RACQ

Submission to Queensland Parliament Transport and Public Works Committee

Transport Technology Inquiry

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The Royal Automobile Club of Queensland (RACQ) thanks the Queensland Parliament Transport and Public Works Committee for the opportunity to provide this submission to the Transport Technology Inquiry. As Queensland's peak motoring organisation, the RACQ has a vital interest and stake in the future of Queensland's transport network. On behalf of RACQ's 1.7 Million members, we advocate to ensure Queensland's transport system maximises safety, affordability, and sustainability.

The RACQ has developed this submission to identify and evaluate how transport technologies can be integrated into the Queensland transport system to maximise their benefits and mitigate their potential risks with respect to both RACQ's strategic operations and the long-term impacts to the broader transport system.

The discussion of this submission has been limited to a scope of benefits and risks RACQ expects to see from these technologies within the next 30 years. The technologies and topics this submission will cover include:

- Electric personal mobility devices;
- Electric vehicles;
- Automated driving technology and connectivity;
- Emerging operational and business models; and
- Employment and economic impacts.

This submission proposes 25 recommendations to address critical decisions which will contribute to achieving the maximal benefits of each technology or topic within the context of the broader transport system.

A summary of the recommendations for each technology or topic is listed below.

Electric personal mobility devices:

1. Review legislation to provide for the legal operation of electric personal mobility devices that encourages use for first and last mile trips as an alternative to private car use.
2. Review planning and design guidelines and retrofit areas to ensure safe interaction and mitigate conflict on shared infrastructure between pedestrian and traditional active transport, and electric mobility device users.
3. Undertake public engagement and education about the safe operation of devices and supported use cases.
4. Encourage use through provision of shared electric mobility schemes, such as e-bikes and electric scooters, around public transport nodes and middle-inner city suburbs either through government provided facilities, or industry/private support or partnerships.

Electric vehicles:

5. Engage with the public to impart practical electric vehicle ownership and use advice to subdue concerns regarding charging, maintenance, and running-cost concerns, and emphasise benefits.
6. Engage with the Federal government on impacts of carbon targets on EV market and potential for incentive strategies to increase EV uptake while maintaining choice and minimising cost burden to all motorists.
7. Evaluate options to address concerns related to upfront purchase costs and consider providing subsidies, rebates, or low-interest loans.
8. Engage with the Federal Government to progress transport infrastructure and operational funding models including Road User Charging proactively for non-fuel based vehicles to retain sustainable provision of high-quality and affordable transport for community members as the fuel excise revenue decreases.
9. Develop and commit funding to an ongoing charging network investment and installation program, including provision of chargers in park 'n' ride facilities to encourage sustainable modal transfers.
10. Engage with public transport providers and freight companies to identify opportunities to transition suitable vehicles/routes to electric or hybrid vehicles.
11. Lead by example and set Government fleet vehicle targets for electric vehicles.

Automated driving technology and connectivity:

12. Use a flexible yet firm approach to regulation and penalties for low level automated vehicles to ensure technology safety and quality is maximised.
13. Engage with the public early and regularly to let community members experience the technology and benefits, and inform them of vehicle abilities, limitations, and how to ride/operate and interact with them legally and safely.
14. Engage with manufacturers and the Federal government to ensure automated vehicles have vehicle-to-vehicle and vehicle-to-infrastructure connectivity capability and commit investment to install and upgrade infrastructure connectivity and network management software from both State and Local governments.
15. Conduct trials on Queensland roads to identify and rectify infrastructure design and maintenance issues.
16. Engage with the Federal government and other States and territories to update road design and maintenance standards to ensure automated vehicles can operate safely and reliably.
17. Review departmental and procured maintenance policies and procedures to create a more efficient maintenance identification and rectification process, including a priority classification for automated vehicle critical operational elements such as line markings and signage.
18. Identify and investigate automated vehicle permitting and trial barriers including registered public transport operator costs for automated public transport trials and permit scaling flexibility, and identify alternative solutions to remove barriers and encourage industry investment and network preparedness.
19. Conduct trials of automated vehicles in various public transport use cases and alter relevant contracts, policies and legislation to ensure the public transport network is 'AV ready' and responsive to technology changes.
20. Evaluate and implement short, medium, and long-term policy settings which over time will encourage passengers to use public transport and shared fleet operational models.
21. Undertake automated freight trials along safe and high-volume freight routes in partnership with industry.

