T R A N S C R I P T

LEGISLATIVE ASSEMBLY ENVIRONMENT AND PLANNING COMMITTEE

Inquiry into Environmental Infrastructure for Growing Populations

Melbourne—Tuesday, 30 March 2021

(via videoconference)

MEMBERS

Sarah Connolly—Chair
Mr David Morris—Deputy Chair
Mr Will Fowles
Ms Danielle Green
Mr Paul Hamer
Mr Tim McCurdy
Mr Tim Smith

WITNESSES

Associate Professor Melanie Davern, Acting Deputy Director,

Associate Professor Andrew Butt, Associate Dean of Urban Planning, Convener of Planning and Transport in City Regions, Centre for Urban Research, and

Mr Thami Croeser, Research Officer, Interdisciplinary Conservation Science Research Group (ICON), RMIT University;

Dr Ian Woodcock, Senior Lecturer, Urban Design, and Course Director, Architecture and Urban Design, School of Design, Swinburne University of Technology;

Associate Professor Jenny Veitch, National Heart Foundation of Australia Future Leader Fellow, Institute for Physical Activity and Nutrition (IPAN), Deakin University; and

Mr Paul Farley, Executive Director, Infrastructure and Operations, and

Mr Simon Barnes, Director, Planning and Business Services, La Trobe University.

The CHAIR: I advise that the sessions today are being live broadcast on the Parliament's website. Rebroadcast of the hearing is only permitted in accordance with the Legislative Assembly standing order 234. Thank you for joining us here today at this public hearing for the Inquiry into Environmental Infrastructure for Growing Populations. On behalf of the committee I acknowledge the traditional owners of this land, and we pay our respects to them, their culture, their elders past, present and future and elders from other communities who may be joining us today. I also extend a very warm welcome to members of the public and the media who may be watching us today.

This is one of several public hearings that the Environment and Planning Committee will be conducting to inform itself about the issues relevant to the inquiry. Now, before we begin, I need to point out a couple of things to you. All evidence taken today will be recorded by Hansard and is protected by parliamentary privilege. This means that you can speak freely without fear of legal action in relation to the evidence that you give; however, it is very important to remember that parliamentary privilege does not apply to comments made outside the hearing, even if you are just restating what you said during this hearing. You will receive a draft transcript of your evidence in the next week or so to check and to approve. Corrected transcripts are published on the committee's website and may be quoted from in our final report.

I want to say again thank you so much for taking the time out of your busy schedules to join us today and to speak to us. Can I remind all members and witnesses to mute their microphones when not speaking to minimise interference. What I might do to kick things off is introduce the members of the committee. There are a couple of members that are going to join us a little bit later as time goes on. My name is Sarah Connolly and I am the Chair of the committee. I am also lucky to be the Member for Tarneit. For those who have not been out to Tarneit, Tarneit is in the outer west, and it is actually sitting inside one of Victoria's and Australia's largest growth corridors. Paul.

Mr HAMER: Thanks, Sarah. I am Paul Hamer. I am the Member for Box Hill.

The CHAIR: Will.

Mr FOWLES: Thank you, Chair. Apologies for the lack of video for the moment. I am Will Fowles. I am the Member for Burwood, which includes parts of Camberwell, Glen Iris, Box Hill South, Ashburton, Ashwood and of course Burwood.

The CHAIR: So what that essentially means is that you have got one westie here on the committee with us today and the others are from the eastern suburbs. Can I get you to start by introducing yourselves. Maybe just say your name and where you are from, and we will go around the room. We will start with Associate Professor Melanie Davern, so we will go to the RMIT Centre for Urban Research.

Assoc. Prof. BUTT: Mel is not here until later. I think she is joining the meeting in a bit. I am Andrew Butt. I am the Associate Dean of Urban Planning at RMIT and in the Centre for Urban Research, and Mel Davern is coming later on this morning. I can quickly introduce myself and the centre, if you like?

