REPORT ON PROCEEDINGS BEFORE

LEGISLATIVE ASSEMBLY COMMITTEE ON TRANSPORT AND INFRASTRUCTURE

TRANSPORT TECHNOLOGY SECTOR

At Jubilee Room, Parliament House, Sydney on Friday, 15 October 2021

The Committee met at 9:30 am

PRESENT

Ms Robyn Preston (Chair)

Ms Jo Haylen
Dr Marjorie O'Neill
Ms Eleni Petinos
Mr Gurmesh Singh

The CHAIR: Good morning everyone, welcome to the public hearing of the Legislative Assembly Committee on Transport and Infrastructure inquiry into the transport technology sector. Thank you very much for joining me today. The hearing is being broadcast to the public via the Parliament's website. All witnesses will be attending via videoconference. In accordance with the COVID-safe guidelines of the Parliament, all members and staff present at Parliament House will be wearing masks and adhering to physical distancing rules. To assist Hansard in the preparation of the transcript, I ask that all members and witnesses identify themselves when they begin speaking. Please state your name before you speak. We have a recording and the transcripts will be made from that recording. It makes it easier if you identify yourself first. I thank everyone for appearing before the Committee today. It will be a very interesting day and I think we will learn a lot from this. We are keen to have you share your knowledge with us.

DAVID LE BRETON, Head of New Mobility, Transdev Australia, Transdev Australasia, before the Committee via videoconference, sworn and examined

RITA EXCELL, Executive Director, Australia New Zealand Driverless Vehicle Initiative, before the Committee via videoconference, sworn and examined

IAN CHRISTENSEN, iMOVE Australia Ltd, before the Committee via videoconference, affirmed and examined

MATT MCINNES, Managing Director, Lynxx, before the Committee via videoconference, affirmed and examined

The CHAIR: Before we proceed, do any of you have any questions on the process that we are following today? You are all sworn in so it is official now; you are part of our procedures. A very big welcome to you. We have your submissions. Thank you very much for lodging those. I will call on the witnesses if you have anything additional that you would like to mention briefly. We are mindful that there are four people in the witness group today to hear from, but would anyone like to make a further contribution? No, okay. I might then proceed directly to questions from members on the Committee. I will go from my left and ask Dr O'Neill to begin.

Dr MARJORIE O'NEILL: Yes. I want to say thank you very much for making yourselves available today and coming to the hearing. The submissions have highlighted the importance of data for improving the public transport sector. There is two parts to the question. First, how do you think data should be collected and shared? The other part is how do we address concerns around an individual's privacy and commercial organisations profiting from the data, and how do we address that?

The CHAIR: That was for the Lynxx submission?

Dr MARJORIE O'NEILL: Yes.

Mr MCINNES: Certainly I am happy to answer that in two parts. We advocate an open data environment. There should be equal give and take in an open ecosystem. The collection and processing of data we would advocate should be undertaken ideally, in the case of transport infrastructure, by an independent central body—much like Transport for NSW does with a lot of data currently. That open ecosystem we would also advocate should be equal access, equal contribution: on a quid pro quo basis. Meaning that if you want to be part of the ecosystem you submit data but you also have the right to receive it in return. What is pretty important though and we would certainly advocate in the second part of your question, we would say that privacy and protection of data needs to be paramount. We would actually suggest that there is an awful lot done to ensure that there cannot be the exploitation of individuals or the commercialisation of individual data where it is not in the best interests of the wider ecosystem.

With that I would recommend actually the strength of privacy laws and the strength of data collection rules that are put in place to ensure the mechanisms involved in data exchange and transfer are transparent, open and credible. Individuals should be in control of their own data and if they do not want to contribute, then they should not be obliged to. I would make the observation that there are plenty of places around the world where there are very strong data protection regimes in place already. If you take the European data protection regulations, the General Data Protection Regulation [GDPR], they already have a very strong focus on: One, protection of the individual data; and, two, consequences for failing to follow that. We would want even as a commercial company we would want to use the highest possible standards. We note that there are not very many consequences for failing to protect data currently—in the Australian context—and we would welcome the enhancement of that protection.

The CHAIR: Any further questions on that, Dr O'Neill? Ms Haylen, do you have a question?

Ms JO HAYLEN: Thank you, Chair. My question is in relation to the Transdev submission and in particular around the first mile and last mile services. I think it is a real challenge, particularly in Sydney, to encourage people onto public transport. It is often that connection that is the impediment. I am interested in your experiences of the trials of automated vehicle on-demand services. What are the existing barriers to expanding those types of services and how can we learn from overseas experiences to roll those out effectively, not just in our city but also in our regions?

Mr LE BRETON: Thank you for the question. First-mile and last-mile solution and autonomous vehicles are really a part of the solution to improve those connections. We believe they are actually part of the network. They are complementary to the network and they will facilitate the ease of access to public transport. That is why we really invest into trials, into pilots, to demonstrate this. Now we have reached—after the Transport for NSW pilot program—five pilots going in Australasia. We have 26 pilots going around the world and we also started lots of on-demand solutions in rural and regional areas to bring those people who are not having public

transport services. The solutions are really there to help accessibility and to help inclusion of people who could not before access public transport.

There is a second part to it. Because they are flexible and really meeting those gaps they can also replace and be more efficient than some standard routes, which would not be frequent enough or meet the community's specific needs. We can, with that flexibility, design services that are really responding to the needs of the population. In terms of, I guess, learnings: We have tried many different models and for that we have discovered that bespoke and very specific technology was required. That is why Transdev invested in the local on-demand platform called Liftango. They are present in Australasia and they know the market and they have deployed services prior to our investment in them. Since we have put these services in place we have also noted that we are more efficient. It is very important to make sure that those services are shared. They are not for single passengers, they are there to contribute to the shared mobility. It is very important.

We need to build trust in public transport, especially after COVID. We know that people are not back yet as they were before. We realised that on-demand transport first mile/last mile, is a solution that gives confidence to people because we can have a direct personalised experience. We can book and we can know how many people are in the service. As such, they are COVID-ready. And we can trace people as well, respecting the privacy rule—but we can do all this in a very flexible way, and maybe more than we can in our normal service. As such most on-demand services have really come back faster than normal services around the world, because of that trust factor. In terms of autonomous vehicles I guess the barriers as yet are still the technology. We have done many trials and the speed that we can use has probably reached 18 to 20 kilometres per hour. So you can use those in specific areas for very short routes. This is a constraint for development. That is why we need to invest more and do more trials and learn more.

We also learned that people are very positive and once they have gone on board they actually appreciate that it is an electrical vehicle, it is sustainable and therefore it improves the sustainability of our city. That is another element that is key for the future of transport. With, I think, all these advantages and benefits we can only see this solution progressing and complementing the public transport system. At the end of the day these shared mobility solutions are meant to remove the congestion from our cities. When you look at Japan and Singapore, they are cities that are a lot more busy but there is not as such so much traffic than we have, because people understand that they can do without cars. Improving and reducing congestion and trying to remit and probably remove single passenger cars on the road, that is really the aim of those pilots and solutions.

The CHAIR: That is an interesting comment. Do you think that we will ever get to a stage where we will remove single passenger cars off the road?

Mr LE BRETON: Not completely, I do not think so. But in cities we can see that happening in London and in Paris, where the centre of town is banned for single cars and you only see shared mobility. You see active mobility, which is another important factor and a soft mode that we advocate for because it is taking less room, it is good for your health and therefore it contributes to livability and the sustainable city that we want to promote.

The CHAIR: Mr Singh, do you have a question?

Mr GURMESH SINGH: I do. We are going to keep Mr Le Breton busy today. Real-time journey management requires significant connections between different transport systems and platforms. Do you consider the Opal Connect mass platform as outlined in the Future Transport Technology Roadmap, will meet this need? Do you have suggestions about how this can be expanded or improved?

Mr LE BRETON: Yes. This is, I must say, a really good step. I must recognise that Sydney is really at the forefront in that field. That is good and we need to keep going. We are soon catching up on the electrification, and that is really important for Australia. That particular Opal Connect system is great because already it is a step towards Mobility as a Service [MaaS]. Mobility as a Service sometimes gets confused with on demand services. On demand and first mile/last mile are a brick to connect to the public transport system and to MaaS [inaudible]. Mobility as a Service is the integration of various transport service, public or private but shared. And active—that is what I was saying before—into a single mobility accessible on demand if you have a smart phone or an application, including a unique payment channel. That is very ambitious and we will not get there—for a big city like Sydney with many modes—in one day.

To get there and to reach that multi-modal journey planner with real-time information, with booking, with single payment and access validation even through your app, you need to work on interchange multi-modal connection. The initiative such as the Uber online interconnecting to public transport offering an incentive, which is a discount through the Opal Connect system, is great. We can only say that we need to promote this. Operators, as well as that information, need to facilitate those connections. That is what we are working on. If you want people to think of not using their car to go and reach either the public transport or the first available for the city,

we need to facilitate that seamless journey and that seamless interconnection. That is really important. There are plenty of implications. Really the technology that we are trying to develop here with our partners Lynxx—we work with them—with Liftango and iMOVE, is to increase and improve that interconnection interchange.

The CHAIR: I have a question for Rita Excell. Ms Excell, just in relation to the work done and the opportunities that may be available in your space with the upcoming airport and the aerotropolis area there, and how you see provision of driverless vehicles interacting in that space?

Ms EXCELL: Absolutely those sorts of opportunities for such transformational infrastructure like the airport complex, is something that really I think we have heard previous Ministers talk about. How they want to have very high levels of autonomy introduced to make it the most efficient and the most reliable operating airport and also to improve the connectivity between some of the centres. Particularly with Liverpool council and other councils around making that connection. So that it is not only the airport but we are actually connecting existing cities so that the people living there can actually get good employment and opportunities, even tourism opportunities. There is a huge opportunity to put this technology into that development. There is near term existing technology and automated dollies, particularly airside. It would be very strange to believe but there is a lot of automation happening in the airside movement, even with buses and machinery. That is a very precise location of how things move, very delicate and sensitive equipment. We do not want to be crashing into planes, and a lot of conflicting manoeuvres.

All of that technology is available and is already being applied in trials and deployments globally. That is something that I think is really critical. Just the connection to the airport: There is a lot of thinking around what that might look like, what that public transit corridor might look like and whether you need a driver on that. I think the master planning around that is already looking at what technology they can use now and also what technology they can deploy in five to 10 years. From an Australia New Zealand Driverless Vehicle Initiative [ADVI] perspective, we have our major conference coming up next week. It is supported by the Government of New South Wales. We will be hearing from Australian and international experts that will be talking about technology that is being widely deployed internationally and looking at the pathway that they have to introduce this technology into Australia, and partnering with Australian organisations. The next five to 10 years is a really exciting and transformational time. In the light of that precinct we really need to plan so that we can have this technology able to be installed when it is available.

The CHAIR: Based on what you are saying with the timing of your interaction with that aerotropolis, planning seems to be quite well-placed?

Ms EXCELL: Yes, I think that New South Wales is undertaking very significant investment in a whole range of infrastructure. That particular precinct, there is technology that is ready and available to be deployed there. I mentioned some of it. The longer term planning, and I am only talking the five- to 10-year planning scenario of developing that aerotropolis and how vehicles and people will move. You mentioned Mobility as a Service. I think getting that Mobility as a Service platform to people that are going to be working and operating and using that airport will be a really great use case and an opportunity to engage with those organisations and industries that will be working there.

The CHAIR: Committee members, are there any other questions that you would like to ask?

Dr MARJORIE O'NEILL: Yes. I would just like to ask a follow-up question to Ms Haylen's question to David, specifically around the trials that have been done around the on-demand buses. A couple of the trials that have been done there has been some criticism around the lack of take-up of it by the people. Specifically around that, how do you see that should be addressed?

Mr LE BRETON: Yes. There have been plenty of trials and some have been more successful than others. The ones that are successful—not only in terms of patronage but needs that they are meeting in the community—can and are being integrated and generally they are integrated into the tendering phase of a specific commercial agreement that is put in place later. These are a fantastic opportunity to learn about how people travel. We collect that data when we do those trials because they are driven by mobile apps. We can see and follow the movement of people and we can anticipate and do direct marketing with these people. And we can with that learn a lot about their travel patterns. The other thing is there is as you said the very important I guess incentive to be made, and marketing communication are very important. We are playing with people's behaviour. It is very hard to change habits, we know that: unless there is a pandemic and then we have to, and we do it a lot faster.

Public transport is there and you are not forced to take it. You have got plenty of other solutions; you have got your cars, as I said before. For people for example in the Sutherland Shire where we ran a pilot of Transdev Link, we were enabling the mobility of elderly people. They have difficulty to go to their medical centre because off peak generally the bus routes are not very frequent, and potentially are not exactly picking them up

from a close distance to their home. They cannot really walk. So on-demand services meet those mobility demands, which are a bit different than the norm. That is why we really believe we need to keep investing in those for the time being. Because of the flexibility of the service we had added them to be sustainable and to be as efficient as existing public transport solutions. So, they are generally small but if you integrate them into the big picture you bring new people to the public transport service and that is really what MaaS first mile/last mile is looking at doing.

Another interesting pilot that was launched only a year ago—and Matt McInnes here was involved—was the ferry on-demand service. There was some smaller wharves that the big ferries could not reach and with the smaller catamaran and on-demand service we could actually connect the fish market, Blackwattle Bay wharf, to Barangaroo. We created a new pattern that we were not exactly sure at the beginning what would be the exact need of people. Then we realised, we learned from that and we found a really important route that was missing. Those people would have had to take a car to go around, that was the only solution. We reached something like 15,000 passengers in only six months. That was a good uptake. So sometimes, yes, you have to play and help people to change behaviour. Sometimes they really appreciate and want to take this service as fast as possible, to meet a destination that was not available in the past. I hope that answers some of your question. Obviously there are plenty of models that can meet those needs, and we have worked with our partners to find those.

The CHAIR: Ms Haylen, do you have a question?

Ms JO HAYLEN: Thank you, Chair. With your permission, to any witness who is happy to contribute—I appreciate with technology that is difficult. I am interested to hear from all of our witnesses today. I think the ultimate dream here of course with technology is that we have a fully integrated public transport and private system whereby we can access it just from our iPhones, and that everyone has access to that in equal capacity. That is a very big dream. There are lots of impediments to that. I guess one of those things, as a legislator and someone who dreams to be in charge of Treasury, is how much money one would have to publicly invest to see that realised. I guess I am interested in other jurisdictions—overseas examples—and the balance between private and government investment to see those platforms created and realised. I am interested in the UK and the opportunities for the private sector to take commissions off tickets. Obviously in New South Wales we have a public transport system, the Opal system, and there would be obvious concern around that. I am interested in how you think we can motivate the private sector to engage to create these kinds of platforms that would be ultimately accessible to everybody. Does it require there to be a facility for service providers or sellers as part of the platform to take a commission, or clip of the ticket?

The CHAIR: Witnesses, if you could raise your hand if you would like to respond.

Ms JO HAYLEN: Sorry, Chair, to complicate it like that.

The CHAIR: Mr McInnes, I will ask you first.

Mr MCINNES: I guess the declared interest in this space is that this is exactly what we do around the world. Our sister company Tranzer is a MaaS app platform and we take a risk-sharing model. We would go out and build a connection and build an integration but in return we would typically take a clip-the-ticket model of a small number of seats per transaction as we run things through. We went through this process also as part of Transport for NSW MaaS innovation pilot, which we were part of. We got the first rollout of a MaaS pilot in New South Wales on that basis. The conversation really came around in all of these examples. You are exactly right in terms of the context. Because on one hand the argument is why would we give away public money for providing services that are already provided, and that is a valid point. The real challenge for us in practice was to say, well how do we make the pie bigger?