Emerging operational and business models:

22. Trial emerging and hybrid business models in collaboration with industry to identify viable use cases for transport technologies and network effects.
23. Evaluate a range of policy and regulatory options to encourage emerging transport models and businesses, while flexibly managing their overall network impacts and contributing to shared strategic objectives for the transport network.
24. Develop a transport priorities framework for industry to understand government objectives, and apply the framework to flexibly manage permitting, funding, contracts and trials, to encourage transport services and models, using existing and new technologies, which contribute to achieving the strategic transport objectives.

Impacts to Employment:

25. Engage with industry bodies, organisations, small business and employers which will be impacted by these technologies and identify opportunities for businesses to leverage technologies to improve efficiency and competitiveness and identify how employee roles can realign to provide complimentary value in 'soft skill' roles, which may require upskilling.

Further detail regarding each technology and justifications of recommendations, is provided in the body of this submission. RACQ thanks you for the opportunity to provide this submission and contribute to shaping the future Queensland transport network in the face of technological disruption. Should you need to discuss any of the items raised in this letter, you can contact Grace Willems, Transport Planning and Infrastructure Advisor, [redacted]

Yours sincerely

Dr Rebecca Michael

Head of Public Policy RACQ

[redacted]

1. Introduction

The RACQ has developed this submission to identify and evaluate how transport technologies can be integrated into the Queensland transport system to maximise their benefits and mitigate their potential risks with respect to both RACQ's strategic operations and the long-term impacts to the broader transport system. On behalf of RACQ's 1.7 Million members, we advocate to ensure Queensland's transport system maximises safety, affordability, and sustainability.

The discussion of this submission has been limited to a scope of benefits and risks RACQ expects to see from these technologies within the next 30 years. The technologies and topics this submission will cover include:

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- Electric vehicles;
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- Emerging operational and business models; and
- Employment and economic impacts.

This submission proposes 25 recommendations to address critical decisions which will contribute to achieving the maximal benefits of each technology or topic within the context of the broader transport system.

2. Electric Personal Mobility

A range of electric personal mobility devices are emerging and being popularised internationally and in Australia, including e-bikes, electric scooters, motorised unicycles, segways, and skateboards.

These personal forms of transport can contribute positively to the efficiency, sustainability and affordability of the transport network as alternative forms of transport to private car use, and by fulfilling first and last mile transport gaps. A recent survey of 1000 people across the South East Queensland region revealed electric personal mobility devices may increase active transport:

- 32% of respondents agreed they would cycle more if they had an e-bike which reduced the physical effort required.
- 22.5% of respondents indicated they would cycle more if they could hire a normal or e-bike near their key origins and destinations.

Respondents were not asked about other emerging personal mobility devices such as electric scooter share schemes – but these vehicles have similar abilities to reduce the physical effort required and may even be more appealing for users with mobility issues that deter them from using regular or electric bicycles.

However, electric personal mobility devices may also pose safety risks to other vulnerable network users due to their ability to travel at increased speeds compared to traditional active transport walking and cycling and have the potential to become walkway hazards when deployed in dockless schemes. Safety impacts should be managed to attain the benefits of these devices while mitigating safety risks through a mix of planning and design, regulation, and legislative responses.

Recommended government response

1. *Review legislation to provide for the legal operation of electric personal mobility devices that encourages use for first and last mile trips as an alternative to private car use.*
2. *Review planning and design guidelines and retrofit areas to ensure safe interaction and mitigate conflict on shared infrastructure between pedestrian and traditional active transport, and electric mobility device users.*
3. *Undertake public engagement and education about the safe operation of devices and supported use cases.*
4. *Encourage use through provision of shared electric mobility schemes, such as e-bikes and electric scooters, around public transport nodes and middle-inner city suburbs either through government provided facilities, or industry/private support or partnerships.*

3. Electric Vehicles

Electric vehicles (EVs) bring a range of health and environmental benefits – and noting that automated vehicles are predicted to increase vehicle kilometres travelled (VKT) due to increased comfort and mobility, it is important to ensure electric vehicles are supported to reduce additional emissions from increased VKT.