The CHAIR: Yes.

Assoc. Prof. BUTT: I am the Associate Dean of Urban Planning at RMIT, and our teaching and research centre, our Centre for Urban Research, has a couple of submissions in here. One is from a particular research group, the Interdisciplinary Conservation Science Research Group, and one from the broader centre. We are a research centre that looks at urban transport, healthy cities, research and broader issues of urban greening.

The CHAIR: Wonderful. Thank you, Andrew. I will throw to RMIT's ICON.

Mr CROESER: Hello. My name is Thami Croeser. I am an urban planner at RMIT , and I work within the ICON group as a planner of urban environmental infrastructure. ICON is the Interdisciplinary Conservation Science Research Group, and what we do is that we are a bunch of urban ecologists, so hopefully we can bring you a biodiversity angle today.

The CHAIR: Thank you, Thami. Swinburne—we are waiting on. Deakin.

Assoc. Prof. VEITCH: Hello. I am Associate Professor Jenny Veitch. I am from the Institute for Physical Activity and Nutrition at Deakin University, and we conduct research into physical activity, obviously, and nutrition for the population. Thank you for the opportunity to be here today.

The CHAIR: Thanks, Jenny. We have got La Trobe.

Mr FARLEY: Good morning. My name is Paul Farley from La Trobe University. I am the Executive Director, Infrastructure Operations—that is, I am responsible for the physical assets of the university.

Mr BARNES: I am Simon Barnes.

The CHAIR: Okay, Simon. Thank you. We have just had Ian join us. Ian, we are just introducing ourselves. Would you like to introduce yourself on behalf of Swinburne?

Dr WOODCOCK: I am Ian Woodcock. I am course director for the master of architecture, master of urban design and master of architecture and urban design here at Swinburne University. I am also a member of the Swinburne Smart Cities Research Institute. And so I am presenting a submission today on behalf of myself, Professor Jane Burry, Professor Mark Burry and Professor Marcus White, who are all members of the Smart Cities Research Institute and the School of Design here at Swinburne.

The CHAIR: Wonderful. Thank you. I know that you would all have the agenda in front of you today. What I thought was that in some of the past hearings we have been doing over the last couple of weeks it was really great once we got into the discussion and members were asking witnesses questions. If things are going well and everyone is happy, we might try and even push through morning tea, but if anyone needs I guess a toilet break or anything, then feel free to switch off your video or just let us know and we can pause. That is no worries at all.

I know that all of you have put in some really great submissions. What we are asking witnesses to do is present to us a 5- to 10-minute presentation. You may have prepared PowerPoint slides. Do not stress if you have not. We are more than happy to just have a sort of verbal overview of your submission and anything extra or additional that you might want to tell the committee. After we go around the table and have heard from all of the witnesses, members will then do a bit of Q and A and ask you some questions. We might kick off with RMIT, so Andrew.

Assoc. Prof. BUTT: We actually forwarded some slides, if that is all right. Are they able to be shown?

The CHAIR: Yes.

Assoc. Prof. BUTT: Thank you very much.

Visual presentation.

Assoc. Prof. BUTT: I will just start by saying that you have obviously got our submission, but the main issue we really wanted to raise was that link between environmental infrastructure, particularly as a vital urban asset, and the way that has implications for health and livability. I think we were acutely aware last year the way that really showed some of the vital aspects of that, particularly when people were more focused on living in their own local environments a little bit more than previously. So we really were trying to set some recommendations whereby there was a clear agenda in planning for new places, that there was a notion that the environment is part of a social infrastructure package; it is part of an urban infrastructure package. I can see a spelling mistake, so I will just quickly flick the first slide. If you can move one slide forward. If you can just sort of get them all up. I did not realise that it has got stagger issues.

