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# Moving Canberra 2019-2045

Response to the Integrated Transport Strategy

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March 2019



Moving Canberra 2019-2045: Response to the Integrated Transport Strategy

Engineers Australia

11 National Circuit, Barton ACT 2600

Tel: 02 6270 6555

Email: [publicaffairs@engineersaustralia.org.au](mailto:publicaffairs@engineersaustralia.org.au)

[www.engineersaustralia.org.au](http://www.engineersaustralia.org.au)

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# Introduction

## About us

Engineers Australia is the peak body for the engineering profession in Australia. With about 100,000 individual members across Australia, we represent individuals from a wide range of disciplines and branches of engineering. Engineers Australia is constituted by Royal Charter to advance the science and practice of engineering for the benefit of the community.

Engineers Australia's response is guided by our Charter and Code of Ethics which states that engineers act in the interest of the community, ahead of sectional or personal interests towards a sustainable future. Engineers are members of the community and share the community's aspirations for Australia's future prosperity.

This submission has been informed by members, especially those who form the Transport Australia Society ACT & NSW (TAs). TAs is an Engineers Australia technical society and home for transport professionals in Australia. Through Tas, Engineers Australia focusses on key transport decisions affecting the well-being, productivity and sustainability of Australian cities and regions. Engineers Australia and TAs are motivated to promote sound and consistent transport planning approaches across Australia, advocating for planning frameworks by government to guide sustainable growth.

## Introduction

Engineers Australia welcomes the opportunity to provide this submission to the ACT Government, Transport Canberra and City Services in response to the Moving Canberra, Draft Integrated Transport Strategy (the Strategy).

Transport systems around the world are undergoing a transformation. This change has been caused by a convergence of growing and changing inner city populations, consumer behaviours, new technologies and the emergence of innovative services.

Rising fuel prices, the availability of new and innovative technologies and greater social and environmental consciousness are some factors that have contributed to the transformation of global transport systems. Emerging trends towards convenience and walkability in modern urban planning represent an opportunity to rethink the way we deliver transport and it is clear that the ACT government has created the Strategy with this in mind.

Engineers Australia strongly supports the aspirations of the Moving Canberra Integrated Transport Strategy and commends the Transport Canberra and City Services in developing the draft for consultation. We look forward to supporting progress.

## Contact

To discuss the contents of this submission further please contact Sybilla Grady, Policy Advisor, on 02 6270 6195 or by email at [Sgrady@engineersaustralia.org.au](mailto:Sgrady@engineersaustralia.org.au)

# Priorities

## Procurement and capability

Engineering expertise is critical to the provision of sound professional judgement during certain stages of the procurement cycle to avoid inadequate specifications, or excessive functionality. Complex plans require engagement with experts from project inception to delivery.

It is widely understood that engineers are critical in risk management and failure recovery, but engineering expertise is often neglected until an event has unfolded. The benefits of applying engineering expertise pre-emptively and strategically in designing transport infrastructure for sustainable long-term resilience cannot be overstated.

Engineers Australia members noted the absence of plans for oversight by the ACT Chief Engineer and engagement with engineers and other technical experts throughout the Strategy. The role of the ACT Chief Engineer is to provide a broad engineering perspective to critical infrastructure projects in the ACT.

**Engineers Australia recommends that the ACT Chief Engineer has broad oversight of implementation of all transport projects in the ACT.**

## Monitoring and reporting

The previous Strategy, *Transport for Canberra: Transport for a sustainable city 2012-2013*, included a chapter dedicated to monitoring and reporting.

The current Strategy does not appear to set ambitious performance targets, instead relying on broader metrics that are not quantified.

Whilst the Strategy recommends the development of a monitoring and evaluation framework, more guidance on the content and key targets of the framework should be included.

**Engineers Australia recommends that the Strategy includes further guidance on the content and key targets of the monitoring and evaluation framework.**

## Maintenance of existing stock

Canberra is among the fastest growing cities in the developed world. In the next decade, it is predicted that the capital will become home to half a million Australians.

The amount of new transport infrastructure is important but perhaps of greater consequence, is the ongoing condition and maintenance of that infrastructure.

Inadequate maintenance of infrastructure results in compromised integrity of structures, risking our safety and our productivity. Not only is it dangerous, it is expensive. Rebuilding infrastructure that has not been appropriately maintained is more expensive than maintaining it to ensure it lasts the intended design lifecycle.