Supporting electric vehicle uptake is complex as there are issues relating to both the public demand for electric vehicles, and infrastructure and vehicle supply.

Demand Considerations

Australia and Queensland must recognise the international industry is moving towards an electric vehicle future. A number of international governments and manufacturers have announced their intention to phase our petrol-powered vehicles and this has seen an increase in the manufacture and uptake of electric and hybrid vehicles. With Australia now fully reliant on vehicle imports for personal use, it's important that we plan for an increase in electric vehicles and provide the necessary infrastructure to support their operation.

Unsurprisingly, EVs are most popular in countries that offer financial incentives. The importance of incentives was evident in Denmark where sales of EVs dropped by 60% in the first quarter of 2017 after the removal of EV subsidies. In Australia the uptake of EVs has been slow due to a range of reasons including a lack of incentives, high relative prices and limited availability of models. A lack of charging infrastructure and range anxiety have also contributed to the low number of EVs sold and operated in Australia. The Federal Government has a lead role in establishing incentives such as tax benefits, subsidies and rebates. Demand may also be driven by national CO_2 abatement targets that will drive manufacturers to meet these targets, through an increased percentage of new car sales as EVs, and ultimately impact the range of vehicles available in the market. The RACQ engages at the Federal level on these issues through the Australian Automobile Association.

RACQ recently conducted stated preference research on electric vehicle attitudes in South East Queensland. The results from approximately 1000 respondents across a demographically weighted sample indicated:

- Electric vehicles are too expensive to buy even if running and maintenance costs are lower (86.2% agreed).
- People generally support EVs for their environmental benefits (81.5% agreed).
- 74% of respondents agreed they would happily use a normal power point at home or work to charge an electric vehicle.
- Battery range was not perceived as a limiting factor with 72.7% of survey respondents indicating current battery technology has enough range to get them to and from the places they travel.
- 68.8% indicated they would buy an electric vehicle is there were discounts, subsidies or rebates available.
- Only 54.9% indicated they would be happy to recharge their electric vehicles for 20-30 minutes every 2-4 hours for long distance trips.
- 44.5% indicated they would consider buying an EV for their next car.

Based on the above, cost was reported as the most prohibitive factor to purchasing an EV, with charging and range anxiety emerging as lower order deterrents (more prevalent for charging times/frequency during long distance trips). Limited model availability and poor visual appeal of budget friendly models may also inhibit EV appeal and uptake, but this was not explored in the survey.

Infrastructure Supply Considerations

RACQ is supporting the Queensland Government's development of electric vehicle charging infrastructure and policies through our representation on the Electric Vehicle Committee. We also receive and respond to public inquiries regarding how RACQ is supporting electric vehicle uptake.

Ensuring the charging network has continuity and consistency will be key for the long-term uptake of EVs. This can be achieved through the provision of an appropriate mix of fast and slow chargers, and ensuring interoperability in charging specifications for both infrastructure and in-vehicle components. For example, Tesla chargers are bespoke and limit interoperability without an adapter, so have a barrier of reduced accessibility to charging for non-Tesla EV owners.

A final factor to consider relating to infrastructure supply more broadly, is the long-term funding for construction, operation and maintenance of the road network as electric vehicles reduce government revenue from the fuel exercise. Infrastructure Australia has recommended the government replace current funding models with Road User Charging (RUC) models sooner rather than later to avoid retrospective policy and charging changes for non-fuel vehicle owners, and to manage future infrastructure funding as the fleet transitions to non-fuel based technologies, and fuel excise consequently declines. The Honourable Mark Baily, Queensland Minister for Transport and Main Roads, has publicly acknowledged the need to proactively change revenue sources for infrastructure funding, and the RACQ calls on the, the Honourable Michael McCormack (Federal Minister for Infrastructure, Transport and Regional Development), to progress the previously announced study on the benefits and impacts of road user charging. Engaging with the public regarding the issues and implementing RUC proactively will be critical to developing a supported and equitable transport funding system.