Basically, in summary, we were keen that we looked at the notion that environmental infrastructure was actually about our environment, not just as a public asset but private assets as well. So a lot of research that we have been undertaking at the Centre for Urban Research, particularly looking at sort of urban landscapes and urban greening, indicates that the relationship between public and private land, particularly in cities like Melbourne but also in other regional cities and even in smaller communities, has come under some stress when we think about urban greening particularly in an era where we are seeing housing growth, urban densification and those sorts of issues. We are losing the connectivity and the relationship between urban greening in the private realm, on private land, as well as the emphasis that we need to actually understand that there are multiple benefits from the urban environment, if you like, that crosses between urban parks and private land and that there are multiple benefits from that, which I think is probably what largely leads to this inquiry in general—that nature biodiversity, ecosystem services and public health are all interrelated in this respect. Some of those are about ameliorating impacts of suburbanisation, urban transport, air quality and those sorts of issues. Some of them are about physical activity and mental health and some of them of course are about thinking through what nature looks like in cities. Nature and biodiversity in cities—regional cities, metropolitan cities—can be quite complex. They are often hotspots for rare and threatened species and they are quite novel habitats—you know, species living in unusual ways—but also they serve a great range of human health implications.

The second is that we feel that there is a sense that there needs to be clear monitoring and measuring systems. When we think about population growth, we think about particularly urban expansion and the precinct structure planning processes on the fringes of Melbourne. And increasingly, as I understand it, groups like the VPA are looking to get more involved in urban expansion in regional Victoria. We need to actually measure and monitor the impacts of urbanisation and we also need to measure and monitor the impacts or the benefits, if you like, of particularly the reservation of land but also design within the private realm for what sorts of benefits it is actually providing. Some critical issues here are about urban greening and urban shade and climate responsive urban greening and urban shade. We know that urban shade is a major factor in many Australian cities, and in Victoria, particularly northern Victoria, it is a really critical issue for people's physical activity for much of the year and becoming increasingly so. So that element of design to build multiple benefits and seeing this as infrastructure that provides multiple benefits are, I suppose, clearly what we are emphasising here.

The last recommendation I suppose is that we monitor and understand the way these cross-sectoral benefits have different outcomes in different places. For example, we are doing some work at the moment on scenarios for urban greening in Melbourne's west as part of a project with the Western Alliance for Greenhouse Action, and it is quite evident that in many new communities but also some older communities in parts of Melbourne's west the quality of green infrastructure in particular, or urban greening—trees, if you like—is diminished in urban environments. There are significant areas where there are poorer quality urban environments because of that, and that has implications for people's physical activity, their use of the streets, walking and a range of other implications that have health benefits.

If we can switch to the next slide, and then again; please flick through them, sorry. Consequently we are very keen—this goes to some of Mel's discussion that she might be able to answer later on when she joins us—and we think that we really need to purposefully plan for environmental infrastructure, name it and understand it, and understand that it is something that has multiple benefits and that it is not just something which is an adjunct on some public land but rather is part of the urban environment across all sorts of tenures and all sorts of ownership patterns.

The second is that we think that we need to have good data about this. We know that the state government has data on public land, parks and reservations, but the quality of those experiences in those places is not always as well mapped. There are examples like the Australian Urban Observatory, which Mel Davern is the director of

and which as a database really tries to look at how people move about environments and how they have access to urban greening as one aspect of what it does, and I think those sorts of models—there are others; I know other people in the room here will talk to those—really do point us in the direction of how we actually might understand the quality of the urban environment and therefore the need for and provision of environmental infrastructure.

We want to have a very clear sense that the provision of environmental infrastructure and quality environmental infrastructure, as it exists and as it might exist, has implications for public health but also has implications for urban biodiversity and that those things cannot be disconnected. They cannot simply be seen in silos, just as we cannot see environmental infrastructure as siloed between public and private land. And we think that the Victorian planning provisions and the precinct structure planning guidelines and other mechanisms for urbanisation and urban development really need to have very clear understandings of what environmental infrastructure in urban environments can do for human health, for biodiversity in nature, but also for urban shade and urban cooling. We need to really get serious about urban cooling in a lot of Victoria's urban environments. And so those sorts of outcomes really need to be part of precinct structure planning, part of the growth areas infrastructure funding models, as they exist, and the infrastructure funding models that are rolling out into regional Victoria at present, or are to be, also need to include those. There needs to be some serious thought given to how we make sure that we establish and maintain quality environmental infrastructure.