Let me give you a very practical example. You have a tourist arriving at the airport in Sydney wanting to go to the city. Very typically—we looked at this in quite a lot of detail—option one is I get a rideshare or a taxi because it is easy, it is safe, its really well known, just to say where I want to go. They go to the taxi rank or they go to the rideshare rank and they pick up a car and go that way. Option two is a MaaS platform could allow them to pre-understand which way they want to go and how they want to do it. They choose their mode of choice: choose whether they need extra time between stations; to find that they do not want to take a bus; they do not want to take a train or a light rail. That sort of interface would be very simple to undertake. Then that would enable someone to take public transport for part of their journey rather than taking a taxi.

In many cases we are not actually talking about taking money away from people who are just travelling on the train, and they do it every day. We are actually talking about enabling more use of the public transport infrastructure, more use of the ecosystem. If we can do that it should be a win-win for everyone. We are happy to back ourselves to say we will have a much lower commission on the traditional journeys, that is people travelling to and from and do it every day, and we would have a greater risk share on the piece that would involve providing

new journeys to public transport networks. Our response to this one is that if we have the right mechanisms and there are regulatory constructs, which would work to ensure that we were incentivised to grow the pie not just spread what already exists.

Remembering of course the monetisation challenge here is that these sorts of platforms, these sorts of infrastructures, are not for free. It costs hundreds of thousands of dollars to set up and run one of these platforms. We ourselves have invested millions and millions of dollars into these sorts of tools. The ability to commercialise is quite important. I do not advocate that we should have all the money back. We are very happy that we are taking risk and reward. The private sector should take commercial risk. We should compete on the basis of customer experience. We should compete on the basis of quality of interface. We are very happy to do that. The challenge we have is that if there is not access on a level playing field basis to ticketing and the MaaS concept then the danger is that you are left with it. The State has to fund it and then develop it and probably deploy it itself. That, I suspect, will lead to slower times and less speed of innovation in general.

The CHAIR: Ms Excell, please go ahead?

Ms EXCELL: I think to the point of Matt's comment there. The pie is going to grow and it is going to grow exponentially. There is a lot of companies looking at micromobility, some of these short public transit trips. We are not talking about the existing pie. We are talking about when the pie does grow, when the choices we are going to make and others are going to make around using different mobility choices to get around—that it is the role of government and the regulators to ensure that the system and infrastructure that you have invested in, we have invested in as the public, does not become obsolete. The quality of living around having MaaS—a lot of companies providing services to their customers and competing with each other is creating undesirable outcomes into the way that we live as a society. I think there is a huge role for governments around ensuring that the regulatory framework is integrated into the existing infrastructure services, mass transit. I think you are more privy to this than I.

You invest a significant amount in public transport for public services: Some of those are over utilised and some of them are underutilised, notwithstanding COVID. There is an existing understanding of are you investing, what do you do with the existing investment and how can you get more out of the investment that you are making? To the point around I think equity. It is really important and a social conscience and social service that governments have to make to provide accessible transport to everybody, but I think partnering—and the New South Wales Government has demonstrated, and some of the presenters here today are examples of that collaborative approach with the Government of New South Wales with industry. I think we need to leverage that. But we really need to understand how we integrate it so that we do not get unintended negative consequences of the market growing in an uncontrolled way. That is what I would say around the question of investment. It is not just about clipping a ticket, because government can clip a ticket on private operator services as well.

It is a quid pro quo if we get the right collaborative partnering approach. We allow those on the call with me today who have the innovation, and who understand and can be more adaptable to the routes that they provide. We have had an example today of being agile and being able to change a route for their customers. Whereas government, you really have a committed route and you need to make sure that one person that might be catching the train or bus at a particular time has a reliable service. It is a different driver. That is what I would say, it is not about additional investment, it is not about losing or sharing existing income, it is about understanding how when this sector grows—and it will grow—how we actually integrate it so we do not get any redundant services.

The CHAIR: Thank you. Would any other witnesses like to contribute with a response?

Mr LE BRETON: Can you hear me?

The CHAIR: Yes.

Mr LE BRETON: I think Rita is right, partnership and collaboration is key. We have seen a lot of MaaS projects develop in Europe through consultation, and they are generally long consultations. We can say that the private sector, like Transdev, is already investing in that technology. We are invested in Tranzer, for example. We have invested in MaaS global and we are investing in Australia in Liftango. We will keep investing to try those new solutions. I guess it takes years, as Matt said, to develop through trial and error and to find the model. You will find that there is not one app that is going to fix the city's problem but it is people and it is the governments. That is why we recommend that MaaS should remain really a tool in the hands of public transport authorities to organise and pilot their local sustainable mobility policy.

We are touching here, like Rita was saying, the livability of our cities. We do not want a new private provider to create new routes in front of schools or hospitals, that will become a congestion. We want to control that with a big framework. That is why the Government has to keep controlling that. We are key to assist, to advise. We developed a MaaS in a small—not that small—city in France, in Saint-Etienne, for the euro cup. It

was similar to the example that Matt gave. We knew that there were going to be plenty of people arriving at the airport and they did not know how to go to Saint-Etienne, where the stadium was in 2016. The mayor asked Transdev to create a journey planner to start with. People used it so much to decide whether they were going to use the tram, bus, taxi or even a bike, that the mayor said, "Let us do more than that. Let us make this a MaaS attempt and make sure we can have real-time information payment facilities." We implemented the Moovizy platform. Really bespoke, and this kind of project takes one to two years to be fully implemented and trialled. And then as we said before, incentivising the uptake and making sure to add that to the solution.

Before we reach that level we need to qualify all those mobility providers, all the new ones, to make sure that they can meet the common good of the community: They can have a good after sales service, they are able to respond to the customers if there is a problem in a very efficient way, otherwise it will be a failure. These are the challenges of MaaS. It is very exciting. Amazon created and facilitated purchases online and transport is becoming a commodity as well. To go back to the commercial aspect. It is difficult to decide and to agree and contractualise between all the partners but they know that at the end of the day if it is the platform that is mainly used they will get more customers, and that is really the incentive. That is why it should not be more expensive, it should be cheaper. The last point is you will be able to aggregate other services: maybe your entry fee to the swimming pool or your ticket to the local cinema. All this could become part of MaaS. There is really a big future for MaaS because it could become something that is integrated into everybody's iPhone and everybody's life, I think.

The CHAIR: Can I invite Mr Christensen to contribute as well?

Mr CHRISTENSEN: Our role in this is largely to conduct research. When we take a step back, in addition to endorsing the comments of my fellow panellists, I would recommend that we keep in sight the big picture that we are trying to achieve here. It is to nudge or to change community behaviour to participate more actively in shared transport. Research by us and many other people has shown that pricing signals have quite an effect on community behaviour. To encourage the use of shared mobility is probably going to require some form of price discount, probably going in the opposite direction from where you would want to go. However, the possibility exists to put a price premium on single occupancy vehicle travel and in that way there may be a revenue opportunity that is available to the Government that would offset the discount that they might have to offer to achieve the behaviour change, and the greater utilisation of their heavily subsidised public transport.

To follow David's comment, the opportunity will come with MaaS. We think first of MaaS as just being a variety of transport options. But of course once that is established MaaS is actually a commercial platform that could attract advertising or promotion or other adjacent activities to the actual transport task. Those adjacent activities could pay for their participation on the MaaS platform and in that way provide the revenue that is going to be needed to provide the discount to achieve a behaviour change.

The CHAIR: Are there any other contributions to that question?

Mr MCINNES: I think it is a very good point. Just to add to what Ian said: If done properly in terms of a synchronised pricing/ticketing platform mechanism, it is the missing link in terms of things like demand management around peak services and off-peak services. If prices were not fixed but they were set and distributed by say Transport for NSW dynamically through an app platform or an ecosystem of MaaS, they would have a lot of control over things like this train at the peak of the peak is too busy. Rather than investing in a new train service let us subsidise people to move to bus, rideshare, micromobility and many other things. It is a really, really powerful policy lever to be able to pull dynamically. It is the thing that is missing. The missing link in all of this is exactly that point. A MaaS ecosystem would deliver exactly that point.

I would say that the only other caution is that when you start getting into pricing incentives and movements, then the role still needs to exist in a regulatory function for a government model. Because already we have been approached by parties in our app who say, "Could you put us as the favourite mode of choice and we will give you some extra money to do it". We take a very agnostic approach. We are not interested in playing that game. But it would be very easy for the wrong incentives to sneak in. The role is still essential for a central player, a government body to play that regulatory function. We would argue that they do not need to be a provider of the actual platform. They can set the rule, set access, create the ecosystem and then they have all the policy levers required, without needing to actually build apps themselves.

The CHAIR: And let the free market take hold from there?

Mr MCINNES: A very constrained, controlled free market in that sense. It is exactly as has been done with journey planning apps in New South Wales already, and that is world leading. A lot of places look to New South Wales and say that is a really smart way of doing things. The central government cannot be a predictor of the technology of apps and move faster than app builders themselves but providing equal access and a set of rules to play by is a really, really good news story for end consumers.

The CHAIR: I just have a question that I want to ask Mr Christensen. Looking at your submission, you said that you are looking at women's safety on public transport as well. I want to hear a little bit more about that, if you could expand on that please?

Mr CHRISTENSEN: There are several aspects to that endeavour. Part of it is about making information available to potential travellers of the state of occupancy of the vehicle that they are intending to get on, whether that is a bus or a train. Because people are then empowered to make their own assessment of whether they are comfortable with that level of occupancy. For women it has been found that quite frequently—it is hard to say how frequently, but frequently—women find travel in the company of others to be attractive, whereas the prospect of entering an empty vehicle is perceived to be more risky. Whereas from a COVID perspective of course the reverse applies.

Nonetheless, the point is that by making information available to people to make informed choices people can manage their safety somewhat better. In another direction, technology has now advanced sufficiently that aberrant behaviour can be quickly detected in an automated way and so identify a risk situation very early in a way that might allow opportunities for intervention. There are other options, but we should probably take that off-line.

The CHAIR: Thank you, that is a great contribution. Did anyone else want to make a comment in relation to that?

Ms EXCELL: What we put into our submission is we look at driverless technology by understanding where the community sentiment is around this. We have been running our survey on community attitudes; this is our fourth wave of the survey since 2016 and this time around we asked about COVID and we continue to ask about sharing and tracking information particularly around that topic, around public transit and also data sharing. We see that women are more concerned than men who respond to this survey about sharing their data and being tracked using their data. So whilst we would expect, being a woman myself, that being able to understand safety and security, understanding who is in the train, how many people are there, whether they are more safe or less is up to debate, but we still need to understand that women are less reticent and more concerned about sharing this sort of data.

I think it is really important to understand the customer and get the customer insights from the data and not just surmise that that will be something that women will be willing to do. Our survey does provide a lot of insights around changing opinions around public transit over COVID, and I think that that is self-explanatory. But the key thing around this and the maths, to support Mr Le Breton and others, is that on-demand service, filling a gap on what is perceived to be a deficiency in the service now, whether it is for women or for other users, like people living with a disability, I think that is a real key around getting a greater uptake and acceptance of this. I just really say that we need to ask women and we need to understand how women's thinking is different to men around certain aspects around data sharing and public transport.

The CHAIR: Thank you very much. Committee, are there any other questions?

Mr GURMESH SINGH: I have a question for Mr Christensen. Do you foresee any particular challenges for these transport systems in regional areas compared to city areas?

Mr CHRISTENSEN: Yes, but there are opportunities on the other side of that. The smaller numbers of patrons in the regions makes the provision of services typically more expensive, or the provision of services at the same level of frequency as is enjoyed in urban settings, it becomes more expensive. But as Transport for NSW has discovered from, I think it was, Moree, those transport services, if they are reconfigured to being, shall we say, on-demand services, can offer a higher level of service in rural and regional communities than was previously experienced and for lower overall cost. So my answer to your question is yes it is more challenging to deliver these services in rural and regional areas, but if we look at the movement task and the peoples' movement needs in those areas, we can typically devise a different arrangement of transport services, a better level of service to the individual customers than was previously available.

Mr GURMESH SINGH: Would anyone else like to comment on that as well?

The CHAIR: Mr Le Breton.

Mr LE BRETON: Yes, I fully agree with Mr Christensen. We must, for example, for autonomous vehicles in regional areas a great case study because generally they do not have the level of traffic congestion and interferences. So we can test this technology, which starts, obviously, with lots of safety redundancy. We see if you are in a big traffic situation the vehicle would stop too often to provide that customer experience, but we can test those services in regional areas. Yes, there is a cost involved, but then the outcome may be a very good one because you can have the autonomous shuttle with no emissions and with an on-demand facility, which means

that you run it potentially only when you need and when there are people who require the service. That is another example of a flexible, innovative service that can really fit well in the regional context.

The CHAIR: Thank you. Mr Christensen, did you want to further comment?

Mr CHRISTENSEN: Yes, if I may. If I could add to Mr Le Breton's response? We also observed that regional and rural areas suffer the more severe per capita rate of accidents and fatalities. So as we contemplate the transport systems that we make available in rural and regional areas, in fact rural and regional becomes a very attractive location to be the focus for the introduction of higher levels of automation because the fatalities that occur in rural and regional are typically related to driver behaviour and driver error. So to reduce the road toll, the road trauma level in rural and regional it will be highly advantageous if we can accelerate the adoption of higher levels of automation. That is not quite the same question as public transport but, nonetheless, to solve the transport task, the movement task, in rural and regional, there would be a strong attraction to implement even single occupancy automated vehicles into that space.

The CHAIR: Thank you. Mr Singh, a follow-up question?

Mr GURMESH SINGH: Taking aside the economics but just talking purely about the technology, a lot of rural roads are unmarked or they could potentially be gravel or dirt roads. Does that present its own level of challenges to automation and what might be some potential solutions to that?

The CHAIR: I will go to Mr Christensen first and then Mr Le Breton.

Mr CHRISTENSEN: The level of infrastructure support varies quite widely in rural and regional and at this stage of development, automated vehicles work better on roads that have lines particularly in the centre and down the edges. So at this point in time there would be a limit to the range of roads that automated vehicles can operate on, but that is likely to change as the technology develops.

The CHAIR: Mr Le Breton?

Mr LE BRETON: If I can complement? We do send autonomous vehicles to the moon and they work there on very difficult situations. Realistically, everything is possible. However, I agree with Mr Christensen, we know at the moment automatous vehicles work better on dedicated corridors and they can come across traffic intersections, but that needs to be marked and planned. So the technology will evolve. But at this stage we should consider in regional areas sealed roads to do those tests and with the infrastructure, which is also talking to the vehicle—that is not only the vehicle that is autonomous, but that is catching within infrastructure to guide the vehicle. I think Ms Excell wanted to say something so I will remove myself.

The CHAIR: Ms Excell, would you like to expand on that?

Ms EXCELL: Thank you very much. Absolutely there is an infrastructure piece here to be able to support existing technology. We hear from providers of vehicles that you can buy today that there is deficient infrastructure, particularly in regional areas and some of the things that you pointed out, which means that some of that technology cannot work and so it switches itself off or in some instances has false positives. So it is actually eroding the confidence of users of using this technology and getting the safety benefits of existing technology that is in light vehicles and heavy vehicles now. We would be really strongly looking at what is a minimum level of infrastructure that is required to allow this technology that is available in most trucks and most cars that you buy today to be able to operate safely. I think that that is really important.