Recommended government response

5. *Engage with the public to impart practical electric vehicle ownership and use advice to subdue concerns regarding charging, maintenance, and running-cost concerns, and emphasise benefits.*
6. *Engage with the Federal government on impacts of carbon targets on EV market and potential for incentive strategies to increase EV uptake while maintaining choice and minimising cost burden to all motorists.*
7. *Evaluate options to address concerns related to upfront purchase costs and consider providing subsidies, rebates, or low-interest loans.*
8. *Engage with the Federal Government to progress transport infrastructure and operational funding models including Road User Charging proactively for non-fuel based vehicles to retain sustainable provision of high-quality and affordable transport for community members as the fuel excise revenue decreases.*
9. *Develop and commit funding to an ongoing charging network investment and installation program, including provision of chargers in park 'n' ride facilities to encourage sustainable modal transfers.*
10. *Engage with public transport providers and freight companies to identify opportunities to transition suitable vehicles/routes to electric or hybrid vehicles.*
11. *Lead by example and set Government fleet vehicle targets for electric vehicles.*

4. Automated Driving Technology

Automated vehicle technology is developing rapidly and RACQ is supportive of the reforms being delivered by the National Transport Commission to ensure conditionally automated vehicles (AVs) can operate safely and legally on our roads by 2020.

RACQ supports the introduction of automated vehicles with proven abilities to deliver safety and mobility benefits for Queenslanders. However, these vehicles pose several risks to the long-term operation of the transport network if not integrated into a supportive transport system. Automated vehicles should be evaluated and integrated into a system with a focus on achieving maximum safety, network efficiency, and infrastructure sustainability outcomes. This section will give an overview of how these outcomes may be impacted or maximised depending on:

- Public trust in the technology and take-up.
- Infrastructure and urban form requirements for optimal vehicle operation and connectivity.
- Various use models and transport tasks performed.

Public Trust and Uptake of Technology

A fully and highly automated vehicle fleet is expected to bring significant benefits to the transport network and personal mobility. However, during the transition period to highly automated vehicles (levels 4 and 5), the mix of human drivers and low level automated vehicles (levels 2-3) has the potential to negatively impact the network in the form of reduced efficiency and safety outcomes. In order to reach the network benefits of a fully and highly automated fleet, and reduce potential negative outcomes, the transition period must be minimised and managed carefully to retain public trust and continued uptake of the technology.

Recent research conducted by RACQ across South East Queensland (matched demographically) revealed technology trust and cultural attitudes to driving are existing barriers to AV uptake, as currently the public do not favour or have significant trust in automated vehicle technology:

- 76.1% agreed they would monitor a partially automated vehicle (level 2 and 3) while driving and be prepared to take control as legally required even if the vehicle had driven the route safely before.
- 73.9% agreed they enjoy driving a car and would prefer this over riding in an automated vehicle.
- 56.6% liked the idea of safe automated vehicles if they make it easier to travel.
- Only 40.3% of respondents would be comfortable riding in an automated vehicle.
- Just 37.5% of respondents indicated they trust automated vehicles to operate safely.
- Only 36.4% of respondents would consider buying an automated vehicle.
- And only 38.9% would be willing to pay a higher price for a partially or fully automated vehicle compared to a lower price for a non-automated vehicle.

Recommended government response

RACQ recommends these trust and willingness to use/purchase barriers can be reduced by:

12. *Using a flexible yet firm approach to regulation and penalties for low level automated vehicles to ensure technology safety and quality is maximised.*
13. *Engaging with the public early and regularly to let community members experience the technology and benefits, and inform them of vehicle abilities, limitations, and how to ride/operate and interact with them legally and safely.*

Infrastructure and urban form requirements for optimal vehicle operation and connectivity

The design, construction, and maintenance of the infrastructure and urban form these vehicles operate within will also strongly influence the safe and desired operation of these vehicles. The RACQ has identified three primary challenge types that could create negative operational outcomes, including:

1. Lack of vehicle-to-vehicle and vehicle-to-infrastructure connectivity – automated vehicles interacting with other vehicles and infrastructure using only automated vehicle technology (including LiDar, sensors, cameras, machine learning and artificial intelligence) will still be somewhat reactive in nature to sudden movements or changes to road conditions and will likely be programmed to operate in a risk averse manner when unable to interpret the situation. This, at a minimum, could create operational inefficiencies like large headways. More concerning is trial evidence that is showing automated systems may either not react to road hazards (such as stopped cars ahead) or react in an unpredictable or inappropriate way. In order to combat this and improve operational outcomes, vehicles require interoperable connectivity, and infrastructure and traffic management systems must be installed or retrofitted with connectivity hardware and fleet/network management software.