I think there is one more slide there. One really clear issue that we thought about—and this goes to a lot of other work that we have been doing on particularly greenfields urban developments around Melbourne and elsewhere—is about that idea of who pays for it and how it is delivered in a timely manner. Obviously a lot of environmental infrastructure, particularly in, for example, areas like Tarneit and other areas of grassy woodland and the like and longstanding agricultural environments, needs some establishment for the sorts of qualities we are talking about. That takes some time. But I feel that like lots of other issues around the provision of transport and other infrastructure it needs to be built in and considered as part of the process from day one, and it needs to be costed, hence our focus on things like the growth area infrastructure contribution model and the idea that really it needs to be seen as part of that broader target for a city that is meeting sustainable development goals, for a city that is actually providing health and wellbeing benefits and biodiversity benefits in ways that we really have not for some decades. So that is our summary of our recommendations, and thanks for the opportunity to provide it.

The CHAIR: Thanks, Andrew. I am going to have so many questions for you on the work that you are doing out here. We are going to go to Thami.

Mr CROESER: Hello. No slides from me, and I am going to try to avoid covering things that we have talked through a bit. We have just got three points that we want to talk to you about from ICON's perspective. The first is urban forestry. So we at the beginning of this process were not certain that tree canopy was a significant part of the scope, and it sounds like it is, so we are delighted about that, because I suppose it is just as important that with the new parks and environmental infrastructure of that type that is being created you are able to take your child by the hand and walk to that park under shade. So we hope that we will see lots of tree planting as a result of this inquiry, but what we want to emphasise, I suppose, is that there are a few more things to urban forestry than just planting lots of trees. So tree retention is a really critical area. We have looked at the City of Melbourne's progress recently through the development boom as the CBD went up rapidly. Through their guidelines, which they have got, which they use to protect their trees, they managed to stay on top of losses of trees, just on top, but in terms of tree canopy they went up slightly through that development boom. So those guidelines are really promising.

But the big frontier, which I am sure you have had acknowledged a lot, is retention of trees on private land, and there has been really interesting research come out on that quite recently—about retaining trees on private land. And what we want to emphasise is that it is not just a matter of planning regulations, which are useful, but also public education, because when people see trees as a threat or a nuisance they are more likely to just casually remove them than if they see them as a valuable asset. So retention is critical.

The other point we think is so important to have in the scope, and it is going to sound a bit technical, is tree establishment and health. The way we sometimes do trees still is: you cut a 1 metre by 1 metre square in the footpath; underneath that hole is crushed rock, which is not a great substrate; you drop a tree in; you put some soil on top of that; and good luck to the tree. What you see often as a result is that the tree does not establish well—the trees either die or they grow very slowly. But there are really well demonstrated ways to get better

tree growth outcomes to ensure trees grow quickly and you do not have to replace them every couple of years. So if we can include things like standards that support the creation of soil volume, the creation of infiltration so that trees actually get a bit of water when they are growing, these things can help us ensure that we get that tree canopy that is such an important environmental asset. So retention and establishment as well as planting lots of trees is our emphasis for the urban forestry point.