To Mr Christensen's point, the dividend of investing in that is the reduction in crashes and fatal and serious injuries. So that is a huge dividend to any State. But just regarding the ability for automated vehicles to be able to operate on unsealed roads and in different climates and conditions, Australia is a world leader, a global leader, in the deployment of automated trucks in mining, and that is a very rugged environment, as you would expect, and yes, the technology and the instrumentation is (inaudible), but we also have quite a strong defence and a defence cooperative research centre [CRC] that is looking at tougher automatous systems, working in rugged conditions. So there is capability and technology to operate on unsealed roads.

The clear thing we need is very accurate positioning—accurate GPS, which the Federal Government is investing in—those sorts of things about understanding where the vehicle is and then technology can operate now on unsealed roads, and what we have been advocating globally is that Australia is a great (inaudible) but we need to refine some of our technology that has been developed for other countries into Australian conditions and that includes undivided highways and also the unsealed roads that we have.

The CHAIR: Thank you, Ms Excell. I am mindful of our timing now. I thank all the witnesses for your evidence and your contribution today. I found it really, really interesting—I am sure our Committee members would agree with me. You will be provided with a copy of the transcript of today's proceeding for corrections and

any questions on notice. I do not think we have any questions on notice at this point, but if you do you can see our secretariat and they can work that through. We will forward them to you if there are any questions on notice and you have 21 days to respond once you receive them. I think we have asked enough questions. It has been really enlightening with your responses. Thank you so much for your contribution. I hope you will be able to listen to further contributions from other witnesses as we go forward today.

(The witnesses withdrew.)

(Short adjournment)

ZOE CONDLIFFE, CEO and Founder, She's A Crowd, before the Committee via videoconference, affirmed and examined

JOHAN BARTHELEMY, Chief Investigator, The SMART Infrastructure Facility, before the Committee via videoconference, sworn and examined

The CHAIR: I welcome our second panel of witnesses. Do you have any questions about the hearing process. No, okay. The hearing is being broadcast publicly on Parliament's website. There are a few formalities that I want to remind you of. The Committee will ask questions and I have asked that each Committee member introduce themselves if I have not already. As the witness responds, if you could say your name first because it is being recorded and as we formalise the recordings it is much easier to have your name stated before you speak. If you can just keep that in mind, thank you. Can I invite Ms Jo Haylen, who is our first off the rank for this group of witnesses to ask a question please?

Ms JO HAYLEN: Thank you, Chair. I am interested in the submission by She's A Crowd and would like Ms Condliffe to expand on the opportunities that using data for women's safety on public transport present and, in particular, how do we distinguish between people's perceptions about what is safe versus what the data shows us and how we can best use that data to not only improve women's and other marginal groups' access to public transport but to all forms of transport?

Ms CONDLIFFE: Thanks for the question. She's A Crowd advocates for an approach that does take into account the experiences of especially women and gender-diverse people while travelling around and getting from A to B. We know that, for example, nine in 10 Australian women have said that they have experienced street harassment and have had to modify their behaviour as a result of that, and 46 per cent of women said that they felt unsafe on public transport. That is from the Sexism in the City report by Plan International in 2018. Yet, depending on which study you look at, between 80 and 90 per cent of sexual assault is not reported to the authorities. We believe that that represents a gendered data gap between the actual experiences of women when moving around when on public transport, when at an event as well, and what authorities actually have access to in terms of data.

At She's A Crowd we also believe that it is really difficult to adequately address an issue as complex as gendered safety and gendered violence if you do not properly understand the nuances of that issue. We work to collect geolocation data about this through our reporting platform that we have on our website and deliver these to government and decision makers. Just to address the second part of your question as well regarding the perception of safety versus actual incidence of unsafety or violence, we tend to agree with the school of thought that understands perception of safety and actual incidence as equally important when trying to address equity in gendered kind of transport, I guess, because even if you just feel unsafe in a particular location or at a particular time of day or night, that is going to affect the way that you move around the city.

Everybody has a right to feel safe moving around the city and a lot of the time we find that women are going out of their way to change the way that they move around the city, and this can become costly or time-consuming for them. Some of them are even removing themselves entirely. We found that 12 per cent of our participants were not going out at all at night because of this. A lot of that is to do with perception of safety rather than the actual risk in that particular location. We understand that that is just as important as an actual kind of index of incidents that have happened in a certain area.

Ms JO HAYLEN: Given your research, Ms Condliffe, if, for example, that data and other data sources were combined on a platform available to all transport users, what might some of the criteria might be, some of the selections available to users to create a route that was safest for them, that they felt comfortable to use, and particularly at night?

Ms CONDLIFFE: We have worked with Transport for NSW to create an algorithm for a journey planner that takes into account safety preferences, but they are below things I want to say about this because we know that safety is a subjective concept; it is different for everybody. One of the most important things that we found when we pulled together a global ethics panel to discuss way-finding ethics as well as gendered safety ethics was not to market such a tool as a safety tool as such but rather as a route preferences tool. We know that around three-quarters of people already use way-finding tools to get around and that way-finding technology takes into account a whole bunch of things, like you can pick for tolls or not for tolls—there are even some that are designed for rainy weather—and yet we have not yet seen one that takes safety into account, especially from a gendered perspective. So we went ahead and used our data as well as the open data available from New South Wales city of Sydney to design an algorithm that could work as an application programming interface [API] to plug into existing way-finding software to help people determine the safest route home.

Just broadly, I want to say that we believe that information and understanding, having access to information about your city is a really important and empowering thing to have when you are moving around, and we wanted to create a tool that worked for women from an empowering perspective rather than a paternalistic perspective. I did a study a few years ago and looked at women and safety apps and I found, with Monash University, that 79 per cent of women's safety apps were using a very paternalistic approach, which we did not want to use. Access to information, just to understand what your risks are from your own safety kind of perspective is really, really important and increases a woman's sense of urgency when moving around the city. That was really the goal with the journey planner concept, which is currently at the prototype stage.

To answer your question more specifically, we did a big concept validation process with focus groups and surveys as well as some secondary research and we found that the key items that were most important for women when trying to understand their route home after dark especially were crowding, but, more importantly, the type of crowd. Women wanted to know if there were big sporting events on because they would like to avoid those events because of associated acts of violence around those events. But we know in some contexts crowding is actually an indicator of safety. So, as I said, it is subjective again. They also wanted to know lighting, clear weather, clear signage; they wanted to know information about exits and entrances, especially around stations, so thinking about tunnels. They wanted to know station staffing hours.

They told us that they would change the stations that they took on their route home if they knew which ones were staffed at that time and which ones were not staffed at that time. They also wanted to know CCTV and where that was located, as well as green spaces was a big one and shop opening and closing times, because they wanted to understand about whether passive surveillance would be present in the area that they were travelling through, and passive surveillance being people who might be witnesses to any incident that might occur. Thirty-two per cent of our participants said that they would be likely to change their route based on safety concerns and 78 per cent said that they had previously in their life changed their route because of safety concerns.

The CHAIR: Thank you. Was there a question from Ms Petinos?

Ms ELENI PETINOS: We can run left to right, if you like.

The CHAIR: Mr Singh, did you want to ask a question?

Mr GURMESH SINGH: No.

The CHAIR: I am finding the statistics very interesting in relation to safety for women and different choices of areas that are staffed and unstaffed. That is not readily available at the moment, is it, for people that want to access that information?

Ms CONDLIFFE: We know that there is data on this but we do not believe it is available in a way that is accessible to the average consumer.

The CHAIR: Also, the fact that people would change their movement habits based on whether there was passive surveillance is quite interesting as well and looking at that from Transport for NSW and the public transport facilities we have available in considering that. So thank you for raising that. Dr Barthelemy, did you want to make a contribution in relation to the comments you have just heard?

Dr BARTHELEMY: I believe it is very expanded. I think that I will not.

The CHAIR: That is fine. Dr O'Neill, did you have a question?

Dr MARJORIE O'NEILL: Thank you, Chair. I guess this is both expanding a bit of what you just said, Ms Condliffe, also Dr Barthelemy as well. I think we are seeing how technology is both solving but also creating problems, but particularly sort of a bit more of an understanding around how the automation around a lot of public transport, whether we are talking about CCTV or other things, what that has done in terms of people's perceptions of safety and then how that is intersecting with that around safety and people's views around it, their interaction with technology and what you have found.

Ms CONDLIFFE: I can start. Correct me if I am not using the right type of example or if I have misunderstood the question. I just had one example I wanted to raise. Something that we noticed consistently in the research that we do, whether it is focus groups, whether it is through the stories we collect through our platform or through one of our surveys, is this idea, the fact that there is a limited amount of station staff and we do not have conductors anymore. Often women tell us, "We just want conductors back", because they do not believe that ticketing staff are trained appropriately to respond to disclosures or to look for gendered elements of violence. We know that male-on-male violence is a real issue in the city; it, however, is very overt and we can really see it happening, it can be captured easily on CCTV and it can be easily charged.

Gendered violence is a little more subtle; it is usually quite opportunistic. Think about peak hours, someone opportunistically taking liberties with how close they are to you; covert photo taking; being followed off a tram or a train or whatever it is; just being stared at, like little comments here and there, whatever it is it is usually quite subtle. What we hear is that when everything is automated and there is no passive surveillance or there is no person around of authority, who is just kind of a friendly person who is just there in case you need someone to talk to or you need to signal to someone that you need help, when you need to go and stand next to someone, that is increasing the incidence and it is increasing feelings of unsafety while travelling. So, again, apologies if this is not what you in fact were talking about, but when you said the automation of everything and when I hear about driverless vehicles, the thing that begins to concern me is we need to make sure we are considering everyone's experience when travelling, not just the male experience. We know that the male is often positioned—the gender neutral is often the masculine. So, yes, that would be my main concern.

The CHAIR: Thank you. Does any Committee member want to add to that. Ms Haylen?

Ms JO HAYLEN: Thank you, Chair. Just further to that, Ms Condliffe, does your data therefore indicate that travellers would preference, if they, for example, had an app of a future platform that they would prioritise having physical surveillance, the presence of a staff member, the presence of bystanders over CCTV and would a future platform be able to rank those different types of scenarios for them to select their journey?

Ms CONDLIFFE: It is so subjective. Some people really put a priority on CCTV and some people really could not care less about CCTV. Some people find that having passive surveillance around is much more effective. I do not think we have done a study where I could conclusively say that more people prefer passive surveillance than CCTV, but when we developed the algorithm for the journey planner we developed ranking systems around the weighting of each, but more importantly I think to the point is that we have designed it—and I would love to be able to show you my prototype—so that the user can select what is important to them. So the chooser can choose their own weighting; they can select CCTV—"I want to see a CCTV. I want to see crowding. I want to see lighting. I want to see green spaces" or "I don't want to see that", because we really wanted to honour that subjective experience of safety.

The CHAIR: Thank you. I just wanted to pick up on that point and invite Dr Barthelemy: in relation to CCTV, oftentimes that can be used to recall incidences that we then learn have happened, but your thoughts on actual live CCTV and respecting people's privacy, I would like your thoughts on that please.

Dr BARTHELEMY: As you are aware, CCTV is everywhere in the world, but the big problem is while they collect a huge amount of digital footage it is impossible to watch it. The only times when you watch CCTV footage is when an incident has been reported, but most of the time those incidents are not reported. We think that we can actually design a system, an artificial intelligence [AI], that can help the transportation agency to be taking their time rather than taking this anti-social behaviour on. Of course when you speak about AI with digital TV, people tend to be afraid of big brother. We do not need to follow blindly the AI. For instance, we should see the AI as something that can help the situation of [inaudible]. AIs can analyse media feed but only transmit when they are there. So they will never serve [inaudible], they will never track someone, apply facial recognition if you do not want it to. But you can adjust it to tell someone in a computer room that there is an issue and this is CTTV number six, "Please have a look", and you confirm the incident and you have done something, then you can quickly respond.

The other advantage of search and semi-automated system, because it needs to be supervised by people, is that you can work on other incident report generation, which means that you can at the end of the day create a new data source for the transportation of the data and have a better understanding on the safety and civility issues in the transportation network. But nothing beats, of course, human contacts and people on the ground.

The CHAIR: Just on those comments, what are your thoughts on respecting privacy as well, because there is a juxtaposition there, is there not?

Dr BARTHELEMY: Yes, privacy is a really important issue if you want the solution to be adopted by the public transport users. That is something that is the responsibility of the transportation by the heads of Transport for NSW who should make sure that AI of the system that they want to use is not identifying people. That is really something that is the responsibility of the user of the of the [inaudible] and it should be transparent for the people using the transport.

The CHAIR: Thank you. Mr Singh, you had a question?

Mr GURMESH SINGH: No, I just said your question was a good question.

The CHAIR: Any other Committee members with a question that you would like to ask our witnesses? Witnesses, would you like to make closing comments to the Committee at all?

Ms CONDLIFFE: I am happy to make a quick one. Thank you so much everybody for having us here today. One thing I did not mention was gender mainstreaming in policy and I just thought I would bring it up in relation to the original question regarding data collection and how it can be used and delivered. We deliver those data insights or gender mainstreaming across policies. I just wanted to bring that up as an essential policy approach rather than putting women's safety on transport in one box, but rather considering women's experiences and gendered experience specifically across all policies pertaining to transport and safety.

The CHAIR: Thank you very much. Dr Barthelemy, did you wish to make a closing comment?

Dr BARTHELEMY: Sure. First of all, I would like to thank you for this opportunity. One thing I would like to (inaudible) I think initiatives such as the Safety After Dark challenge has led to collaborations between universities, start-ups, technology leaders and transportation agencies. We think that is the way to go for New South Wales to be a technological leader in the smart mobility space.

The CHAIR: Thank you very much. I thank our witnesses for joining us here today and for your contribution. There will be a copy of the transcript of today's proceedings made available as well. Thank you so much for joining us and for your submissions. It is much appreciated.

(The witnesses withdrew.)

(Short adjournment)

JENNIFER MOON, Principal Adviser, Access and Stakeholder Engagement , Guide Dogs NSW/ACT, before the Committee via videoconference, affirmed and examined

CASEY GRAY, Member, Disability Council NSW, before the Committee via videoconference, affirmed and examined

BRUCE MAGUIRE, Lead Policy Adviser, Government Relations and Advocacy, Vision Australia, before the Committee via teleconference, affirmed and examined

The CHAIR: Welcome, everyone. We are resuming the live broadcast. I welcome Ms Jennifer Moon, Principal Adviser, Access and Stakeholder Engagement for Guide Dogs NSW/ACT and Ms Casey Gray, a member of the Disability Council NSW. We also have Mr Bruce Maguire, Lead Policy Adviser, Government Relations and Advocacy, Vision Australia, who is on the line. Those who can see me on the broadcast, would you raise your hand if you can hear me clearly please? Thank you. Mr Maguire, can you hear me? Am I coming through loud and clear?

Mr MAGUIRE: You are, yes.

The CHAIR: Fantastic. I am Robyn Preston, your Chair for the day. I would like to introduce our members of Parliament who are joining me on the Committee. To my left is Dr Marjorie O'Neill, the member for Coogee. Further to my left is Ms Jo Haylen, the member for Summer Hill and shadow Minister for Transport. To my right is Ms Eleni Petinos, the member for Miranda and Parliamentary Secretary for Transport and Roads. At the moment Mr Gurmesh Singh is unavailable, but he may be joining us towards the latter part of the conversation. He is the Deputy Chair and the member for Coffs Harbour. Witnesses, do you have any questions at all on the procedure so far or on what we will be working through? I take that as a no. We are recording the hearing and a transcript will be available later. As each person speaks, could you announce your name first for the audio so that we know who is speaking when the proceedings are being transcribed. We will proceed to questions. I invite our Committee to ask questions. I normally rotate from left to right. Ms Petinos, I can offer the first question to you if you would like or do you want to have others ask questions first?