2. Road design and maintenance issues – testing and incidents have occurred both internationally and Australia which have produced insights into how automated vehicles operate on roads which currently meet relatively high safety standards, but create poor operational outcomes in automated vehicles. For example, Transurban's trials in Victoria found the colour and proximity of line markings could 'confuse' the automated driving system, or cause vehicles to behave in an undesired way, such as leaving the motorway due to following off-ramp edge lines when they were supposed to remain on the motorway. A similar programming/sensing issue caused a fatal Tesla incident in the USA when an edge line was worn away and the vehicle followed a nearby off-ramp line and collided with a concrete lane divider. The Victorian trials also found issues with low level automated vehicles' inability to read signs of varying type and location, or reading and reacting to the wrong signs. European picture based, rather than text based, signs are reportedly more easily read.

3. Urban form/ interaction with external environment – the Victorian trials similarly found automated vehicles were confused or disrupted by an engineering/art installation designed to reduce noise pollution in a tunnel. Similarly, the design of roads where vehicles interact with humans, either pedestrians or active transport users, will likely require consideration and retrofitting so that interactions ensure both safety and efficiency. For example, a current trend in planning is to design vehicle/pedestrian shared zones. If an automated vehicle is programmed to always stop for humans entering in front, these vehicles could be taken advantage of by pedestrians and will constantly stop and create congestion/efficiency issues.

Recommended government response

14. *Engage with manufacturers and the Federal government to ensure automated vehicles have vehicle-to-vehicle and vehicle-to-infrastructure connectivity capability and commit investment to install and upgrade infrastructure connectivity and network management software from both State and Local governments.*
15. *Conduct trials on Queensland roads to identify and rectify infrastructure design and maintenance issues.*
16. *Engage with the Federal government and other States and territories to update road signage, design and maintenance standards to ensure automated vehicles can operate safely and reliably.*
17. *Review departmental and procured maintenance policies and procedures to create a more efficient maintenance identification and rectification process, including a priority classification for automated vehicle critical operational elements such as line markings and signage.*

Use models and transport tasks performed

Automated vehicles can be used in the transport network to complete a range of tasks, and the use models will produce varying positive and negative impacts to network operation, urban form, personal mobility, government costs, and the wider economy. Four main models which could produce significantly different outcomes include:

- Private/personal ownership;
- Fleet and vehicle sharing;
- Public transport; and
- Freight.

Private/Personal Ownership

Modelling has shown that in Brisbane, if the private ownership/business-as-usual approach is adopted due to the increased comfort, convenience, accessibility and (eventually) affordability of travel in an automated vehicle, there are expected to be several significant negative outcomes for the region including: significantly worsened congestion; increased VKT and emissions if not electric; urban sprawl; and high cost of personal mobility with low asset utilisation.

Fleet

If automated vehicles are primarily used in a shared fleet, demand responsive capacity in place of private ownership, there will likely be some negative outcomes for industry including RACQ, however, there will be significant broader network benefits. This use case will potentially improve/stabilise congestion levels, improve mobility and affordability of travel, and may reduce infrastructure costs in the long term compared to private ownership. However, significant private and government intervention may be required to provide adequate fleet services and operational infrastructure, and to implement policy settings which would move travellers to this model.

Public Transport

The public transport model has the potential to include all the benefits of the fleet model but may provide even greater improvements to the affordability of travel, and the cost efficiency of the broader public transport network. This model could have automated vehicles perform a variety of public transport tasks with a range of vehicles to suit the need; including small vehicles and shuttles completing first and last mile trips from residential and employment areas to mass transit stops and stations, to large automated vehicles carrying mass volumes of people along major corridors, to providing a cost-effective demand responsive service in regional/low density areas where traditional public transport services are inadequate and costly.