Now, I said we are an urban ecology lab, so biodiversity is the big point we want to push—and it is a simple one: if we are going to be putting in new streetscape greening, if we are going to be putting in new parks, let us do them in a biodiverse way. That is not just because we have got conservationists in our lab and there are lots of threatened species in our cities that need habitat; it is also because when you do a park in a biodiverse way it is better for the people that use it. Studies have shown, for example, that when you are in a park that has a bit of layering—it has got understorey, there are flowers, there is a diversity of trees, you can hear things like birdsong—those parks are much better for our mental health than just a dead simple few trees, monoculture and grass. So that layering is useful. But things like our immune systems also benefit when we are exposed to a greater diversity of species in spaces that we visit, so there are health benefits. But a park that is biodiverse is also just a greater attraction. Getting people out and using these spaces is part of the challenge, and if you can have a park where people are able to hear birds, see flowers, experience nature, that is an important part of the infrastructure delivery, we think.

So there is all the health stuff that is beneficial when you do parks in a biodiverse way, but from a culture and identity perspective, we would argue that it is quite important as well. So when you, like I did this morning, go for a walk and you see a flock of corellas land in the middle of the street and they are all screaming at each other, you are reminded that you are in Victoria, you are in an Australian city. You build that sense of belonging as the seasons change, as colours change, as flowers emerge. That can be part of our connection to our neighbourhood, and in the wake of COVID our neighbourhoods are more important than ever. So that cultural sense of belonging can be supported by showing us Victorian nature in the Victorian spaces in our cities.

But if we do really well, we can take it further and it can actually be part of our reconciliation journey, because of course the people who were here first have stories for many of these species. The people who were here for tens of thousands of years know the names of species in different ways. If we can start learning that and have that as part of our day-to-day experience of nature in cities, we can get closer to the full history of the cities we live in. Now, maybe that sounds quite high mind and esoteric, but when it comes down to it practically, we are not asking for anything radical or extremely difficult. I have got a park down the road from me where they do have biodiversity areas, and you are talking about putting in a bit of understorey, some shrubs, choosing a greater diversity of plants, having a greater diversity of trees, maybe picking some of those trees to be good habitat for birds. These things have been done in Melbourne cities; we can do them more. One of the perks if we do do it is that not only are these more climate resilient and more able to handle things like dry periods, but there might actually be lower maintenance in some cases too, because, for example, you are not mowing as much lawn area. So there are lots of reasons there, I hope, that are compelling to do our new environmental infrastructure biodiverse.

The last point we really wanted to emphasise is: please do not reinvent the wheel. There has been so much good work done already. There has been so much good analysis done already on how to do this stuff well. I am going to talk briefly about some specific tools out there. For example, in our growth areas, Melton is the first local government in Australia, we believe, to require passive irrigation of new street trees. So just a simple slot in the kerb is required when you put in a street tree. That means that tree gets watered every time it rains. Studies have shown that when you do that trees can grow up to twice as fast. That is a really simple tool just in one local government that we could replicate. In infill areas, which also have grown so rapidly, there is lots of innovation going on as well. So the City of Melbourne has developed a green factor tool which has been used in cities like Seattle to require certain amounts of green wall and green roof, and some of these cities have been very successful at creating hectares and hectares of green roof space through these kinds of policy instruments. They are there, they are ready, we can take them. Of course part of the challenge is replicating them; part of the challenge is actually having the resources in councils, which are currently rate capped, to have the enforcement capacity to make sure they happen. Our understanding is that some of the existing implements in the planning scheme that should be promoting environmental infrastructure are not always happening simply because councils do not have the capacity to enforce those changes when developments happen. So those are some of the specific options.

At the higher policy level we have also got a lot of work done, and I think it is a matter of just filling in and implementing that. For example, the *Living Melbourne* strategy is an excellent document. It sets out a lot of really key things for street trees and trees generally; the actions are specified. We understand that the Melbourne *Open Space Strategy* will perform a similar function and has that broad, thematic stuff down. So we do not need to go into a whole new set of visioning, a whole new set of analysis. Instead what we urge is that you get down to the specifics: take these visions, take the strategies and actually get down to where specifically on a map we need to catch up with environmental infrastructure, program out where those streetscapes are going to be done and when they are going to be done over the next 10 years, how we are going to actually deliver things on a time line and who is going to do it, whether it is going to be a state government task force, whether there will be additional grants for local government to build up their capacity, and vitally at the end of it all, how it is going to be paid for. So a steady, reliable budget that we know can actually fill in and help us catch up on those gaps is a vital key. That is our third point—just focus on the specifics, use the policy we have got and do not reinvent the wheel.