Whilst the strategy reflects on optimisation of our road network to extend the life of our existing assets, the strategy fails to adequately plan for maintenance of existing assets.

**Engineers Australia recommends that the strategy incorporates a section on operational maintenance of the existing transport infrastructure stock.**

## Mobility as a Service (MaaS)

Engineers Australia welcomes the inclusion of MaaS in the ACT integrated transport strategy.

Mobility as a Service (MaaS) is a framework which aggregates infrastructure, services, technology and information to suit the travel and lifestyle needs of individuals. MaaS brings together transport operators and third parties, allowing a seamless provision of services, information, booking, payment and customer relationship management between transport modes.

As an emerging concept, the definition of MaaS is not yet universal. The concept is also referred to as mobility management, future mobility, new mobility or smart mobility, with some jurisdictions considering it an independent framework and others an element of the aforementioned terms.

If its full potential is realised, MaaS has the ability to coordinate multimodal options, improve transport system effectiveness, strengthen public private relationships, personalise services to align with user behaviours and promote sustainable transport.

One of the key risks for MaaS is that private providers may compete with public transport, leading to increased road congestion and decreased patronage, particularly on key inter-town corridors.

The action to investigate MaaS proposals to support whole of journey transactions is strongly supported and a framework should be prepared before private MaaS technology develops too far to be easily influenced by the ACT Government.

**Engineers Australia advocates for government prioritisation of a regulatory environment to support a healthy market for MaaS to emerge inclusive of public and private transport providers.**

## Freight

The strategy includes a very short discussion on freight, which describes the need to support economic growth by increasing bulk freight movements. However, there are no associated actions to improve rail, air or road freight movements in the region.

The absence of actions to better understand the quantity and locations of key freight movements around the urban area where heavy vehicles have a disproportionately large effect on traffic capacity, safety, air quality and network maintenance requirements due to their mass is also noted.

**Engineers Australia recommends inclusion of strategic actions to improve rail, air, road and freight movements.**

## Resilience and sustainability

Engineers Australia commends the ACT government's insight in developing Moving Canberra in parallel with the ACT Planning and Climate Change Strategies.

Engineers are fundamental in the design and development of Australian infrastructure, critical in supporting our expected living standards and to ensuring resilience when confronted with natural disasters. With that in mind, Engineers Australia would welcome the opportunity to provide advice to government to embed resilience in standards, codes and specifications in relation to the three strategies listed above.

As the peak body for the engineering profession, we are in a strong position to support and guide the ACT Government to:

- Identify standards, codes and specifications which are relevant to creating and improving resilience in our infrastructure.
- Reviewing them to ascertain whether they are fit for purpose and incorporate robust assumptions and technical information to support disaster reduction and resiliency.
- Recommend enhancements to improve resilience outcomes and provide safer outcomes for our community.

We recognise the Climate Change Adaptation Strategy has a focus upon Green Infrastructure and Water Sensitive Urban Design (WSUD) and wish to emphasise the importance of these considerations in relation to new and existing transport

infrastructure in the ACT. A failure to consider WSUD as well as increasing the canopy cover will result in a failure to mitigate heat island effects, which will have consequences for power costs.

**Engineers Australia recommends that the Integrated Transport Strategy, Climate Change Strategy and ACT Planning Strategy continue development through to implementation in tandem.**

**Engineers Australia recommends engagement with engineers in the review of standards, codes and specifications in the ACT to ensure maximum risk mitigation and resilience in our transport network.**

## Data and security

By using data and intelligent transport infrastructure, we have the opportunity to unleash potential and redesign our transport experiences to change the way we travel for the better.

Connected systems are continuing to support improved transport solutions through greater choice and coordination, improved safety and increased efficiency. However, with unprecedented connectivity, comes enormous risk.

Connected and automated transport will rely on a network of internal and external sensors. These sensors will be invaluable in terms of data collection and analysis to support machine learning and greater connectivity and innovation.

Engineers Australia would like to see recognition in the strategy of cyber vulnerability and how the ACT government plans to maintain data privacy and defence in the context of smart transport networks.

**Engineers Australia recommends including data security plans in the Integrated Transport Strategy.**

## An integrated network

The ACT Government is committed to delivering a city-wide light rail network as part of the integrated public transport network. North-south and east-west light rail public transport spines are fundamental to the functionality of the network.

Light rail offers the benefits of integration never realised by heavy rail in Canberra and a light rail network can form the frame around which to create the built environment to support the community in which we live, work, and play.