Ms ELENI PETINOS: I will take it, Madam Chair. Thank you very much to each of the witnesses for making yourselves available today. The Committee certainly appreciates the time that you have taken to prepare the submissions and also the information that you are going to provide us with today. I want to use this opportunity to ask you about safety considerations that need to be addressed when developing new technologies. The Committee has previously looked into, for example, new electric buses and the problem that they can pose in terms of safety, given that the vehicles are rather quiet in comparison to buses currently on the roads and the issues that that poses not only for commuters trying to access the buses but also for pedestrians. I understand that this was touched on a little bit by Vision Australia, so if Vision Australia, in particular, has anything it would like to talk about with respect to new technologies as they emerge and safety considerations to be taken into consideration that would be very much appreciated.

Mr MAGUIRE: Thank you, Ms Petinos. You may recall that I gave evidence to your inquiry into electric buses last year.

The CHAIR: It is Bruce Maguire speaking. Sorry, I just wanted to announce that, Bruce.

Mr MAGUIRE: My apologies. Yes, it is Bruce Maguire speaking. You may recall that I appeared before you last year when you were inquiring into electric buses, and I raised safety concerns then as a high priority. We continue to see new and emerging transport technologies introduced without proper regard to safety. If I could just mention a survey that we have recently conducted into the experiences of people who are blind or have low vision across Australia with e-scooters and e-bikes and the other kinds of rideables on footpaths. What we found was that 60 per cent of respondents to that survey said that they have had an accident or a near accident with an e-scooter or an e-bike, 80 per cent said they do not feel safe anymore and 40 per cent said that they use footpaths much less often than they used to because they do not feel safe. So I think this is a classic example of where technology has been introduced with little regard for the safety impact on people with a disability generally but certainly people who are blind or have low vision.

I contrast that with the example in London where all London electric buses are now required to have acoustic vehicle alerting systems [AVAS] or sound generators so that they can be detected and recognised safely by people who are blind or have low vision, and those sound generators operate when the bus is travelling less than about 20 kilometres per hour. After that they tend to make as much noise as conventional vehicles. There is, I think, a growing awareness globally that new technologies can and must be introduced with due regard to the needs of people who have a disability.

Ms ELENI PETINOS: Do any of the other witnesses have any comment to make on the topic?

The CHAIR: Raise your hand if you would like to speak.

Ms MOON: Yes, I would like to—Jennifer Moon—just to echo Bruce Maguire's comments as well and just flagging that today is International White Cane Day. That is a celebration of people who have blindness or low vision travelling independently with a white cane, but a white cane is just that: It is a cane, and it does not detect all the hazards and it does not allow people to access places, spaces and services without this overlay of good design and accessible features. We play our part in teaching people how to use these skills to get out and about, but if the environment is not safe to do so then obviously this safety is at real risk. Just echoing Bruce's comments on the e-buses, e-scooters, e-vehicles: In footpath spaces, but shared zones as well, when cars are approaching, particularly from behind, you are not hearing that at all. If we are talking about connected automatic vehicles [CAVs] for the future, again a lot of the elements have not been discussed of how that would work for somebody who is blind or has low vision. So, again, good for the environment but we need to make sure they are safe and effective for people who cannot see.

The CHAIR: Casey Gray?

Ms GRAY: I just also echo Mr Maguire's statements regarding the design. I think it is very important that people with disability are involved in design from the get-go, rather than retrofitting for safety after the fact. We find that once a design has been put together and we do provide feedback regarding safety, sometimes that feedback is not valued. They do not see necessarily the dollar value in the feedback that we are providing, and so those safety features actually do not get incorporated into the retrofit. So design from the get-go, we need to be included in that design.

Ms ELENI PETINOS: I note that Mr Maguire was speaking about some of the global experiences and, Ms Gray, just now you mentioned the importance of being included in the design phase earlier on. So my question is to the witnesses as to whether or not there are any best-practice models in regard to the development of transport technology or to that consultation period and its development that have been used in other jurisdictions, that you are aware of, that would be useful for this Committee to consider.

Mr MAGUIRE: Thank you. It is Bruce Maguire. We know most about the work that is going on around acoustic vehicle alerting systems because that has become a global focus in the European Union, the United Kingdom, the United States and I think Japan and Canada as well as a United Nations standard. Those standards and guidelines have been developed through consultation with the disability community. For example, the sound that is used on the London electric buses that I mentioned earlier was developed in a trial involving, or consulting, organisations such as Guide Dogs for the blind and the Royal National Institute of Blind People.

In terms of connected autonomous vehicles, first and last mile services, those sorts of things, I personally do not know of best accessibility practices in those areas, other than general things like if you are going to design booking apps and they need to comply with the recognised accessibility standards. Ms Moon and Ms Gray may have more specific information about those things, but I would just reiterate the point that there are a number of jurisdictions who are starting to look more at this, not just around AVAS but also around some of these other transport technologies which are developing very quickly, and they are posing challenges that, as yet, do not have definitive solutions but are nevertheless not insoluble.

The CHAIR: Thank you, Mr Maguire. I notice that Ms Moon has her hand up.

Ms MOON: Again, just reiterating what Mr Maguire is saying, that because it is new technology we have not really, I guess certainly in Australia, caught up, and I think whatever gets designed as the alert, it needs to be consistent. We need to have the same sound that we are going to be aware what the vehicle is, particularly, as I said, when it gets to the slower speeds when there is more chance of pedestrian activity or even trying to get a bus and as it approaches and it becomes quieter then we are so reliant on the driver or somebody then saying that the bus is actually there.

I also make the comment now just, I guess, applauding government because the trial that was done about the e-scooters, I was fortunate to be on the committee, and the fact that you had people in that committee with disability or representing people with disability, the issues were raised and it was a very robust discussion because it was obviously for and against having e-scooters on our streets. But we were really pleased that the safety elements or the risk elements, probably more to the point, were acknowledged and, as you are aware, the trial did not proceed. So knowing that around the world, perhaps as popular as those e-scooters are, they are also so problematic and everybody will report on the problems of them as well.

The CHAIR: Ms Gray, did you want to make a comment on that or are you happy for us to move on to the next question?

Ms GRAY: I am happy to move on, thank you.

The CHAIR: I am going in the flow so I will ask a question. It relates to the submission from Guide Dogs NSW/ACT, Ms Moon, and your comments relating to refusal of rideshare and taxis, which then pushes the users onto buses and trains, and then you talked about the issues there as well. Would you like to expand on that and let me know how you feel that could be overcome?

Ms MOON: Thank you for asking that question. We have been providing—

The CHAIR: I might ask you to speak a little louder. It is just a little soft.

Ms MOON: There is a plane going overhead. Hopefully that helps. Yes, we have been fortunate to provide face-to-face training to the taxidrivers, and that occurred up until deregulation. Then, unfortunately, we lost that opportunity to do that. We were able to measure the effectiveness of the training over a five-year period, where we were able to reduce that discrimination by 21 per cent, which is quite fabulous. We have not since run a survey, although intend to, because in this time frame deregulation has occurred. No mandatory training is required. We have done a similar survey, not so much apples for apples, but alarmingly now the discrimination has risen dramatically, so we know that there is a problem here. We know that both with rideshare and taxi companies we need to get this education back in there and, I guess, mandatory was working, and maybe to look back at that again [disorder].

The CHAIR: Thank you, I appreciate that. Dr O'Neill, do you want to ask a question?

Dr MARJORIE O'NEILL: Yes, I do. Firstly, thank you all for coming today and giving your time. A bigger question or just stepping back a little bit—I would like to know your thoughts. Unfortunately, we cannot do everything at once. If we were going to be putting a priority list together, what would that look like? What things should we be prioritising in terms of transportation, technological innovation and how that intersects with the different forms of disability to encourage and facilitate more people using transport?

Mr MAGUIRE: Bruce Maguire from Vision Australia. Obviously, I think safety is absolutely paramount. Whatever technology is introduced and however it is introduced, it must be done in a way that is safe, and that may mean making sure that electric vehicles, whether they be buses or ordinary vehicles or CAVs, are detectable and recognisable. Next I think is the accessibility of the interfaces that people use to access technology. For example, if you are going to book a first and last mile service, we need to make sure that that process is accessible. One of the things we mentioned in our submission is that you have to have a whole-of-journey approach, and there is no point having one part of a system accessible if the parts that you need to access that part are not accessible. If you cannot book a first or last mile service to get to a bus, for example, it does not matter if the bus is accessible because you cannot get to it.

We do have to consider the accessibility of the interfaces and the various elements involved in the transport technology, and things like if you are going to use connected autonomous vehicles how is a person going to interact with that vehicle? If a vehicle turns up at your house, for example, how do you know, if you are blind or have low vision, that it is there? How do you know how to get into it and what to do when you are in it? These are design elements, and once the design elements are taken care of I think a lot of the deployment issues will become easier to deal with. It is those key design elements—safety, accessibility, inclusion and consultation—that I think are really key so they would be at the top of our priority list.

The CHAIR: I noticed Ms Gray had her hand up as well.

Ms GRAY: I think one of the priorities would be not to remove humans in the face of technology. For example, in gaming booths and connected automated vehicles, like Mr Maguire was saying: How would a person with low vision know that the vehicle was there? That would be the same as a person with intellectual disability understanding how to actually move from the bus to that vehicle. There can be a whole lot of anxiety and confusion and things, not just for people with intellectual disability but maybe psychosocial disability and a whole range of things, at all points of the transport journey, so removing people from the equation really makes accessing transport really hard for a lot of people with disability.

I, myself, when I catch a bus and I don't know where I am going, I have been in situations where I have had to walk three kilometres on a 35-degree day because I did not know which bus stop to get off at. I have seen everyday harms, people being bullied and things, on the bus because there was no person there who was able to stick up for that person. So I guess removing people from the equation increases safety risks in the community. It is really easy not to remove people from the equation. I think that should be number one.

The CHAIR: Ms Moon, would you like to make a contribution as well?

Ms MOON: I would, thank you. Again, buses, that is one of the hardest transport modes for people who are blind or have low vision because so much of that information is visual. We rely heavily on the driver to stop, number one, and then announce the number and destination because although the bus stops have improved dramatically with the installation of tactile ground surface indicators, Braille tactile signage at the bus stop that allows you to actually get the information specific to that stop, we still do not know what that bus is when it turns up, so we definitely need to improve the technology around that ability to know what the bus is. And what Ms Gray said too: We cannot take away people. People are the access link. When you have antiquated infrastructure, as we all know we have, human interaction can help bridge that inaccessibility to allow the person to continue on their journey.

Then, again, flagging the metro transport mode, gee, we applaud that one because to build a vehicle from scratch that is accessible, to build a platform in a precinct that is accessible is a game changer. If we all had so much money I know that you would all want to create that, but definitely going forward we need to make sure—and just on that point too, the new designs of train stations and precincts, although they may be accessible or have accessible features, they cause major problems for people who are blind or have low vision because they are big, wide open spaces. Again, with lots of commuters, it is really difficult to navigate, so technology for way-finding would certainly be welcome in those environments as well.

The CHAIR: Any other comments from the Committee? Ms Haylen, did you have a question you would like to ask?

Ms JO HAYLEN: Thank you so much to all our witnesses. These are really key voices in decision-making. I have heard loud and clear that you obviously want to get it right from the beginning. Everyone benefits from that, so thank you for your contributions. We have heard a lot about how we can, for example, make sure that advances in technology do not take us backwards in terms of access. What about the opportunities in technology? For example, this inquiry is considering an app that integrates our entire traffic and transport system. What would some of the key considerations be for people with disability in accessing an app like that, and what are some of the additional add-ons that we could provide—sorry, I shouldn't call them add-ons. What are some of the features that should be included so that everyone can enjoy that level of access? Sorry, I would like to hear from all witnesses, thank you.

Mr MAGUIRE: Thank you. Bruce—

The CHAIR: Ms Gray has raised her hand so I will go to her first. Mr Maguire, did you want to comment as well?

Mr MAGUIRE: Yes, I will do so after Ms Gray.

The CHAIR: Alright, I will ask you after Ms Gray has made her comments. Over to you, Ms Gray.

Ms GRAY: We would like to make sure—I think Mr Maguire was alluding to this earlier—that we have the bus and train system connected with the rideshare and the taxi system. We do not want to be interfacing with multiple systems to have one journey connected. We only want to have to learn one system. If we are going to have an app, an app is not accessible for everybody. Not every person with a disability has an iPhone or access to that kind of technology so, again, having a person at the end of a phone line to be able to take a call to do that way-finding journey the same as if they were using an app. People with disability, particularly intellectual disability, or people with low digital literacy need to be involved in the design of the app so that it is completely user friendly from the beginning.

There needs to be some kind of awesome way to address issues when the technology goes down because if I am a person with high levels of anxiety and an intellectual disability in the middle of a journey and then all of a sudden my way-finding technology or my trip planning goes down, what do I do, especially if people have been taken out of the equation? So making sure there's still people on the platform or on the train or wherever to help me as a back-up is really important. I guess the payment—I imagine that there is going to be changes to payment. I just need to make sure that—actually, I will just write that down. I will have to write it down because sometimes I get confused with my words so I will have to write that submission, so don't worry.

The CHAIR: That is fine, thank you. Mr Maguire?

Mr MAGUIRE: Thank you, Madam Chair. I begin by just reiterating the importance of a point that Ms Gray made about the need for multiple ways of accessing information because not everyone can use an app. On the other hand, for people who are blind or have low vision, apps have, provided they are designed properly—and I will turn to that in a moment—made a huge difference in terms of providing information that we were not able to use before. When I think of how I used not to be able to check restaurant menus before things like Menulog and Uber Eats and those sorts of things—there is a huge amount of information out there. Much of it is traditionally

conveyed visually, and with properly designed apps a lot of that information can be made accessible to people who are blind or have low vision. It is certainly true that not everyone uses an app, and that is why it is important for the Committee to think about multiple ways of accessing information.

We conducted research in conjunction with Curtin University at the beginning of 2020, and we found that in the 18 to 64 age group almost all people who are blind or have low vision across Australia have access to a smartphone, and even in older age groups the percentage is increasing rapidly. So we think that technological innovation can provide many opportunities for people who are blind or have low vision to have access to information that we did not have access to before, and that includes real-time journey information. If I am on a train and I need to catch a bus after I get off the train and that bus has been delayed, if I know in advance that bus has been delayed that makes a difference to how I think about it and plan the other stages of my journey. At the moment there is no simple way of finding out that information, so having an integrated app that is designed according to the principles of inclusive design—and they are well known, they are well authenticated, they are well documented, so it is not hard for app developers to design apps that are usable by people who are blind or have low vision. The hard part is making sure that they actually do it. Having some integrated approach to real-time journey planning I think would have huge benefits to people who are blind or have low vision.

The CHAIR: Ms Moon, would you like to make a comment?

