliable passenger communication, accessibility, and emergency services integration.

The Regulatory Environment in New Zealand currently lacks a specific, coherent framework for AV deployment, although a work programme has been published by the Ministry of Transport (2019). While exemptions for testing exist, the absence of tailored policies creates uncertainty and operational barriers. International models highlight the need for clear, context-sensitive legislation, and expert input stresses a critical role for government leadership to enable AV adoption through standard setting and flexible procurement processes.

Safety, Privacy, and Data Security are foundational for public trust. While global safety testing provides a strong base, New Zealand requires local scenario-based and cybersecurity stress testing to address unique road and environmental conditions. Privacy concerns focus on data misuse and user tracking, emphasizing the need for stringent, up-to-date regulations. Emerging technologies like blockchain and advanced AI offer promising security enhancements, as detailed by Lippi, et al. (2025), although they also introduce new risks such as an increased need for processing power which may cause latency limitations.

According to Alqahtani et al. (2025) **Community acceptance** of autonomous vehicles (AVs) depends on factors such as age, gender, prior experience, perceived safety, trust, and knowledge, with younger people and those who have experienced AVs showing greater comfort and enthusiasm. Safety concerns, including privacy and AV reliability in complex scenarios, affect willingness to adopt the technology. As most New Zealanders lack firsthand AV experience, pilot programs could build acceptance, especially if AV systems accommodate people with disabilities, older adults, and those without smartphones.

There is a limited body of research examining Indigenous inclusion in the planning and consultation processes for autonomous vehicle use in public transport systems. Starkey and Charlton (2020) analysed data from multiple surveys conducted in New Zealand, noting that their sample achieved a relatively balanced gender distribution and encompassed a broad age range across both urban and rural populations. However, the study did not report findings by ethnicity. Further research is required to explore how Māori worldviews interpret concepts such as automation, autonomy, and machine decision-making, and to understand how AV routing, interface design, and service models can incorporate Māori values, including manaakitanga, kaitiakitanga, and whanaungatanga.

Regarding **equity**, while AVs could improve transportation for disadvantaged groups, meaningful access for low- and middle-income households requires substantial public subsidies and integration with affordable public transit. Key equity considerations include ensuring inclusive services for ethnic minorities, people with low incomes, disabilities, and limited digital access, addressing infrastructure disparities, and mitigating job displacement risks. According to Fatima, Chieh Hsiu Lee and Dannenberg (2024), public policy should emphasise community needs assessments, promoting shared AV fleets, subsidising AV use for vulnerable groups, and supporting workforce retraining, while recognising that improving traditional transit and pedestrian infrastructure may sometimes better serve equity goals.

RECOMMENDATIONS

1. Pathway towards Licence to Operate.

The New Zealand government should enhance preparedness for autonomous vehicle deployment by establishing a clear and structured pathway for companies seeking a Licence to Operate on public roads. This pathway would guide interested organisations through the necessary regulatory and operational requirements, ensuring safe and compliant introduction of autonomous vehicles.

The recent addition by New Zealand Transport Agency (NZTA) (2025) of a six step process for manufacturers and developers wanting to test autonomous vehicle technologies provides an initial step towards full operation on public roads. This six step process includes obtaining certification and licences for the vehicle and operator, and submitting a testing plan safety management plan for on-road testing activities. The final step ‘Ready to test’ requires operators to adhere to the parameters specified in their testing plan, however there is no mention of any pathway towards full and unrestricted operation.

A recommended approach is to form a Government-led working group dedicated to this purpose. This group would be responsible for comprehensively identifying existing regulatory barriers that

could impede autonomous vehicle operations and proposing practical, evidence-based solutions to address them. This working group would bring together the Ministry of Transport, which is responsible for policy decisions and leading transport system strategy, and the NZ Transport Agency (NZTA), which is responsible for delivering transport solutions on behalf of the government, specifically by helping to plan land transport networks, providing access to and use of the land transport system, managing the state highway network and investing in land transport. NZTA also has a leading role in relation to public transport, including the setting of operational policy, standards and allocation of funding.

An initial task for the working group should involve benchmarking international best practices by identifying countries that have already implemented Licence to Operate frameworks for autonomous vehicles, eg. Singapore, United Arab Emirates, China, and some American states. Analysing their regulatory documentation can provide valuable insights and serve as a foundation for developing a tailored New Zealand-specific system that reflects local conditions, legal frameworks, and safety priorities.

Additionally, a thorough review of all relevant legislation, including traffic laws, vehicle safety standards, and data/privacy regulations, must be conducted. To specifically include public transport this review will also need to also consider Requirements for Urban Buses (RUB), and public transport procurement rules. This review will assess the applicability and adequacy of existing statutes and rules concerning autonomous vehicle technologies. Where necessary, recommendations should be made to amend or supplement legislation to ensure it supports innovation while maintaining public safety and confidence.

This coordinated and strategic approach will help position New Zealand as a proactive and responsible facilitator of autonomous vehicle technology on its roads.