That is it for us at ICON Science. Thank you.

The CHAIR: Thanks, Thami. I will throw over to Ian, Swinburne.

Dr WOODCOCK: Is somebody going to operate my slides for me?

Visual presentation.

Dr WOODCOCK: Great. Look, building on things that everybody else is saying, I do not think there is going to be much disagreement or any disagreement between any of us today, I would imagine, and I would certainly echo a lot of what my colleagues at RMIT were saying in that a lot of the answers are already there and they have been around for quite a long time; it is just a question of doing them. Of course being a design school, a lot of what we are talking about really here is design solutions to things that planners have been working on for years. I have stuck some images up the front there to kind of draw people's attention to the fact that these things are actually happening, even if only in fairly embryonic form at the moment, and some of them have been hastened very much by COVID.

Next slide, please. Basically it is just an outtake from our submission where we basically respond to the terms of reference in the review. This is a summary of the statements that we have made. It is very short and pithy. The benefits have been well established in terms of accessing and using different types of environmental infrastructure. We wanted to stress the fact that I suppose the idea of just green space and trees and the more classic, stereotypical idea of what the issue might relate to is a much more complex and interrelated issue across the entire spectrum of what you might call urban and private urban space. It is really about connecting all of those things together so that people get more active exercise—they walk more, they cycle more. They are encouraged to do that because they have the safe space to do it in public space, and it is space with a high level of amenity drawing from being well shaded. You take those fairly simple, easy to say things, but of course until now they have not been particularly easy to implement.

Moving on to the next slide, one of the issues related to population growth in urban areas of course is increasing density, particularly in the inner suburbs and a little bit in some parts of the middle ring. And of course the lack of provision of those sorts of spaces, as in public open space—the more traditional parks, greenery, but also streets that have a good level of amenity, a high level of amenity for active transport—is the issue. Of course that is where most of the conflict is going to be in terms of implementing policy that people have been talking about for a very long time. As Thami and Andrew were saying, this is not rocket science, it is not new. We just have to get ourselves some political commitment to turn the *Titanic* around—I should say the *Ever Given*—and the settings around to actually implement these things and make our inner-urban areas and middle-ring areas into an appropriate kind of—I do not know. How do we actually make them so that they are fit for purpose in a place that is getting warmer and hotter and more extreme in terms of weather events, but also that are usable in the ways in which all the research says it should be?

One of the key things I want to stress about this is the issue of diversity—not only biodiversity but social diversity in terms of the kinds of uses that need to be provided for. I mean, you know, we are thinking about how there are so many different ways in which genuine public space can and needs to be used in order to encourage it to be accessible to everybody at all times of the year and at all times of the day and night, for it to be safe and enjoyable, but also to bring about the kind of behaviour changes that are needed in order for people

to access the benefits of this rather prosaically named environmental infrastructure. I do not know if anybody on the panel has been to Prahran Square. There has been a lot of discussion about it because it is new, and all new things in Melbourne seem to be very controversial. But I would say everybody on the panel should go and check it out and have a look at it, because it is something new for this city. We may need to explore how we can provide the sorts of things that have been done at Prahran Square for a lot less than $80 million, but what it is actually trying to do there in terms of replacing a car park with genuine public space. There are many, many opportunities to do that, and it is something that we should really look at very seriously now that that has been created.