Ms MOON: Yes, thank you. Again, I agree with all comments made: the integrated app, the one system. But looking also about the system, if it is, say, on the bus perhaps alerting you, first, to what bus it is and then you get off the bus and then it alerts you when you can get off, but then that seamless moving from the bus, let's say, through the environment into the train station, which we have just said is very difficult in the big, wide open areas and that indoor-outdoor seamless—perhaps we need GPS from outdoors to indoors, but definitely not taking away that staff element. But the technology also works with staff, that they have got improved technology. The fact that the customer service attendants can now make announcements from their phone anywhere on a platform is fantastic. The fact that they can alert the next station if somebody wants to get off at the next station and perhaps they need a ramp, and you know that that message got through. We have heard of many a story where people have been left on the train because they cannot get off because the assistant has not arrived with a ramp.

But I guess the big thing is, too, technology is a layer; technology is a layer of information and we need lots of layers in order to move through the environment safely. Again, there is all this great technology of telling you where you are going, but you get out and you encounter a kerb ramp and you cannot go any further. Our infrastructure also has to be accessible. As I said, it all comes together from the time you leave home to the time that you arrive at your destination. That whole journey needs to be accessible, and technology helps it but it is not the only solution to it.

The CHAIR: I want to make the witnesses aware and, for your information, Mr Maguire, our Deputy Chair Mr Gurmesh Singh has joined the meeting. He is also the member for Coffs Harbour. I understand he has a question. I will allow you to ask that, Mr Singh.

Mr GURMESH SINGH: Good afternoon, everybody. My question is to Mr Maguire but I am also happy if Ms Moon and Ms Gray would like to contribute. We have had electric buses in the community for a few years now. Certainly, more and more places are undergoing trials with electric buses. Do we have any anecdotal information about whether they are as hard to hear coming as was expected in the early days?

The CHAIR: Mr Maguire, would you like to respond?

Mr MAGUIRE: Yes, thank you. We do not have any specific anecdotal information around electric buses that I am aware of. We know that 35 per cent of people who are blind or have low vision reported in 2018 that they were involved in an accident or near accident with an electric vehicle. I suspect that most of those would not have been buses because I do not think electric buses were widespread back then. We know from the survey that we have just done about people's experience with e-scooters that 60 per cent of people have been involved in an accident or near accident with an e-scooter or e-bike, but I am not aware of any specific information about electric buses. I would expect that the results would be fairly similar to what was expected because no electric bus in Australia that I am aware of is fitted with an acoustic vehicle alerting system, so when buses are travelling at slow speeds you cannot hear them, just as you cannot hear an ordinary electric vehicle.

Mr GURMESH SINGH: Ms Moon or Ms Gray, would you like to make a comment if you have one?

Ms MOON: Jennifer Moon. Anecdotally, no, the same as Bruce: I am not aware, but that is something that we could certainly ask if we know the regions in which they are. But I would also assume, maybe incorrectly, if it is in an area where the bus is, again it is imperative that the driver is stopping for somebody when they see someone with a white cane or a guide dog because we cannot hail the bus; we don't know what it is. There is also

every chance the bus may drive straight past and the person does not realise that it has gone past. So, again, the human factor of the driver playing a crucial role in allowing accessibility of electric buses.

The CHAIR: Ms Gray, did you want to add to that? Are you fine with that? Thank you. Committee members, are there any other questions you would like to ask the witnesses?

Mr GURMESH SINGH: I have another follow-up for Mr Maguire. You mentioned that e-scooters—was it 60-something per cent of people who had had issues with e-scooters?

Mr MAGUIRE: Yes.

Mr GURMESH SINGH: E-scooters do have the potential to be a first and last mile enhancer of public transport or transport in general. What possible modifications or advancements could you recommend on something like e-scooters to help reduce the number of accidents?

Mr MAGUIRE: I think there would be probably three things. Firstly, some kind of sound-generating device like an acoustic vehicle alerting system. If you are walking along a footpath, you just cannot hear an e-scooter if it is kind of hurtling towards you, particularly if there is conventional traffic on the roads sort of nearby. So that would be the first thing. The second thing would be limitations on the speed that they can travel at. Vision Australia's view is that there should not be anything on a footpath that is travelling faster than you could walk, which is, I don't know, probably about 10 kay. We know that some e-scooters are travelling at 25-plus kay, and if you get hit by an e-scooter that is travelling at 25 kay plus the weight of the person on the e-scooter, you probably will not come out of it very well. That is one of the big things that has contributed to why so many people—80 per cent of people—who have responded to our survey said that they no longer feel safe when they go on footpaths.

I think the third aspect is regulation. It is very difficult now, if you are involved in an accident or a near accident with an e-scooter, to know who the driver was. There are no regulatory requirements around licensing and things like that around e-scooters, so I think it is very difficult to pursue liability claims if you are injured by an e-scooter. The fourth thing, there needs to be a way to make sure that when e-scooters are not in use they are parked in safe places or places that are not trip hazards. One of the things that came through our survey too is that a significant number of people were saying they have tripped over e-scooters that have just been left on the footpath. I think what that shows to us is that at the moment they are largely unregulated and people who use these scooters consider themselves to be essentially unregulated. I think that there has to be some way of influencing the awareness and behaviour of people who are using e-scooters.

The CHAIR: Are there any other comments from the witnesses? Yes, Ms Moon?

Ms MOON: Certainly, again echoing the issues with the e-scooters, like I said earlier I am really pleased that currently the State does not allow them on our footpaths, but knowing that, as I said, it is a robust discussion—but generally speed is an issue, the fact you cannot hear them. But for me, obviously the storage issue is that they are not proliferating the footpath. We all know the experiences that we had with the e-bikes when they were first released. For me, the only way that I guess I would be happy if they turned up is if they have their own designated path; they are separated from the pedestrian with not just a white line or something down the centre but a very obvious separation that pedestrians belong here in their safe zone and other faster moving vehicles, like scooters, whatever, are in another zone.

The CHAIR: Just looking at that, so councils would need to put that into their local environmental plan perhaps for footpaths that allow a wider footpath with dual user opportunities there.

Ms MOON: Exactly.

The CHAIR: Would anyone else like to comment on that? Do Committee members have any other questions? Witnesses, I thank you for coming today and for your contributions and submissions. You will be able to read the transcript once that is made available to you. If there are any questions that the Committee would like to send to you, do you agree to be able to respond to those within 21 days of receiving them?

Mr MAGUIRE: Yes.

Ms MOON: Yes.

Ms GRAY: Yes.

The CHAIR: Thank you. I think Mr Maguire said yes too?

Mr MAGUIRE: Yes, I did, thank you.

The CHAIR: So all three said yes and agreed to that. Thank you for your time today. We hope to have the transcript available to you very shortly. Thank you for your contribution. You may now leave.

(The witnesses withdrew.)

(Short adjournment)

BASTIEN WALLACE, General Manager Public Affairs, Bicycle NSW, before the Committee via videoconference, affirmed and examined

KEVIN HENRY, Chairman, Motorcycle Council of NSW, before the Committee via videoconference , affirmed and examined

The CHAIR: We move to our fourth panel of witnesses. We have two witnesses. I welcome Mr Kevin Henry, the chairman of the Motorcycle Council of NSW. Thank you for joining us here today.

Mr HENRY: Thank you for letting me come.

The CHAIR: I also welcome Ms Bastien Wallace, General Manager Public Affairs for Bicycle NSW.

Ms WALLACE: Thank you very much.

The CHAIR: I am Robyn Preston, and as I am speaking I am able to take my mask off. Thank you for coming. I am the Chair of the Committee. I would like to introduce you to my fellow Committee members. To my left is Dr Marjorie O'Neill, the member for Coogee. Next to her is Ms Jo Haylen, the member for Summer Hill and also the shadow Minister for Transport. To my furthest right is Ms Eleni Petinos, the member for Miranda and Parliamentary Secretary for Transport and Roads. To my immediate right is the Deputy Chair Mr Gurmesh Singh, the member for Coffs Harbour, who has been busy in between looking after regional issues as well. Thank you all for joining me, Committee members and witnesses. Witnesses, are there any questions that you would like clarified at all?

Mr HENRY: Not from me.

Ms WALLACE: No, none from me.

The CHAIR: You may have some further questions, which you are welcome to ask as we go forward. The proceedings are being recorded so I would like any witness who is asking or responding to a question to state your name first for the recording. A transcript will be made from the recording so it makes it easier if you state your name before you respond. We are looking forward to asking you some questions. I invite our Deputy Chair Mr Singh to start off with a question for our witnesses.

Mr GURMESH SINGH: My question is to Ms Wallace. In its submission, Bicycle NSW noted that better integration of bike journeys, micro-mobility and share e-bike schemes may assist in persons who live too far away from other transport options. Could you give the Committee a bit more information regarding the successful examples in Newcastle and Sydney please?

Ms WALLACE: Bastien Wallace. The examples that we have seen that have been very successful in Sydney, we had commercial operators who introduced initially share bicycles that did not work so well, but the share e-bicycle schemes have been very well managed. We have not seen the same level of abandonment of those bicycles, nor of vandalism, because I believe that those bicycles are able to be tracked and they certainly require a much higher level of service interaction because the batteries have to be changed around about every 60 kilometres. Those commercial schemes in the eastern suburbs of Sydney appear to have worked, but we are also aware of the highly successful scheme started in Newcastle under the auspices of Transport for NSW, run by BYKKO, where that is a docked scheme. That has been incredibly successful. There has been no abandonment of bicycles because they have to be docked to complete the journey. Otherwise, the user will be charged. That scheme was trialled for two years, and the decision was taken to continue based on its success, so we applaud Transport for NSW and its effort to trial that and we hope that they will do it elsewhere.

The CHAIR: No further questions, Mr Singh?

Mr GURMESH SINGH: Not at this stage.

The CHAIR: Do you have a question that you would like to ask at this point, Dr O'Neill?

Dr MARJORIE O'NEILL: Do you want to come back to me?

The CHAIR: Yes. Ms Haylen?

Ms JO HAYLEN: I thank our witnesses for their submissions and also for their time this morning. My question is to Ms Wallace. You touched a little on the opportunities of e-bikes and, in particular, docked schemes. Following on from that, how do you see the use of technology as harnessing the opportunities of those share schemes and, indeed, e-bikes and perhaps also e-scooters? I know you comment on those in your submission in the micro-mobility section, about how we can harness those opportunities in a tech space. If we had an app for

mass integrated transport, how would e-bikes and e-scooters integrate into that and what are the opportunities? Are there any examples from other jurisdictions or around the world that we should also look to as best practice?

Ms WALLACE: There have certainly been examples of the use of e-scooters in Queensland and the Australian Capital Territory [ACT] and Victoria. We could see the integration of micro-mobility and perhaps the technologies to access share schemes where people integrate their journeys, but we are also seeing in New South Wales, even though it is not lawful in the road-related environment, the use of micro-mobility for people to solve those last-mile journey issues that they have. So there is certainly a desire by many to be able to do that, and the advantage, I suppose, of micro-mobility, which highlights a challenge with our public transport system, is it is easier to take a micro-mobility device for your onward journey on a train or a bus. Unfortunately, in New South Wales we do not have bicycle racks on buses, as they do in the ACT, and taking bicycles on trains is difficult on some trains and requires boxing on others and booking ahead that does not always work, and can also be challenging on some of the new ferry models where the requirement to lift bicycles up high onto hooks is beyond the ability of many people.

So that whole integration is partly a modern technology issue in terms of activating novel technologies, but it is partly old school as well. Goods cars on longer train routes where you could wheel on and wheel off a bicycle would provide some space not just for standard shapes of bicycles but also for e-bikes. It would be a huge solution that would enable, in our rural and regional communities, that integration of journey where the train does part of it and then you can go around the township on your bicycle. But also, it is just that old-school kind of enabling people to bring their bicycles or their devices with them as well as exploring the new technologies where they are appropriate.

Mr GURMESH SINGH: I have a question for the Chair or for the secretariat. Are we allowed to reference evidence given in the previous session?

The CHAIR: Yes.

Mr GURMESH SINGH: The previous witnesses were from Vision Australia, the Disability Council and Guide Dogs NSW/ACT. One of the issues that they raised was pedestrian safety for vision-impaired people with e-scooters and e-bikes. Is that something that Bicycle NSW has considered? What might be some potential solutions to that issue?

Ms WALLACE: Bicycle NSW applauds and often will call in the expertise of user groups who have disabilities and are visually impaired. We know that with e-bikes there is this pressure. Obviously we are supposed to be on the road or on shared paths or cycleways. But then there is the pressure on a lot of our routes where there is no infrastructure and it is very dangerous, and people end up on footpaths. I certainly am alive to the concerns of pedestrians. There are some moves in some places to put an audible noise on share e-bikes and share e-scooters, but realistically it is an infrastructure issue. I could certainly see in our denser environments that need for a network of connected cycleways so that conflict does not occur between pedestrians, people in wheelchairs, the users of the footpath and users of micromobility, e-bikes and all sorts of bicycles. We really need the Government to deliver on its promise of a connected network of cycleways that would enable people to all have appropriate places to travel.

Mr GURMESH SINGH: In their evidence they said that they supported a speed limit, and the number they threw out there was 10 kilometres per hour on footpaths. E-bikes in New South Wales are limited to 25 kilometres per hour, but obviously that takes into account the fact that they are usually used on roads or mountain bike paths or whatever it might be. What are your thoughts on the 10 kilometres per hour speed limit? Do you think that is appropriate, too high or too low?

Ms WALLACE: With respect, I will need to correct you: The amount of assistance provided on an e-bike is limited to 25 kilometres per hour, but the user can still pedal a great deal faster. The actual speed limit applied to most of the road-related environment is whatever is posted for the adjacent roadway. If the user is on a bike path, it is the same limit as the roadway. I agree that that can cause conflicts. I know that there was a recommendation by the National Transport Commission recommending that if micromobility devices were used on footpaths they be limited to 10 kilometres per hour, which would be consistent with mobility assistance devices for people with disabilities. Certainly, in the initial discussions with operators, they said, "Oh, no. The devices could not be limited to 10 kilometres per hour." But then they found when they trialled in Brisbane, I believe, that around the Botanic Gardens they were able to ring fence those devices so that they slowed down to similar speeds in order to be more compatible with pedestrians. I believe there is a great deal more research that needs to be done in this area to improve the way that these devices are used. That was the purpose, potentially, of running a trial. It is regrettable that has not yet been able to happen.

Mr GURMESH SINGH: Being a cyclist myself, I also understand that a lot of safety can just be dependent on the rider themselves, whether it be of a bike or of an e-scooter. Do you think that this speed limit or speed reduction needs to be legislated, or do you think it could be solved with better training or a better understanding from bike users?

Ms WALLACE: I think there is probably a combination. Education is definitely needed. At the moment we just have prohibition. We have prohibition of bicycles on footpaths, and we then have shared paths, bike lanes and cycleways where people are allowed to cycle. Overall, yes, there could be education around safety behaviours, and Bicycle NSW does a great deal of that. But there is also a need for some regulation and enforcement in the road-related environment. Whilst I do respect and understand the needs of pedestrians and their concerns, the thing most dangerous to a pedestrian and a bicycle rider is a motor vehicle, generally a car. I think there is a really big need to actually address the statistically most dangerous thing in the road-related environment, and at present it is not the bicycle, the micromobility user or the pedestrian.

The CHAIR: I have a question for Mr Henry. In relation to connected and automated vehicles [CAVs] and also to what is being done from a manufacturer's viewpoint—and then tying in the opportunity for bike riders to travel to a public transport hub—what facilities are not there for them to be able to utilise that access more frequently? Mr Henry, would you like to comment on that?