2. Establish a National AV Data and Evaluation Framework

At the current time the New Zealand Transport Agency (NZTA) does not have legislated powers to regulate automated vehicles or require reporting, however, to complement regulatory clarity and public engagement, New Zealand should establish a national framework for autonomous vehicle data collection, sharing, and evaluation. This initiative would ensure that AV trials and deployments generate actionable insights for policymakers, researchers, and industry stakeholders, while maintaining transparency and public accountability.

Key components of this framework could include:

- Standardised Data Protocols: Define consistent metrics for safety performance, operational reliability, environmental impact, and user experience across AV trials. This would enable comparative analysis and evidence-based policy refinement.

- Privacy and Ethics Oversight: Develop clear guidelines for data governance, ensuring compliance with New Zealand's privacy laws and ethical standards. This is particularly critical given the sensitivity of location and behavioural data often collected by AV systems.

- Open Access Repository: Create a secure, anonymised data repository accessible to approved researchers, government agencies, and industry partners. This would foster innovation and support academic inquiry into AV impacts on mobility, equity, and urban design.

- Evaluation Framework for Pilots: Require all AV pilot programmes to include a structured evaluation plan aligned with national transport objectives. This would help assess not only technical feasibility but also social acceptability, accessibility, and integration with existing networks.

By embedding data transparency and evaluative rigour into the AV ecosystem, New Zealand can

accelerate learning, reduce duplication of effort, and build a robust evidence base to guide future decisions. This recommendation aligns with international best practice, as seen in jurisdictions like the United Kingdom's Centre for Connected and Autonomous Vehicles (CCAV) and the European Union's Data Act proposals.

3. Increasing Public Trust.

The majority of New Zealanders have yet to experience travelling in an autonomous vehicle, which contributes to a lower level of public support for their deployment within the country. To foster greater acceptance and encourage innovation, the New Zealand government could play an active role in supporting the autonomous vehicle industry. This support could include facilitating real-world demonstrations and pilot programmes that allow the public to directly engage with the technology.

Also, the government could invest in a comprehensive public awareness campaign designed to address safety concerns and dispel common misconceptions surrounding autonomous vehicles. Such a campaign would aim to increase transparency by clearly communicating the technology's capabilities and limitations. Through these combined efforts, the government would help build public trust and create a more informed environment conducive to the responsible introduction of autonomous vehicles in New Zealand.

4. Prioritise Equity, Accessibility, and Social Inclusion

A key purpose of autonomous vehicle (AV) deployments is to ensure that the mobility service provided effectively meets the transport needs of vulnerable and underserved populations. To achieve this, it is essential to co-design services with target communities, engaging groups such as Māori, Pasifika, older adults, people with disabilities, and residents of low-income neighbourhoods from the very inception of the projects. This engagement will help tailor AV services to address unique community mobility gaps while respecting cultural practices and specific accessibility requirements.

The initial deployment efforts should focus on transport-poor areas and last-mile connectivity, prioritising places such as regional towns, new housing developments, airports, and university campuses that currently lack robust transit options. To further promote inclusivity, technologies must ensure that vehicles support wheelchair access where possible, accommodate users who do not use smartphones, and consider sensory impairments. Moreover, flexible booking and payment methods should be incorporated to facilitate ease of use by all community members.

The expected outcomes of these actions include broader social support for AV initiatives and a reduction in public resistance to their adoption. Additionally, these measures will enhance the alignment of autonomous vehicle programs with national inclusivity and climate goals, ultimately contributing to a more equitable and sustainable transportation system.

CONCLUSION

The findings reveal that while autonomous vehicle (AV) technology is advancing rapidly on a global scale, New Zealand faces significant challenges related to regulatory uncertainty, infrastructure readiness, safety standards, and public acceptance – particularly for transforming public transport systems. Expert interviews highlight the absence of a clear legal framework and procedural pathway as the primary barriers hindering AV deployment in buses, shuttles and demand-response services. This regulatory ambiguity, coupled with procurement constraints and a lack of tailored standards for New Zealand's unique operating environment – such as rural routes, urban congestion and variable weather - creates hesitation among stakeholders and stalls progress.

The discussion underscores that technological maturity is not the limiting factor; rather, coordinated government leadership and policy development are crucial to bridging the gap between

technological capability and legal permissibility, especially for public transport where driver shortages post-COVID have strained services nationwide. Safety, privacy, and data security concerns must be addressed through localised testing on public transport routes and stringent cybersecurity measures, while fostering community trust requires public engagement, education and inclusive consultations with Māori and Pasifika communities to ensure equitable access.

New Zealand should urgently adopt AV technologies for public transport to combat escalating driver shortages, reduce operational costs, improve service reliability across its dispersed geography, and advance decarbonisation goals - ultimately making mobility more accessible and affordable for all. To move forward, the government must establish a clear and practical pathway for AV public transport approvals, drawing on international best practices like Singapore's shuttle pilots and Europe's AV bus trials, while launching pilot projects and awareness campaigns. This strategic approach will position New Zealand as a global leader in autonomous public transport, ensuring innovation is matched with safety, legislative clarity, and social acceptance.

AUTHOR CONTRIBUTION STATEMENT

Melissa Winters is the sole author of this paper, which serves as a synthesis of a thesis submitted as evidence of learning for her Master of Technological Futures degree at AcademyEX.

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