The RACQ recognises this use case would require a significant shift in industry operators' assets and business models and changes to current public transport contracts, legislation and policies. However, if automated vehicles are integrated into the public transport network, then significant improvements may be seen to congestion, personal mobility, asset cost/utilisation ratios, and broader economic enablement. This model would similarly require a change in policy settings to shift people from private vehicle use to public transport. However, if public transport and supporting policies are late to integrate automated vehicles, then private use may create a societal ownership trend that is difficult to reverse, and negative outcomes to the broader transport network, including reduced public transport patronage.

Through consultation with stakeholders regarding automated vehicle trials, a barrier has been identified regarding the legislative requirement to have a registered public transport operator deliver the trial, but quotes received by private operators are prohibitively high. There are also additional administrative burdens to both industry and the government for scaling successful trials – organisations must reapply for additional permits to expand trials that have already met the permitting trial and safety guidelines. These barriers need to be addressed in order to encourage private investment in trialling automated public transport applications.

Freight

The automated freight use model will have relatively smaller network impacts than previously discussed models, but automated freight may have the potential to drive significant long-term network and economic benefits including improved safety, efficiency, and lower costs of transporting goods.

Summary of use models and outcomes

It is likely that a mix of all the above models will appear on the network concurrently as the technology continues to develop and is trialled under various conditions. The right policy and regulatory settings introduced at critical technology and market points will aim to adjust the current modal share to create a balance of use models which maximises network efficiency, personal mobility, and broader social and economic outcomes. This would ideally be a high proportion of automated public transport and freight use, supported by moderate to low fleet vehicle use in lower density areas, and only limited use of private/personal automated vehicles. Setting up the public transport system early so it is ready to integrate these vehicles quickly and effectively will capture the discussed benefits when the technology is ready and cost-effective and will prevent future delays which would increase private vehicle use and create broad negative outcomes for the transport network and urban form.

Ensuring the automated technology trial permitting system is flexible and enables proactive incremental scaling of successful trials will be critical to achieving an AV-ready transport network in line with market deployment. Once trials have met required safety criteria, having an incremental scaling of the permitting system will enable operators to continue testing without delays and administrative burden caused by repeated reapplication to the regulator for re-permitting for similar or incrementally scaled trials.

Recommended government response

18. *Identify and investigate automated vehicle permitting and trial barriers including registered public transport operator costs for automated public transport trials and permit scaling flexibility, and identify alternative solutions to remove barriers and encourage industry investment and network preparedness.*
19. *Conduct trials of automated vehicles in various public transport use cases and alter relevant contracts, policies and legislation to ensure the public transport network is 'AV ready' and responsive to technology changes.*
20. *Evaluate and implement short, medium, and long-term policy settings which over time will encourage passengers to use public transport and shared fleet operational models.*
21. *Undertake automated freight trials along safe and high-volume freight routes in partnership with industry.*

5. Technology Applications and Emerging Transport Operational and Business Models

The transport technologies discussed in previous sections will allow for multiple operational models to become more effective and feasible for both government and private industry to trial and implement. Known models which can incorporate personal mobility devices, electric vehicles, and connected automated vehicles (CAVs) include:

- Ridesharing.
- Demand Responsive Transport (DRT).
- Mobility as a Service (MaaS).
- Vehicle/asset sharing or subscription schemes.

There may be additional or hybrid models which will also be enabled through these technologies and broader changes to the consumer technology and communications markets. These models can play a role in reaching strategic transport goals, but may also hinder them or create inefficiencies if not strategically managed. An example of this is international

and local evidence of rideshare vehicles, such as Uber, exacerbating congestion and making illegal and unsafe pick-ups and drop-offs.

RACQ recommends an approach which encourages government-industry collaboration and identifies options to flexibly manage the impacts of these business models in a constructive way. For example, a transport priority outcomes framework which identifies the desired strategic transport network outcomes could be used to engage with industry about delivering shared benefits and used to prioritise which transport operators/service providers are provided with funding, permits, contracts, and approvals; those organisations with business models which better align to delivering the strategic transport priorities would be given preference over non-aligning models. This would allow industry and government to contribute to achieving a common goal and allow flexibility and market competition to occur transparently.