There is likely an enduring need for cars in Canberra, regardless of whether they are driven by people, or are autonomous (self-driven) vehicles. However, the use of cars near public transport hubs needs to be carefully controlled. For example, within 400 to 800m of light rail stops, desirable control measures are likely to include:

- Graduated road speed limits (down to 30 km/h immediately adjacent to tram stops)
- Safe walking areas for all, especially children, the elderly, and disabled people
- Hierarchy of parking, including:
  - close-in, short duration pickup and drop off bays;
  - medium proximity parking for 2 to 3 hours (to allow people to "catch the tram" to the shops), and;
  - more remote, all day parking for people commuting to work.

Engineers Australia members are supportive of further investment in the renewal and expansion of the ACT public transport and infrastructure and modes to support interconnected, high frequency, fast, affordable, safe and reliable services.

**Engineers Australia recommends further investment in the renewal and expansion of ACT public transport infrastructure modes and services.**

## Planning for a mixed transport fleet

Transportation systems are being transformed by rapid advancements in technology. Vehicle automation, connectivity and demand for a greater focus on sustainability and the environment has seen significant investment in innovative research and design in transport technology.

Many vehicles already support simple automation systems such as parking assistance and vehicle manufacturers globally are locked in a race to provide safe and fully automated vehicles.

A legal and regulatory framework exists for automated rail, so migration to driverless vehicles in closed systems such as rail networks should be prioritised. Full automation of our rail transport networks may be achievable sooner than automated road mass transit and public risk perception towards driverless vehicles may be tempered by a rail first approach.

There is no doubt that there are challenges associated with fully automated transport and whilst fully automated road and rail transport systems will not be standard in the immediate future, it is clear that it is set to become a reality and as such adequate research planning and preparation for an electric, connected future is a necessity.

We have highlighted some mobility roles and benefits of connected and automated vehicles (CAVs) in public transport applications but it is also necessary to consider the effects of CAVs to achieving the greater liveability, accessibility and productivity expectations of the ACT community now and in the future.

Whilst the strategy recognises that the future of transport will be automated, there is insufficient focus on planning for a mixed fleet of driverless and human operated transport.

The strategy should include considerations for the transition to automation such as: special licensing for automated vehicles, to be used in specific circumstances and areas; consideration of corridor protection for automated vehicle lanes; conversion of existing lanes for the purposes of separation of driver operated and automated vehicles.

**Engineers Australia recommends a greater focus on how the ACT will manage a mixed fleet of driver operated and automated vehicles.**

## Future priority investment for strategic corridors

Engineers Australia identified some specific issues for consideration with the proposed future investment priorities for the ACT road network<sup>1</sup> as follows:

### Option 8b-1

- There only appears to be an issue in the morning peak.
- We expect Canberra light rail will take some cars off the road between city and Gungahlin during the AM peak.
- We also expect that completing Flemington Road roadworks and Horse Park Drive roadworks will take traffic pressures off the Gungahlin Drive Extension and this intersection.

### Option 8c-1

- Will require the addition of hold lines and signals to the Barton Highway. However, there's not enough storage between the Barton Highway and Ellenborough Street.
- Increasing the number of signals on the Barton Highway is not a positive step forward. NSW Roads and Maritime Services plans for Barton Highway duplication is to provide freeway grade interchanges with free flow on the Barton Highway and this should be taken into consideration by the ACT government.
- Is there an option to remove some turning movements or grade separate instead?

### Options 8c-2 and 8c-3

- Will put additional pressures on the Mouat Street and Northbourne Avenue signalised intersection.

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<sup>1</sup> ACT Government, Transport Canberra and City Services, *Moving Canberra 2019-2045: Integrated Transport Strategy*, Figure 23: Proposed future priority investments for strategic corridors, page 68.

- Feedback from Engineers Australia members suggests that this intersection option will provide a very poor level of service with the current amount of traffic on it.
- Will this project improve travel times or just add storage in the road network between intersections?

**Engineers Australia recommends engagement of experienced engineers to conduct a thorough analysis of the proposed future investment priorities for the ACT road network.**

## Active and public transport

Canberra is already internationally renowned as a great place to walk and cycle. This is partly due to the good climate, conducive topography, great town planning, and higher than average investment in building infrastructure.

However, the ACT also suffers from a relatively low population and employment density, and from urban sprawl. The challenge in a truly integrated strategy is to stitch all the modes together to increase walking and cycling, with the consequent health and wellbeing benefits.

