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**Submission to House of Representatives Standing Committee on Infrastructure,
Transport and Cities Inquiry into automated mass transit**

I welcome the opportunity to make this submission, particularly to address issues relating to the governance and regulation of the deployment of new transport technologies to achieve economic, environmental and social objectives in Australian cities and regions

Urban transport policy and its implications for travel behaviour and for economic, social and environmental objectives is one of my key research interests. My work in this field over more and 25 years was recognised by the *Australian Council of Learned Academies* in 2015 through their invitation for me to lead the preparation of a major background report that underpinned their landmark publication: *Delivering Sustainable Urban Mobility* (acola.org.au/wp/8-delivering-sustainable-urban-mobility/)

As you are aware, city transport systems are facing unprecedented disruption through the convergence of new transport, IT and communications technologies. This convergence supports emerging new forms of transport that are creating complex challenges for governments and businesses that need to adapt to these advances. A new shared-transport economy is approaching. This is characterised by firms like Uber using GPS-enabled internet technology (known as Mobility as a Service (MaaS)), and autonomous vehicles (AVs), now in the trial phase. The decisions made about governance and regulation of platforms to enable this emerging shared-transport economy will determine the ultimate commercial structures for AV deployment and, in turn, their multifaceted impact on urban life. Australia is at a critical juncture for decisions about planning, governance and regulation for this difficult transition.

Recently, I have been part of an international research collaboration to understand the potential positive and negative impacts of shared and autonomous vehicle futures, and to engage with governments and industry to find ways to respond constructively to new challenges. From this work, we have partnered with leading Australian and international transport, property and legal firms to develop a research agenda for which we are seeking support through the Australian Research Council's Linkage program.

In this work, we recognise that many of the benefits claimed for the new technologies in safety and more efficient use of contested urban space are expected to be realised only when the transition to full (Level 5) autonomy is reached and when these vehicles operate as 'robo-taxis' strongly integrated with improved mass transit networks (themselves using automated technologies), rather than in exclusive private ownership. This end-state has been the dominant focus of much international research. However, transition to this end-state will take decades and the progression through the evolution of the vehicle fleet and the inevitable mixing of different stages of the new technologies will be complicated. The uncertainty in take-up of these technologies is related to: a) the extent and speed of diffusion of AVs and MaaS; and b) the extent to which new technologies trigger systemic or regime change considering aspects like institutional arrangements (private ownership), cultural values (e.g. the association of car use/ownership with freedom), market and industry structures and modes of regulation/policy-making. It is possible that the 'regime' of automobility will change

considerably but it is also possible that change is very limited, and, for instance, private vehicle ownership remains popular, even when MaaS grows rapidly.

In the car dependent Australian city, where public transport systems are already marginal, particularly in the outer suburbs, competition from AV technology is an existential threat and creates issues of equitable access to urban services. This threat presents a unique opportunity to public transport authorities to rationalise existing operations and expand their market through collaboration with MaaS and AV providers in ways that a desirable AV future undoubtedly require.

In the face of the AV disruption, strong planning is required to manage and address emergent challenges, but our research (and similar work in the US) suggests that uncertainty over AV futures is paralysing planners in jurisdictions where the role of government is already weakened. In Australia, the governance of transport systems is in flux with MaaS and AV technologies emerging at a time of increased privatisation of transport systems, including funding, financing, delivery and operation. This has had impacts on the ability of city planners and policy makers to offer a cohesive and coherent practical framework that brings the potential of future transport technologies into dialogue with a public purpose of planning and to offer the necessary frameworks that industry requires to invest appropriately in response to the opportunities offered by the new technology.

In this context, there is a clear role for the Commonwealth in setting strategic directions for urban planning in state and local jurisdictions to effectively manage the deployment of shared and autonomous vehicles

I have attached a recent publication that provides some further information on many of these issues.

I would appreciate the opportunity to present more details on these questions directly to the Committee.

Yours sincerely,

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