Mr HENRY: Basically, the major concerns that motorcyclists have are fairly similar to what the pushbike lobby or Bicycle NSW have already explained and put in their submission. We have a lot of trouble with boom gates and gaining entry. Some of the boom gates do not recognise us coming in or out. There is a lack of equity in costings for where we park. Where we use parking where we have to pay, we take up a much smaller area. I think pushbikes are 10, roughly, and I think motorbikes are roughly—the envelope is about five. And yet we are forced to pay the same prices—similar tolls for what other vehicles use. When the electric motorcycles come more into use there will be allocated areas for vehicles. But there have been none that I am aware of specifically designed for motorcycles, and I am not sure what e-bikes have that facility.

Our main issues are entry. We do not want to use combined areas, going to parking spots where you have to cross and use pedestrian walkways. Certainly we are very happy to use areas under ramps that cannot be accessed by other vehicles except for pushbikes and motorbikes. Basically that is what our main concerns are—just getting easy access and being considered in the design and production of these. There is a parking area being built in the Ryde municipality and, whilst there were areas for motorcycles, that has been neglected and that has not been part of their construction plan. Without any kind of consultation, we have been simply ignored as a stakeholder in the road users in parking lots.

Other than that, we are trying to get some sort of safety and clarification on automated vehicles, on how they will receive and recognise motorcyclists, because we do not travel in a dead straight line. We often have movement with wind, road conditions and obstacles. Similarly pushbikes, when they assert pressure to go up hills and down hills, cannot travel in a dead straight line. Many of the systems do not recognise that moving object. Those are some of our objections. It is basically our safety. We do not feel that the safety should be put on the motorcyclist; it should be put on the major vehicles.

It is fair enough to say that motorcyclists should wear armour and protective clothing, and we agree with that. We accept that, same as the pushbikes wearing helmets. But when it comes to having devices at our expense that we have to purchase such as transponders so that other vehicles can recognise us, and the responsibility is taken away from the user of the vehicle and it is relying on technology, if there is a failure then it is always the vulnerable road user—pedestrian, wheelchair, motorcycle, pushbike—that pays the cost. In an interaction between a vehicle and one of us it often includes injury and pain, whereas between two vehicles it simply can be, in a mild manner, just damage. I hope that answers some of the question.

The CHAIR: Thank you Mr Henry. I could see Ms Wallace nodding her head. Do you want to add anything Ms Wallace?

Ms WALLACE: We would support Kevin's statements and I would add to those because Bicycle NSW is represented on the Construction Logistics and Community Safety Scheme [CLOCS]—a committee for the introduction of construction and logistic safety standards into Australia that is similar to overseas. We would also cite that the algorithms even in the best of heavy vehicles currently are based around detecting a sedan. When I asked the technical experts about whether or not those algorithms could detect motorbikes or bicycles the answer was no. I think it is incredibly important when we talk technology systems that we really ensure that the technology systems we introduce into the State of New South Wales and that we allow to operate in our jurisdiction actually perceives and plans for the needs of all users of the road-related environment, that is, bicycles, motorcycles, pedestrians and, at times, in rural and regional New South Wales too often horse riders and livestock are ignored as well. We really need to actually plan for everybody who uses our roads.

The CHAIR: Thank you. I am reminded by those comments—on the weekend I witnessed a bike rider when a car shifted into another lane without even seeing the rider and knocked them off. It was quite disturbing to see that type of behaviour on the road. Those are very good points. Thank you for raising them.

Dr MARJORIE O'NEILL: Ms Wallace, earlier you referred to the need for integrated separated cycle lanes and having a network like that. Obviously retrofitting these into an established city is quite difficult. What is your thought on things like speed reductions on streets, particularly non-arterial roads and creating alternative paths.

Ms WALLACE: Thank you Dr O'Neill. It is something that certainly can exist and we know of a trial going on in Waverley, and we have seen some speed reduction trials as part of the COVID measures, so we are looking forward to the data analysis from those trials. Waverley, as one of the highest densities of bicycle use in New South Wales, we would expect to see from our statistics whether incidents, injuries have been reduced as a result of those speed limits. We are looking forward to the data but we do not have access to it yet. It can provide solutions but what we have also seen is the excellent and very good new pop-up cycleways that Transport for NSW has delivered. They are lower cost and enable people to trial things in a road-related environment before locking them into place. We are encouraged by what is being done already and we would recommend that the Government does more of it as part of a lower cost alternative to putting in bike infrastructure and making sure that it is used before it is made permanent.

The CHAIR: Do any other Committee members have questions of our witnesses? Do witnesses want to say anything before we move to the next step?

Ms WALLACE: I would just like to say at this juncture, and probably for Mr Gurmesh Singh particularly, there is deep enthusiasm amongst bicycle riders to really be able to integrate their journeys with trains. There is a huge unmet demand by people who want to travel, whether it is for their daily journeys or for tourism. Bicycle NSW has tried and struggled to get traction in this area and to get people to call us back, but it is something our members are deeply passionate about. Given that we want models of tourism that activate our community, revitalise our economy and do not add lots of extra pollution, this is something we would really like to see explored by the Government. We just think there are so many opportunities and a great deal of enthusiasm by our members.

Mr GURMESH SINGH: Thank you. I would be happy to take that up offline.

The CHAIR: Mr Henry, do you want to make a comment?

Mr HENRY: I thank the Committee for allowing the Motorcycle Council to appear alongside Ms Wallace. We have quite a close working relationship and we are building on that. Quite a few of the instances highlighted by Ms Wallace through previous discussions that we have had are slightly similar, but not the same as motorbike riders although we do have a lot of trail bike riding. The main thing that I would like to ask is that we keep an open dialogue going so that we could have input because organisations like Bicycle NSW, the Motorcycle Council of NSW have a very big and broad base of professionals who have been doing this for a very long time.

We have a wide spectrum of all types of motorcycles from trail bike riding, ride touring, side-cars and all types of three-wheelers. I just appreciate SIRA and some of the other bodies that we deal with—Transport for NSW—that allow us to have input. I think it is very beneficial for all parties. If we keep the dialogue going I think we will find good solutions that are practical and economical for all. Thanks very much for allowing us to appear and have our say. It is much appreciated. Thank you very much gentlemen, and madam.

The CHAIR: Thank you very much for your contribution today. There may be questions that the Committee may want to put to you. Are you able to support responding to those? You will get 21 days from when you receive a question. Do you agree to respond?

Ms WALLACE: Yes.

Mr HENRY: Yes.

(The witnesses withdrew.)

(Luncheon adjournment)

KATIE MINOGUE, Maurice Blackburn Lawyers, before the Committee via videoconference, affirmed and examined

The CHAIR: I am Robyn Preston, Chair of the Committee. Welcome to the inquiry. Thank you for joining us. With me today are my fellow Committee members: Mr Gurmesh Singh, Deputy Chair and member for Coffs Harbour; Ms Eleni Petinos, member for Miranda and Parliamentary Secretary for Transport and Roads; and Dr Marjorie O'Neill, member for Coogee. Ms Jo Haylen, member for Summer Hill and shadow Minister for Transport has apologised for not attending this panel. I welcome our witness on our fifth panel. Before we proceed, do you wish to raise any questions about the procedures?

Ms MINOGUE: I do not think so, no.

The CHAIR: This is a live broadcast and for clarity for the recording it will be helpful if you say your first name before speaking. Is that okay?

Ms MINOGUE: Of course.

The CHAIR: We have an opportunity for Committee members to ask questions about your submission. I thank you for the time taken to contribute to this inquiry. It has been an interesting day so far and it is great to hear contributions from legal minds.

Ms ELENI PETINOS: Thank you for making yourself available today, Ms Minogue. We really appreciate the time that you have taken both to prepare the submission and the time that you have offered this afternoon talking to the Committee. Noting the submission that has been made by Maurice Blackburn Lawyers, I understand that your submission suggests that data collection from automated vehicles should be directed to benefit the public, rather than government agencies or commercial interests. Do you want to expand on that concept a little bit further for the Committee?

Ms MINOGUE: Certainly. I think the critical point whenever we talk about data, as I am sure the Committee is very familiar, is there is always just a balancing of interest between the public interest and, in particular, the kind of data that we can get from connected and automated vehicles has the potential provide some really significant benefits in terms of improvements in road safety. The black box, if you like, of the car and the kind of big aggregate data that we can get through connected and automated vehicles is critical to improvements, development of further technologies, making changes to infrastructure, et cetera.

We just have to balance that up against the issue of privacy and the issue of people's trust and confidence in their vehicles that collect these large amounts of data, and privacy in and of itself and the use of data for other purposes, as outlined in the submission. We outlined in the submission purposes that we think would be appropriate uses of the data but there are other potential uses of the data, for example, law enforcement where not related to any particular breach that has occurred in the vehicle, for example. It is really important to protect the privacy. It is also really important that the public embraces the new technology that has the potential to deliver some very significant benefit in terms of road safety and to get a public acceptance, like we have with other things that have been rolled out in recent times—the COVID-safe App, myGov—we need public confidence to make sure that it is embraced and people get on board with it.

Ms ELENI PETINOS: Are there any views as to safeguards that could be introduced to help propel public confidence?

Ms MINOGUE: Safeguards in terms of protecting the data?

Ms ELENI PETINOS: Yes.

Ms MINOGUE: I do not have particular expertise in the safeguards that could be put in place but certainly, as a general principle, we would support safeguards being put in place. Again I think it is just really important when legislating this sort of stuff that we are very clear about the purposes for which data can and cannot be used. The more prescriptive we can be around that, the more protected people's privacy will be, the more assured they can be that it will only be used for the prescribed purposes.

Dr MARJORIE O'NEILL: Ms Minogue, thank you again for making yourself available. Your submission talks about regulatory frameworks. Have you got examples of what you would regard as best practice that we should be modelling off?

Ms MINOGUE: Yes, that is an excellent question. I think it is really important to note that the National Transport Commission is doing an exceptional job of setting up the regulatory frameworks to allow us to roll out automated vehicles in a safe way, but also in a way that allows it to happen quickly and efficiently. I think the thing with automated vehicles is that the technology is evolving so quickly, it is quite rare that you see a set of

laws and legislation and regulatory frameworks have to envelop a new technology or anything new so quickly so and they really have done an incredible job at addressing it. I believe they started in 2016 or 2017 when they started with the automated vehicle trials and from then until now there have been about I think 13 discussion papers that have been turned into policy papers that have then been taken to the Transport and Infrastructure Committee.

I think we are in the enviable position in Australia of seeing how we are a little bit behind in terms of the roll-out of the technology compared to say, the United States of America and Europe, but that does allow us to be able to see what they are doing and the different approaches they take. The United States has a relatively less-restrictive approach to regulation. The European system is more codified as well but as a general principle it is little bit more codified and prescriptive and seeing how that plays out, six to 12 months back then, is a really helpful reference point. Also the United Nations is doing a whole lot of work on the harmonisation of these laws and principles across countries in the rollout of automated vehicle-related technology. So I think looking to overseas is really important. The National Transport Commission is doing fantastic work and noting that it is consulting with a wide group of stakeholders really allows the important voices to come to the table and be heard as the regulation is developed and rolled out.

The CHAIR: My question relates to connected and automated vehicles [CAVs] versus vehicles that are driven by people and the rights of someone who might be injured by a CAV. Will you elaborate on your concerns about that?

Ms MINOGUE: Certainly. It became apparent to us quite early on the piece, and obviously the core of what we do is looking after people who have been injured on the road, and bringing compensation claims for them, not just in our States and territories that have a common law system but also in States and territories that have purely no-fault based systems as well, just making sure they get their compulsory third party entitlements that they are entitled to have under their insurance. It became quickly apparent to us, that being our core area of expertise, that the wording of most of our legislation across our States and territories was drafted to account for a single driver being behind the wheel.

The CHAIR: Always, yes.

Ms MINOGUE: Essentially it talks to the driver. It is assumed that the driver—a lot of the case law that explored that point certainly defined "driver" to be a human driver and it became very apparent that that was not necessarily broad enough to capture when an automated driving system is driving the vehicle, even when a feature might be engaged like autonomous emergency breaking or lane keep assist. Some of the features that were in on-road models today could be interpreted that that is the car doing the work of the driving and not the human. What that would mean would be a completely inequitable system where, if I am a pedestrian walking across the road, if I got a hit by a car driven by a human driver I would have my full insurance entitlements under my State and Territory compulsory third party scheme and be protected. If I were hit by a car that had autonomous emergency breaking engaged, and the human driver did not put their foot down on the brake pedal, that very slight difference from a technical legal perspective might mean I have no coverage and I have to rely on Medicare and I would have completely different entitlements to the person who had been hit by the human putting their foot on the brake pedal.

One of the papers of NTC was addressing this particular issue—again great work by it. It picked it up early and addressed it and got assurances, basically, from State and Territory governments that the coverage would be equal. So that has been addressed in that very first important point that it is equal coverage for all. The second point that we make is that we want to get that enshrined in legislation. It is great that we have the assurance but I think it is really important that that has enshrined in legislation to ensure proper protection. Secondly, when it comes to common law rights that anyone injured by an automated feature on an automated driving system operating has the same common law rights in the States and territories where that is available, as if they were bringing a civil claim against a human driver. So it might be that a civil claim would be against a manufacturer or a software provider or even a road authority if it was a connected and automated vehicle, where the vehicle had a crash as a result of faulty communications from part of the connected infrastructure. It certainly becomes more complex when we look at civil liability but it is really important that those rights are there for people to bring those claims in the case of any negligence as well.

The CHAIR: You pointed out that compared to other countries we are teething out way through but to draw the comparisons with the United States or other countries that are well advanced in this area, how do their legal systems deal with this issue in court in relation to pedestrians who have been hit by CAVs?

Ms MINOGUE: Again, looking to America is often useful in that the litigation rates there are high. It is very hard to generalise because they are so State-based in America: each State really has its own approach to—

The CHAIR: Yes, has their own laws.

Ms MINOGUE: Yes, exactly. So it has really been on a case-by-case basis. A lot of them have settled out of court. The kind of jurisprudence in the area is still emerging but I think ultimately what is happening there is we are seeing the litigation and the common law drive the kind of precedents that are set. From a regulatory sense they do not have—again bearing in mind they are State based they do not have a huge degree of regulation around it so it then becomes individuals who are injured or killed bringing common law civil claims in the court and that is turning into laws that then dictate kind of future precedent, if you like. I think where we are heading is a much more balanced middle ground where we are doing a lot more work around putting the regulation in place first and making sure that we have a consistent, kind of, uniform well-thought out approach to how we can regulate the roll out.

When it comes to civil liability, I think it is always going to be a case-by-case scenario. I think it is important that we have systems in place to make sure there is accountability by manufacturers and the responsible parties and that they have, for example, money in Australia in the event they do do something wrong and have to be sued, or they are negligent and have to be sued, we cannot have them, sort of, being a shell company in Australia with their money in the Cayman Islands. Again that is part of the work the NTC has been doing. Our system is really good in terms of we have a very measured, good, strong, common law system for bringing civil claims. I think it is just making sure that autonomous vehicles, and the parties responsible for them as they are rolled out, as they take over more of the driving task and that becomes potentially a bigger liability aspect, we want to make sure that we have got some good regulation in place that holds them to account from a safety perspective, but the balance is that we also have a common law system that supports holding them to account if they are negligent or they do something wrong. I think we are finding that good balance by looking overseas and seeing how they are doing it and developing our own path with that measured balanced approach.

The CHAIR: That makes sense. Would you like to make a further statement?