Recommended government response

22. *Trial emerging and hybrid business models in collaboration with industry to identify viable use cases for transport technologies and network effects.*
23. *Evaluate a range of policy and regulatory options to encourage emerging transport models and businesses, while flexibly managing their overall network impacts and contributing to shared strategic objectives for the transport network.*
24. *Develop a transport priorities framework for industry to understand government objectives, and apply the framework to flexibly manage permitting, funding, contracts and trials, to encourage transport services and models, using existing and new technologies, which contribute to achieving the strategic transport objectives.*

6. Impacts to Employment and Broader Economy

RACQ recognises these transport technologies will have a significant impact to the broader economy and employment, but it is unknown whether the net impact of job loss versus new role creation will be negative or positive.

Broadly in the economy, the RACQ notes there is a high potential for:

- Reduced operating costs of electric vehicles.
- Reduced maintenance costs for electric vehicles and lower employment demand in the repairs industry.
- Changes to insurance costs, including unknown cost impacts for low/mid-level automated vehicles depending on their safe operation, and highly automated vehicles reducing costs due to lower risk of crashes.
- Negative impacts to government revenue due to:
  - Loss of fuel excise (EVs).
  - Reduced maintenance lowering the purchasing of replacement parts and labour which will in turn reduce GST collected.
  - Changes to driver and ownership patterns reducing licensing fees, stamp duty, and registration if fewer people own and drive their own vehicles (CAVs).
  - Reduced revenue from vehicle infringements as automated vehicle technology matures and changes to penalty collection as responsibility shifts to the registered automated driving system operator (in place of a driver).
- Potentially positive impacts to revenue if:
  - Governments enable connected vehicles and infrastructure which can improve network safety and efficiency and potentially reduce or delay the need to build new infrastructure capacity.
  - Government incorporates AVs into the transport network to improve the quality and efficiency of the public transport network, and creates modal shift to increase public transport share. This may impact driver roles which can be re-directed to a complimentary role such as passenger information/service.

The RACQ also expects significant impacts to its current business model and employee role duties across the Banking, Insurance, and Assistance Pillars, including:

- Potential for reduced demand for roadside assistance due to electric and automated vehicles being expected to have fewer mechanical issues.
- Possible additional education and training requirements for servicing and assistance staff to perform repairs and maintenance on electric and automated vehicles if/when required.

- Potentially lower demand for traffic response units (currently operated by RACQ) and insurance claims due to fewer expected crashes/breakdowns in the long term – but potentially higher demand when there is a low level automated/mixed automated and human driver fleet.
- Impacts to RACQ insurance products, claims, and staff training as liability for automated vehicles change for personal and business insurance requirements.
- Potential reduction in membership base and revenue if changing ownership trends and vehicle access models reduce demand for assistance, insurance, and loan products.

More broadly in the transport industry over the coming 10-30 years, these vehicles are likely to affect roles related to driving, deliveries, and mechanical repairs. This will be across multiple sectors including public transport, freight and logistics, bookable transport and rideshare, and automotive/vehicle manufacturing and repairs. Upskilling workers to a new role within these industries or another role may be required.

Roles in the infrastructure engineering, design, and construction industry will also require significant upskilling to ensure roads enable optimal automated vehicle functionality. Construction and infrastructure maintenance roles may have short-term growth due to work required for making the network suitable for AVs, but long-term decline as less infrastructure may be needed under certain use models and may require less maintenance as AV programming can minimise wear and tear caused by vehicles, especially if fleet and public transport models result in a reduction in vehicles.

Recommended government response

25. Engage with industry bodies, organisations, small business and employers which will be impacted by these technologies and identify opportunities for businesses to leverage technologies to improve efficiency and competitiveness and identify how employee roles can realign to provide complimentary value in 'soft skill' roles, which may require upskilling.

7. Conclusion

This submission has outlined the RACQ's view of how these technologies will impact the Queensland transport network's safety, affordability, and sustainability, in addition to the potential related impacts to operational models, the economy, and employment. Recommendations have been proposed to address potential risks created by these technologies, or barriers to realising their benefits. On behalf of RACQ's 1.7 Million members, we thank you for the opportunity to make a submission, and look forward to reviewing the outcome of this inquiry.