Next slide, please. The sort of mapping that the RMIT people were talking about in terms of, 'How do we actually make sure that there are adequate types of different types of open space and green infrastructure within a walkable and cyclable distance of everybody?', is the sort of stuff that has been done by some local governments. For example, this is a map from Surf Coast shire's Lorne open space strategy, where they have applied these principles. This map was done quite a long time ago. Having identified the gaps, the council has gone out and applied its capital funds to purchasing lots of land. All of them at the time were originally zoned mixed-use, they had proposals for apartment developments on them and some of them were zoned up to six or seven storeys high. The council has said, 'Oh, well, these are actually in areas that have been defined under the policy and identified under the policy as lacking in open space', so the land has been purchased by the council and they are going to be turned into new parks and open spaces. Some of them are nearing completion as we speak.

Next slide, please. Here are some before and after renders of the sorts of things we are talking about for these kinds of spaces. As a long-time resident of this part of Melbourne, I can say that they are relatively small spaces, but once they are there, they make an enormous difference to the social life of the neighbourhood. They are extremely well used by a very large number of people, and they encourage people to be able to live locally, to be able to work locally—supporting all of that working from home that has been going on in these former blue-collar, now white-collar suburbs, so they are very important interventions. It is good that we have got actual examples of how this can be done. It proves that it is feasible. I am sure if someone wants to go and survey local residents about whether they think they are a good idea or not, if such were necessary, they would find that they are.

Next slide, please. This is just another example of the same thing. Of course, these are showing you that they are not cookie-cutter solutions. There is a fair amount of community consultation that goes into each one and of course you get a whole kind of community building exercise that goes on with such place-making exercises, and all of these add to the sense of local identity and the ability to bring local, native vegetation, flora and fauna back to these neighbourhoods, which have for many years been fairly treeless, so there are really good opportunities for that.

Next slide, please. One of the questions that we were asked to address was the issues to do with the kinds of delays caused by current legislation and planning provisions. We have seen, thankfully, under COVID—not just in Melbourne, in other cities around Australia—how local and state governments have managed to somehow overcome the inertia in the planning scheme to implement the sorts of things that many urbanists have for many years been saying: 'Look, this works in Paris or Barcelona or somewhere in South America or various parts of the world, why can't we do it here?'. So temporary urbanism, tactical urbanism, pop-up urbanism—whatever you want to call it—has demonstrated its worth. We need to keep going with this, to roll out cycle lanes, street tree planting, street furniture—all of the above that everybody here I suggest suspects that I will be arguing for. We have shown that we can do it. We just need more political will.

Next slide please. Really it seems that the impact of COVID has really shown us in many areas the urgency of these things, because it has redistributed the living and working patterns of very large numbers of people and it seems that this is going to continue—the working from home phenomenon is going to continue for quite a long time. If and whether things will ever return to normal is very much an open question.

In terms of things like *Plan Melbourne*'s 20-minute neighbourhoods policy, I would say it is a godsend actually because it is showing the value. Millions of people around urban Australia are now re-engaging with the places that they live in in a completely different way, and they are having those sorts of new associations with places Thami was talking about earlier on. By being out in public space, even if it was just to get a COVID exercise or whatever, they have formed new connections with those places and are actually valuing the fact that whatever is in their space is there, and also this is showing up the necessity of doing something to make those places

more attractive, amenable, beneficial, safer for cyclists and walking and for kids and so on, all of those things. I can only really stress that COVID is really accelerating the demand and the pressure to do all of those things that you are talking about, and it has also shown us that we can. It has given us a number of working models as to how we can do that, and let us hope that we do not lose the momentum.

Can I have the second-last slide, or last slide, please? Here are four links or whatever for some examples that I imagine many of the academics presenting here today will be familiar with. I have not got any slides linked from this. I have probably used up my 5 minutes, but I would encourage members of the panel to take the time to follow those up. Thank you very much.

The CHAIR: Thanks, Ian. I notice some really interesting park designs are there. I am going to throw over to Jenny.

Assoc. Prof. VEITCH: Great. Thank you. Is it possible if I can share my screen because I have not sent you my slides; is that okay?