Ms MINOGUE: Just to say that from our perspective as a personal injury and social justice firm that has been looking after injured people for over 100 years now, particularly people who have been injured on the road, transport technology is something that we see as a really important factor in improving road safety in the years to come and we have got significant expertise in the laws governing road use across various State and territories, including New South Wales and certainly obviously compensation schemes as well. If we can provide any further assistance to the Committee in that regard or in any future endeavours in this space, particularly in relation to connected and automated vehicles that the law and the legislation around that is a particular passion of mine, we would certainly be happy to help the Committee in any capacity.

The CHAIR: Thank you very much. Committee members, are there further questions?

Dr MARJORIE O'NEILL: No, thank you.

The CHAIR: All right. I will let the witnesses know that we will be able to send you a copy of the transcript once that is provided from our secretariat. If there are any questions, are you able to respond to them once you receive them within 21 days?

Ms MINOGUE: Yes, of course.

The CHAIR: The Committee would be appreciative of that. Thank you very much for participating today.

Ms MINOGUE: Thank you very much.

Dr MARJORIE O'NEILL: Thank you.

The CHAIR: Thanks for your time.

(The witness withdrew.)

SUE WIBLIN, Executive Director Emerging Technologies, Customer Strategy and Technology, Transport for NSW, before the Committee via videoconference, sworn and examined

LEWIS CLARK, Acting Head of Technology and Innovation, Customer Strategy and Technology, Transport for NSW, before the Committee via videoconference, sworn and examined

The CHAIR: I welcome everyone. I am Robyn Preston, the Chair for the inquiry. I see we have Ms Sue Wiblin and Mr Lewis Clark via videoconference. I will introduce Committee members who are in the Jubilee Room: To my far right is the member for Miranda and Parliamentary Secretary for Transport and Roads, Ms Eleni Petinos; to my closest right is the Deputy Chair of the inquiry and the Committee and also the member for Coffs Harbour, Mr Gurmesh Singh; and I introduce the member for Summer Hill and shadow Minister for Transport, Jo Haylen, who is online; and I announce apologies from member for Coogee, Dr Marjorie O'Neill, who had to leave. Ladies and gentlemen, welcome. We are really pleased to have your quite in-depth submission in front of us. Thank you for the work you have put into this. I appreciate the time and energy you have spent preparing this. Just before we go ahead, are there any questions in relation to the procedures that you would like to ask me?

Mr CLARK: No, thank you.

The CHAIR: All right. I advise you that this inquiry is being recorded. I invite you to say your name for the recording. We are not making notes as we go, so if you would announce your name before you speak, that would be the best way and it will be easier for us to transcribe. We will be sending a copy of the transcript to you at a later date. If I may, I will go straight into questions from the Committee. Deputy Chair, it is your turn to go first. Would you like to ask a question, please?

Mr GURMESH SINGH: I think I will let Ms Haylen go first because she is online, if that is all right.

The CHAIR: Yes. Ms Haylen, would you like to ask a question?

Ms JO HAYLEN: Thank you, Chair. Can participants hear me?

The CHAIR: Yes, we can.

Ms JO HAYLEN: Thank you. I will leave it up to Ms Wiblin and Mr Clark as to who is best to answer. I am interested, I guess, in your insights about where Transport for NSW is looking for best practice at home and overseas about models for the next steps in using our transport and movement data to create an integrated platform, whether it is a MaaS platform or some other version of that. Where are you looking at as best practice? Secondly, at what point or at what stage would you identify that you are at?

Mr CLARK: I will answer that, although you did break up a little bit so I will do the best I can. From a Mobility as a Service perspective what we are really looking to be able to do is better connect customer journeys from a plan, but from a book and pay perspective as well as taking information from customers. I think if you look around the globe, Mobility as a Service [MaaS] has different characteristics in different areas and different jurisdictions, I guess, that have been apart depending on their differing channels. What we are really focused on in Transport is being able to trial products, understanding customers' feedback on that to work with industry and work in partnerships with others, as well as undertaking research through things like academia.

What we have seen most recently is that the Government has developed an Opal Connect platform that helps begin to connect those journeys up. We have seen that with some of the on-demand services. As part of our future transport technology road map, we are also looking at a number of other technologies that connect with autonomous vehicles, around digital twins and around sensors and intelligent systems. Again, with an open mind and in partnership with industry feedback, we are endeavouring to really better understand how we can connect those data and systems together to give us better outcomes.

For us, the defining process is really to get customer feedback and engagement in partnership with industry. We hope that that feedback we can work with others. We think that will really help us progress in the future, over the next couple of years. But a lot of our focus has been, and will continue to be, on trialling and getting feedback from customers and getting feedback from industry to make sure that we can deliver incremental improvements but adjust to make sure that, as we progress down that journey, we have got really good products and services for customers.

The CHAIR: Mr Clark, I am not sure how close you are to your microphone, but if you could maybe speak up in the future? It is a little bit difficult to hear you in this room.

Mr CLARK: Okay.

The CHAIR: Thank you. Ms Wiblin, would you like to make a further comment as well?

Ms WIBLIN: Just adding to Mr Clark's comment, we have fairly extensive global networks and we reach into many sources in terms of information and to build on trials that we have here or things that we are looking to do. An example of that is that we are looking at the moment at technology for level crossing safety. We have been in contact with the UK, Canada and New Zealand in our autonomous MaaS vehicle trials and we are in close contact also with a number of public transport authorities [PTAs] in Europe, as well as Transport for London, which we are in constant contact with. We really do, as Mr Clark said, through our academic research projects but through our extensive partnership works as well, tend to scan the world thoroughly to make sure that we are bringing back good solutions—the most up-to-date and most value-for-money solutions—for customers in New South Wales.

The CHAIR: Are there any further questions? Ms Petinos?

Ms ELENI PETINOS: Thank you, Chair. My questions are on a slightly different topic. I wonder if anyone has anything that they would like to build off from the member for Summer Hill's question: I would be happy for them to respond. Okay. I would like to thank both of you for appearing this afternoon before the Committee. The thing that I would like to follow up on is actually further to the evidence that has been put by one of the earlier witnesses today and I would like Transport's view on whether or not data collected from automated vehicles should be directed to the public rather than government agencies or commercial interests?

Mr CLARK: Thanks for the question. I think it is a fairly complicated area.

The CHAIR: Mr Clark, announce your name and then we will go to Ms Wiblin for a response as well.

Mr CLARK: Yes. It is a very complicated area. Certainly, at Transport for NSW we are really focused on managing—

The CHAIR: We are losing your volume. Just excuse me. We just do not want to miss any word that you are saying.

Ms ELENI PETINOS: We are just seeing if we can turn you up in here.

The CHAIR: If you would just like to hold on, we will check our audio from this end as well. While the team behind me is doing that, can I ask Ms Wiblin to comment and then we will go back to Mr Clark when we seem to have fixed our technical issues. Ms Wiblin, do you need the question to be repeated?

Ms WIBLIN: No. That is fine. I think, as Mr Clark was saying, it is a complicated question because there are many datasets, so not being privy to the earlier comment I am not 100 per cent sure of what dataset people are referring to. But I believe there is data that the vehicle collects, which is really about the location of the vehicle and all the things that are happening from a technical perspective with the vehicles, so that is a set of data. There are sets of data that get created through surveys with autonomous vehicles as well and that data also is available to the public, so that is typically fed back—de-identified data but certainly survey results—as parts of reports. Without really understanding exactly which dataset was referred to, it is a bit difficult to give you a better answer, I am really sorry.

Ms ELENI PETINOS: I am happy to elaborate. It is not a specific dataset that we are talking about. It is the general principle.

Ms WIBLIN: Okay—[disorder].

Ms ELENI PETINOS: That is what is being posed. It is not a dataset itself that is in question. It is just the general concept that, given the nature of automated or autonomous vehicles, and the level of data that you are able to gather from an automated vehicle as opposed to another type of vehicle, there are concerns that have been flagged to this Committee about how that data could or should be used. So, I am looking for Transport's perspective or position on how they feel that data use would be appropriate in this circumstance. I appreciate it is a fairly broad question but that is the nature of the inquiry at this point in time.

Ms WIBLIN: Okay. To answer that question, I think it is really part of the testing and filing for us, so currently we are in the evolution of autonomous vehicles and the data that is collected. As I said, it is typically data that deals with the behaviour and the performance of the vehicle and there is a separate dataset, as I said, that really looks at people's preferences and attitudes towards autonomous vehicles, generally. So, at this point in the evolution of these types of services we tend to be using that data to further our own file. It is not really something that we would make publicly available. That is not to say that as the technology matures and there is other data available that we would not provide it more publicly, but certainly with all the privacy and data security that we would have around any dataset that we do, we would treat the data the way we treat all data and we would have the same amounts of privacy and data security fitting around it.

The CHAIR: Thank you. I might invite Mr Clark to speak now.

Mr CLARK: Thank you. I think Ms Wiblin is on message with it broadly.

The CHAIR: That is coming across well.

Mr CLARK: Thank you. I just wish to reiterate, though, that Transport really assumes the responsibility that comes with collecting data. I imagine some of the data collected from the vehicles would be very important to Transport to help manage the network efficiently, to help us understand the safety outcomes. What is so very important for us is that, where we do collect data, we do that in line with the legislation. We work with the privacy commissioner and are transparent externally to customers on what we use from a data perspective and what that is used for. But, as Ms Wiblin said, we in the early days of the journey. We are doing a lot of trials and are still understanding those datasets and to what extent they can add value to Transport for NSW and, therefore, to the New South Wales public.

The CHAIR: Thank you. Mr Singh, did you have a question?

Mr GURMESH SINGH: Yes. We understand that Transport for NSW has considered first-mile and last-mile policies and programs to address micromobility with devices such as e-scooters, electric skateboards and Segways. What consideration is being given to road and pedestrian hazards with regard to these devices?

Ms WIBLIN: I am happy to take that question, and I am sure Mr Clark also has a comment. Safety is at the heart of everything that we do as an agency. Every consideration is being taken to all of those, which is why we are taking our time to bring these types of micromobility services to market in New South Wales. Legislation restricts the use of these vehicles at the moment, but we definitely see that there is value in this type of micromobility in communities. But it needs to be balanced with the needs of the whole community. We know that there are concerns from a number of different cohorts in the community—people who are less mobile and people who have disabilities as well. For us, it is really important to measure the needs of all of the community members as we bring these technologies into the transport ecosystem. Mr Clark might like to comment on that as well.

Mr CLARK: I have nothing further to add.

The CHAIR: Thank you. I have a question in relation to the work that Transport for NSW is doing, trialling a number of partnerships with local councils in relation to the use of curb space for different types of vehicles and different modes. I am just reading from your submission; it looked quite interesting, being an ex-councillor for 12½ years. Car sharing, bus and taxi loading zones—I did some work on CAVs a little while ago. One of the concerns was safe places for these vehicles to pull up for people to enter them safely and where that designated space would be so that the user would know where to go, just like a bus stop or a train station. Can you expand a little bit on how you propose to do that and, if you are retrofitting different local government areas, how difficult that might be? Who would like to comment first?

Ms WIBLIN: Again, I am happy to jump in, and I am sure Mr Clark probably has comments too. Yes, we have run a number of these types of trials, one in Waverley, where we put in pick-up/drop-off [PUDO] bays that are essentially places for people to stop. There are also some other trials that are being planned at the moment, but unfortunately COVID has slowed down some of those. For us, it is really important. Being able to share the curb really will impact the flow of cities, so we think it is a tremendously important part of place making. There are parts of that that are less technical. In terms of retrofitting, there is a range of different options in terms of putting sensors in grounds or connecting sensors to existing poles—those sorts of things. Again, similar to autonomous technology, it is early days. We have just been trialling a range of different solutions to see which ones make sense. Most likely we will find that there will be a suite of different technologies that will be required because communities are so different. Mr Clark?

The CHAIR: Mr Clark, did you want to speak?

Mr CLARK: I have nothing further to add, thank you.

The CHAIR: Thank you. I am mindful also of some of the disability groups and their access to these types of facilities and these types of movements, and where they feel a safe place would be for them to alight or get into. That is something mindful, as well. Thank you.

Ms WIBLIN: Yes, I think that is a really important comment.

The CHAIR: Ms Haylen, did you have a question?

Ms JO HAYLEN: Thank you, Chair. The Committee has received evidence about the development of a variety of different platforms and that ultimately if we are to encourage all service providers onto one platform, including our public transport network, then that would require an ability for private entities to clip the ticket.

There is not a level playing field when it comes to ticketing because of our current arrangements, of which I am a fan, to be frank. I am happy to [inaudible]. I am interested about how you are confronting that. What is Transport for NSW's position there? Is it your intention that in the long term there would be one platform? Or will it be the case that some of these obstacles, if we are to maintain our current settings, would mean there would instead be multiple platforms?

Mr CLARK: Thank you for the question. As I mentioned earlier, it is quite early days for Mobility as a Service globally, with different ways to try and achieve that. At the moment our focus is on really being able to trial and understand customer feedback, understand customer demand and progress with being able to build our Mobility as a Service offering. We talked a lot about this in the context of apps and digital channels, but some of the other customer channels to service our community are very important in terms of being able to use contact centres. In terms of what a commercial model might look like and Mobility as a Service in the future, it is early days for us to be thinking about that. Transport certainly doesn't have a view on that at the moment. I think what we need to do is watch it mature, both as a technology solution and more broadly in terms of public and private services that are connected to any platform, and then amend the approach, if necessary, as we move forward. Again, it is very early in the process to be supposing what an outcome in two or three years might be, or longer.

Ms JO HAYLEN: Just following up on that, we appreciate that it is very early days. But given you are trialling and considering a range of different options, we have received evidence, for example, that overseas jurisdictions have looked at scenarios where different settings would be applied—for example, tourists arriving at an airport—and that perhaps private operators might be able to be a part of the market online for those tickets. Obviously, trying to encourage overseas travellers to use mass transit rather than rideshare or taxis, for example—are you looking at and considering those options?

Mr CLARK: Thanks for the question. As I said, at the moment that is really a step ahead of where we are. In March earlier this year when we launched the Future Transport Technology Roadmap we did talk about some trials, which have been impacted by COVID, that we intended to run with some other parties. We are committed to looking at different ways to achieve this. We are committed to trialling it. I can appreciate the scenario you have described, but at the moment we are not in a position where we are considering those types of commercial arrangements and clip of tickets and allowing other people to effectively sell access.

Ms ELENI PETINOS: Thank you, Mr Clark. I want to follow up further on what Ms Haylen was trying to ask you because I do think it is a very important matter for this Committee. If you are unable to tell us where you are going in two to three years, in your words—the evidence that you have provided is that you are currently trying to "understand customer feedback and demand" and also that you are "watching it mature". If you are unable to tell us about your future plans, can you please tell us what those statements mean and what you are currently doing?

Mr CLARK: Yes. Thanks for the question. At the moment our focus has been on the Opal Connect platform. Most recently we used that platform to help join up payments and planning to on-demand services, for example. We are also working to expand the ability for customers to be able to trip plan their journeys on an end-to-end basis. As I mentioned, in March we did announce some partnerships that we intended to proceed with using the Opal digital card—companies like Uber, Ingogo, Lime and My Fast Ferry. As I mentioned, that has been impacted by COVID, so it will be something that we will revisit. We have also been focusing on developing products like the Opal Travel app in response to COVID, for example—so, being able to provide proactive travel notifications, focusing on using data to provide customers with information about how busy services are. Using Opal Connect, we have also been launching trials allowing school students to travel using radio-frequency identification technology. There is a variety of activities taking place at the moment, which I hope answers your question.

The CHAIR: Ms Haylen, did you have another question you wanted to ask?