Our members strongly support the proposed focus on more vulnerable groups and recommend focusing upon greater participation of women, the elderly and migrants in cycling and walking as well as emphasising increased safety for cycling and walking in school zones.

Engineers Australia supports the modal hierarchy of transport prioritisation by mode, as it supports a focus upon active travel and public transport ahead of ride sharing and private car.

As cities grow, so too does reliance upon public transport. Targeted policies and careful investment in public transport saw a transformation in Auckland over the last 15 years, where previously use of public transport was even lower than in Canberra.

A single line of light rail has the capacity to deliver more than three times the amount of commuters per hour than a single line motorway. Whilst it is clear that an increase in population increases the need for more roads, it is important to encourage greater uptake of public and active transport modes in tandem to maximise efficiency and sustainability and avoid inefficient land use, noise spill and cost blowouts associated with oversupply of surface motorways, elevated motorways and tunnels.

Our members see successful transport as assured adequacy of roads and motorways for freight and off peak personal travel, high quality public transport systems to meet peak demand, safe cycling and walking paths with comprehensive access to all parts of the ACT and urban planning policies which cluster high density development around key public transport nodes.

**Engineers Australia supports the modal hierarchy of transport prioritisation and recommends programs to support greater uptake of public and active transport modes over private vehicle use.**

## Community expectations and the case for change

As our population continues to grow, so too do our expectations that our transport network provides greater choice, convenience, safety and seamless connections. Community safety, underpinned by innovative resilient, sustainable design for greater efficiency and productivity form core priorities.

ACT residents want transport that delivers effective time management, value for money, safety, sustainability and productivity and clear assurance that the government will deliver against these objectives. Our members recommend that transport policy and investment should be reassessed against these community expectations.

We commend inclusion of the timeline and expect that this is reportable and reviewable at specified regular intervals or as transport technology or requirements change.

As demonstrated by the 2017 Household Travel Survey, the preferred mode of travel for Canberrans is by private car, so aside from providing wider and more efficient options, the ACT Government must consider further policy incentives and programs to encourage residents to adopt alternative modes of travel.

Aside from conventional policies offering more comprehensive and efficient public and active transport infrastructure, and traditional programs targeting behavioural change, less conventional passive incentives must also be considered to entice ACT residents to use alternative modes of transport. The musical swings by a bus stop in Montreal and piano stairs leading from a subway station in Stockholm saw dreary transit wait times transforming commuter experience into enjoyable and active transport participation.

Free Wi-Fi and plug ins for charging electronic devices are also enticing for those traveling longer distances by car. When they switch to public transport options, time previously spent focusing on the road can become productive.

Safety is also key to encourage greater uptake of alternative transport modes. Security cameras on buses, at interchanges rail, and on remote bike and footpaths and are essential to increasing appeal to leave the perceived safety of a private vehicle.

**Engineers Australia recommends that transport policy and investment be assessed against community expectations for transport that delivers effective time management, value for money, safety, sustainability and productivity.**

**Engineers Australia recommends further research into effective means of encouraging uptake of private vehicle alternatives and further information on personal safety for ACT residents using public and active transport modes.**

## Recommendations

1. **Engineers Australia recommends that the ACT Chief Engineer has broad oversight of implementation of all transport projects in the ACT.**
2. **Engineers Australia recommends that the Strategy includes further guidance on the content and key targets of the monitoring and evaluation framework.**
3. **Engineers Australia recommends that the strategy incorporates a section on operational maintenance of the existing transport infrastructure stock.**
4. **Engineers Australia advocates for government prioritisation of a regulatory environment to support a healthy market for MaaS to emerge inclusive of public and private transport providers.**
5. **Engineers Australia recommends inclusion of strategic actions to improve rail, air, road and freight movements.**
6. **Engineers Australia recommends engagement of experienced engineers to conduct a thorough analysis of the proposed future investment priorities for the ACT road network.**
7. **Engineers Australia supports the modal hierarchy of transport prioritisation and recommends programs to support greater uptake of public and active transport modes over private vehicle use.**
8. **Engineers Australia recommends that transport policy and investment be assessed against community expectations for transport that delivers effective time management, value for money, safety, sustainability and productivity.**
9. **Engineers Australia recommends further research into effective means of encouraging uptake of private vehicle alternatives and further information on personal safety for ACT residents using public and active transport modes.**