Ms JO HAYLEN: Thank you, Chair. Look, this is not directly related to some of the evidence we have received today, but it is topical and relates to the use of data and how to futureproof our transport network. As we return from COVID and people are moving back onto the network, how are you planning to use data to capitalise on an increasing work-from-home scenario? What technological advancements are you hoping to leverage to flatten the peak, for example, across both the day [audio malfunction]?

Mr CLARK: Thanks for the question. Ms Wiblin and my area is not really open to all of the technology in the service planning, but the technology has been useful for us during COVID. I mentioned some of those examples around proactive notifications for customers, helping provide information to customers on loading on services. As we have gone through the COVID journey we have also been able to use that data to provide services and capacity more than we would have previously, to try and meet changing demand. I think data remains important for us in terms of understanding customers coming back on the network, being able to make sure that

the transport network is COVID-safe and understanding demands on services. There are lots of examples where that data and technology can assist but, as I mentioned, it is not really my area of expertise in terms of where that fits directly into the services plan. I do not know if Ms Wiblin has anything further to add.

Ms WIBLIN: I would only add that coming out of COVID is, like all agencies and all governments globally—what the new normal will look like is still to be played out. But the lessons that we have learned around people coming into offices less days a week or more movement in local areas—certainly data will be used daily to look at people on transport and try to understand what those patterns start to turn out to be. There is a lot of other work, not necessarily with data. There is certainly a lot of work that is happening at the moment around place making, micromobility solutions and how to reorganise on-demand services to meet more local needs. There is a significant amount of work being done also in the behavioural change spaces and our travel choices. We are doing a lot of work with councils and CBDs and other government agencies to look at revitalisation and how to build people back in and revitalise the areas. There is a significant amount of work going on across Transport for NSW at the moment focused on that very problem, and data will be used for all of it, to help inform it. But it is early days around COVID; I do not think anyone quite knows how it will settle now.

Ms JO HAYLEN: I appreciate that a lot of this is unknown and is rapidly evolving. I am someone who doesn't like working from home, it turns out. We are going to have to adapt quickly; I guess that is the challenge for Government. There are large data sources in terms of workforces, and they are the big employers, predominately in our CBDs. How closely do you work with them? Is there is a free flow of data and understanding how that is in everyone's interest?

Ms WIBLIN: As I said, there is work being done collaboratively, not necessarily with our team. We have another team in Transport, the Travel Choices team, that is actually working with large employer groups at the moment to understand the patterns that they are seeing, specifically focused on precincts as well. There is some work going on in Macquarie Park. There is some work going on in the CBD and in North Sydney at the moment to look at how people are starting to come back, what that will look like and the responses that could happen in terms of encouraging people to travel on different days or outside of the peak—all those sorts of things. To your point about how we flatten the peak so that the pattern—nobody comes in on a Monday or a Friday but everyone has to come in on a Tuesday, Wednesday and Thursday. How can we work with the employer groups to incentivise their staff to travel on different days or at different times? Some of the work overlaps with the technology teams, but there is also a lot of work being done with different teams in Transport to address that issue. Mr Clark might have more to add.

Mr CLARK: Thanks, Ms Wiblin. The only other thing I would add to Ms Wiblin's comments is that we are really working on trying to include active transport options into our trip planning. You will have seen some efforts around pop-up cycleways and things like that. We are cognisant that customers may have different preferences for how they move around. They may take different options, so giving those active transport options to customers who are trip planning is important, as well as monitoring and understanding the use of some of those pop-up cycleways. It will definitely look different in the future, I think.

Ms ELENI PETINOS: The Committee today has received some evidence from peak bodies in the disability sector. One of the issues that has been highlighted is the discussion around the need for these groups and individual users to engage with technology as it is emerging in this space, ensuring that the technologies that we roll out as Government are accessible to them and their needs. Is there anything that is being done in the department at this point in time to ensure that, as these new technologies are emerging and being considered, we are being mindful of the need to interact with people with disabilities and their peak bodies to ensure that they have the same access to the services as other people?

Mr CLARK: I might hand over to Ms Wiblin when I have said a few words. She might want to elaborate. What I would say, though, is that Transport is really committed to working with all sections of the community. I know that we do a lot of work with people with disabilities and some of those peak bodies. Examples of where we have done that recently are things around the Taxi Transport Subsidy Scheme and the rollout of the digital card for that, where we have taken input from that group. We have also invested in being able to deliver some of our trip planning via digital channels that are voice activated—for example, by using Google and Alexa—alongside our contact centres which are really important for some people in the community, and we are committed to providing some of those digital trip planners to contact central operators so that they can help those customers trip plan. It is a focus for us across Transport. Certainly, as I mentioned, in some of the areas that I am responsible for we actively consult with a whole range of peak bodies to try to improve the service delivery to a broad range of customers across New South Wales. I might ask Ms Wiblin if she has anything further to add.

Ms WIBLIN: Yes, I am happy to comment. I think it is a really important element of all the things that we do, particularly in technology. It is important to note that we are customer-led and problem-led, not

technology-led; therefore, it is really all about starting with what the possible needs are. Before we introduce any new technology we need to understand that it is suitable for everyone who uses public transport, not just a cohort who might be digitally savvy. Going back to taking time to make a decision around e-scooters and e-bikes, it certainly is about the considerations of the whole community.

We are doing some research work at the moment with autonomous vehicles, with a national study to look at what autonomous vehicles would need to have and how they would need to be able to be accessed for people with a range of disabilities, including not just physical disabilities but also people who have any other challenges as well. Fundamentally, when we are looking at any type of technology, it is probably top of the list to understand how people who are less mobile or people who have disability will be able to interact with that. If you look at the technologies—on-demand transport, for example, which is being introduced into some of the networks—there is the ability for people to book via the app, but there is also the ability for people to call in to a call centre and pay for those facilities as well. It is a key part of anything that we do. We provide services that are accessible to everyone in the community.

Ms ELENI PETINOS: I appreciate your response, but of the things that struck me today is that Vision Australia in particular, which appeared before this Committee when we inquired into electric buses, raised concerns with how those particular users would interact with the new technology around electric buses. Because they are so quiet, as you would appreciate, it poses a specific challenge for that group of people with disability. It is now some months later, and it is a new inquiry, and it is that same concern which is now being flagged that they still have. I am just wondering what we are doing to actually engage with people, to make them feel more comfortable with these technologies. I appreciate that we are doing our best to be mindful of new things as they evolve, but there are clearly things beyond apps or the need to call in that we need to be mindful of as well. I am concerned that it is something which has been raised now in two Committees by the same user group, and I am very sympathetic to their needs.

Ms WIBLIN: Of course.

Mr CLARK: I am aware that those concerns have been raised. Transport for NSW is doing a lot of work on zero-emission buses at the moment. We recently released our zero-emission bus strategy to get some consultation on that. I think that they are valid concerns. It falls a little bit outside the technology area and into the policy and regulation space. Some of that really fits into a more national agenda, but I note the concerns.

Ms ELENI PETINOS: Why is it mutually exclusive with technology, though? You are categorically ruling out that it works with technology. I am really concerned by that.

Mr CLARK: I do not think I am ruling out that there are important considerations with technology and how we make sure that meets all our community needs, and that there are important considerations that need to be taken into account in how we achieve the best possible outcomes. If you had understood that was the intent of what I was saying, it certainly wasn't.

Ms ELENI PETINOS: So you were not suggesting that it should be looked at by policy and not by a technology solution. That is the impression I got based on your response. I may have been incorrect. I would just like to give you the opportunity to clarify.

Mr CLARK: That was not my intent. As I said, there is a whole load of considerations that go with bringing new technology. Safety, customer use often has impact from a regulation and policy perspective. My note was simply that Mrs Wiblin and I were focused in technology area and, while there are policy considerations, which are important with new technology, I am not personally across those enough to be able to comment in a level of detail.

The CHAIR: I just want to pick up from what Ms Petinos said, because we heard from other groups as well—the Motorcycle Council of NSW and Bicycle NSW—who feel that they have not been consulted in the past in the transition to different technologies and spaces. They would like to have that input as well, I suppose, before the birthing stage, at that consultation stage. Do you engage with those groups much at the moment?

Mr CLARK: I am not able to give a specific answer to that because I am not across the full engagement process.

The CHAIR: You might like to take that question on notice.

Mr CLARK: Thank you. I am happy to take that question on notice.

The CHAIR: Ms Wiblin, would you like to comment?

Ms WIBLIN: Some of those programs that are run by other parts of Transport. So active transport, for example, have more carriage over bike programs than the technology team. But, having said that, the technology

team does broadly engage in terms of anything that we are bringing to market. There is typically a strategy or an approach that is put out to market for consultation. We always broadly engage. It is similar to Mr Clark's comment on the bus again. There is a European standard for the audibility of buses as well. But again it is really in the policy stage for us. But we are aware of the technology. Again, these are at, still, strategy stage for us. We are actually in market at the moment, engaging on the zero-emission bus rollout. I think we make every effort to make sure we consult as broadly as we possibly can. We try and create numerous channels for people to be able to provide feedback on all the programs that we run.

The CHAIR: It would be great if you could look at that, because the Motorcycle Council of NSW, for example, was saying they want to be able to use public transport, the first and last leg of the journey, on their bike or on their bicycle and that there should be an opportunity for them to know where there is ample space for parking at different train stations, for example, or near bus stops; that sort of information is not available to them; we are not catering for that area at all. I just wondered. What are we doing to engage and get their feedback?

Ms WIBLIN: I think we should take that on notice and come back to the Committee with a more complete answer.

The CHAIR: Thank you. Any other questions?

Ms ELENI PETINOS: Still on the same topic. Is there an opportunity for technology to address some of the policy issues that we are getting around? Is there an opportunity for technology to assist, to supplement some of these gaps? Yes, I appreciate that you are from a team that does not specifically deal with the way that an electric bus is regulated. But, if there is a challenge that is being addressed there, is there not an opportunity for technology to be considered as part of the solution?

Mr CLARK: I might ask Ms Wiblin afterwards to comment on some of the activities that are undertaken in her team. But I think, absolutely, yes, we are really keen to understand problems that exist. Customers understand problems that exist within the transport cluster. Mrs Wiblin will talk a little bit about the function that we have to help understand those problems and elaborate those and reach out and look for technology solutions. Absolutely, yes, there is opportunity for technology to help solve some of those problems. Mrs Wiblin, I might hand over to you.

Ms WIBLIN: Thanks, Mr Clark. I think it is an interesting comment from Bicycle NSW and motorcycle committees. There is a lot of work that is being done already to include a lot of the information around parking and other things in general planners to provide more information for people when they are travelling. There is an enormous amount of work that is being done with technology around journey planning and augmented reality. That allows people to be able to navigate the network more smoothly as well. We run innovation challenges. We have a transport digital accelerator, whose function is to look at these types of problems for customers. We run extensive consultations. The Women's Safety Charter, which we were involved with, brought together 80 organisations to look at how we would improve safety outcomes for women through technology. There is an awful lot of that work going on in Transport. So, yes, certainly happy to—

The CHAIR: Can I just interrupt you there. Ms Wiblin, how many focus groups have you had with Bicycle NSW and Motorcycle New South Wales?

Ms WIBLIN: Personally, I have only had a few conversations, I think, with Bicycle, but only because I am reasonably new to Transport as well. My tenure is five months. Again I am happy to come back to you with more detail about that. Certainly, around our place-making teams my understanding is that we engage quite regularly. But I am always happy, if there is gaps in our consultation, to look at that. We believe it is fundamentally important to understand the needs of our customers and our whole community. So, if there is gaps in the way that we are consulting with any groups, we are very happy to look at that.

Ms ELENI PETINOS: Ms Wiblin, can I pick up on the comment. You just touched on something which I find to be very interesting about the work you are doing, collecting data about women's safety. Again that is something that was raised in one of the submissions. Is there anything that you would like to tell the Committee about how data can be used to improve access and safety for travellers generally but specifically including women?

Ms WIBLIN: Yes. I think that is a really good point. We want everybody who travels on the network to feel safe. But there has been research that shows that, particularly, women feel unsafe or have the perception of not feeling safe on the network. So there is a range of programs that we brought in to help with that one. We have a program at the moment, a pilot that we are running with Wollongong University to look at being able to detect threatening behaviour. Essentially, we are looking at cameras and then being able to decide whether the behaviour of people is being threatening or not. That came out of the women's Safety After Dark Innovation Challenge. Also, we run a program with She's a Crowd, which was looking at developing an algorithm that could allow women to preference trips that made them feel safer. That work is being wrapped up at the moment. There

will be a report due out in the next couple of weeks in our research path based on that. Not sure if that answers your question.

Ms ELENI PETINOS: That is great. I just wanted to expand a little bit on what you said because I found it interesting. Thank you.

The CHAIR: Ms Haylen, did you have any further questions that you wanted to contribute?

Ms JO HAYLEN: My final question, Chair. Thank you. We have heard today from many enthusiastic advocates for the use of technology across different forms of transport, but we have also heard that there are circumstances where nothing beats a human. I guess I point to examples like women's safety, where women predominantly identify surveillance, the presence of staff at stations as being far preferable to CCTV or, indeed, even the opportunities [inaudible] safer journey and same from Bicycle NSW and other active transport advocates that say ultimately you can provide all the technology in the world to make sure you can hear a bus or an electric scooter coming but separating them from pedestrians and from cars is the ultimate aim. How does your section of Transport for NSW engage with other sections to ensure that the balance between technology advancement and its use and the ever-important presence and engagement of people and staff is such that safety remains paramount?

Mr CLARK: Thanks for the question. For the Transport for NSW perspective, we are really focused on customer outcomes. That is based on customer satisfaction. Surveys based on customer insight were are based on feedback that we get from our customers' voice of customer program. When we design services and infrastructure and places for the future, again there is a broad range of outcomes that we try to achieve for those. Technology is definitely playing an increasingly important role, alongside the infrastructure and the services and policies that Transport for NSW is delivering. But for us it really much fits in a framework of trying to get great customer outcomes rather than technology for technology's sake. But it does offer benefits: being able to roll out more sensors on the network, to understand vehicle movements, to be able to feed into intelligent systems, to help us improve the efficiency of both the road network and the public transport network. So I believe technology has an important role alongside trying to achieve those really important customer outcomes and plays a part in the work that Transport does.

The CHAIR: Thank you. Any further questions, Ms Haylen?

Ms JO HAYLEN: Thank you very much, Chair.

The CHAIR: Thank you. I would like to invite both Mr Clark and Ms Wiblin to make some closing comments, please, if you would.

Mr CLARK: No further comments. Thank you.

The CHAIR: Ms Wiblin. Do not let the team down.

Ms WIBLIN: We are very happy to be here. We think that this is a really important conversation. We are very proud of the work that we are doing at Transport for NSW in the technology space. Just to reinforce Mr Clark's comments, we are very much customer- and problem-led, not technology-led. At the heart of everything we do is our customers' safety and providing value-for-money solutions for customers that drive better outcomes for public transport. We get to do that with technology, but technology is not the primary focus for us. It is the people and the communities of New South Wales.

The CHAIR: Thank you. Any further questions from the Committee? Not at this point? I thank you very much for your time today and for your submission. We note your comments. We will be sending a copy of the transcript to you once that is ready. Any questions that we do send you—are you able to, once you receive them, respond within 21 days? Is that acceptable? That is an affirmative from both witnesses? Thank you very much. Thank you very much for your time this afternoon.

(The witnesses withdrew.)

The Committee adjourned at 15:21.