The CHAIR: Should be fine.

Assoc. Prof. VEITCH: Okay. Great.

Visual presentation.

Assoc. Prof. VEITCH: I am a behavioural epidemiologist and Heart Foundation Future Leader Fellow, and my research focus is on understanding the role of parks in providing opportunities for physical activity and social connectedness across a life span, so I am very pleased to be able to join the discussion today. Globally parks are a critical setting within every city. Visiting parks has been shown to provide positive physical health and mental wellbeing benefits. Parks can reduce social isolation and are crucial for fostering a sense of community. This has never been so evident as during the COVID pandemic. Access to high-quality parks is vitally important for our health and wellbeing. Today I am going to focus on the role of parks in promoting physical activity.

Physical inactivity is the fourth highest cause of death and is responsible for more than 5 million deaths per year globally. Currently in Australia about 70 per cent of children and adolescents and 60 per cent of adults do not do enough physical activity according to government guidelines. Therefore it is critical to increase opportunities for people to be active. Parks can do this by providing supportive infrastructure such as open spaces, walking paths and playgrounds. Parks can also encourage people to use active travel such as walking and cycling to get to parks or as a thoroughfare when using active travel to reach other destinations. Research has shown that people who visit parks are nearly three times more likely to meet physical activity guidelines compared to non-visitors.

Despite the many benefits associated with park use, park use is generally low and most people who visit parks engage in low levels of physical activity during their park visit. Visitation is particularly low among certain subgroups of the population like adolescents and older adults. An observation study we conducted showed 7 per cent of park visitors to be adolescents and 16 per cent older adults, with about 67 per cent of both age groups observed engaging in sedentary activities like sitting and standing when they were in the park. Similar results have been observed internationally. So it is critical that our parks are preserved and designed to encourage active use, and importantly that the needs of all age groups are catered for when designing our parks.

Our Life at Home Study was a study that we conducted in IPAN that examined park use during COVID. Thirteen to 75-year-olds across Australia reported on their behaviours in a usual week in February 2020 pre-COVID and then in a usual week in April-May 2020, which was during the first lockdown period. We found that those who visited parks in April-May visited more frequently and spent about 30 minutes more per week than they did in February, and overall from over 1000 participants about one-third considered local parks to have been an important place for them to be active during the lockdown period. However, 72 per cent said that local parks did not have affectors or amenities to encourage them to be active during COVID. This is a really important finding, and that suggests that much more needs to be done to improve our local parks to meet our residents' needs. The increased use of parks has been a really positive outcome from COVID. It is therefore critical to maintain this higher use. We need to invest in our parks and upgrade our parks now so they continue to appeal to all users post COVID.

In our submission we included nine recommendations. These focus on the necessity to preserve green space in existing neighbourhoods and allocate green space in new neighbourhoods. Parks must be protected from inappropriate development. Our second key recommendation was about the location of parks. They need to be in close proximity to people regardless of where they live. Ideally they need to be continuous, linked together and lead to destinations and support thoroughfares for walking and cycling. Importantly, parks need to be of a high quality. We need to ensure that parks meet the needs of all demographic groups. We need to invest in upgrades to enhance park features and amenity and plan for ongoing maintenance. We also need to ensure that we engage with community to discuss issues around availability, accessibility, design and quality and install safe walking and cycling paths to support active travel and reduce car use. Finally, we recommend development of partnerships between academics and industry stakeholders to ensure that our research evidence is readily available and used in park design.

Today I will profile some examples of our research that provide evidence to support these recommendations. Firstly, I would like to describe a study that highlights the potential value of investing in park upgrades. This study was called REVAMP. It was a natural experiment that examined the impact of a playscape installation in a large park in the west, in Brimbank City Council, which is in a low socio-economic status area. Natural experiments are important as they provide evidence on how changing the park environment impacts people's use of the park compared to a control park. This type of evidence is critical to inform future planning. Briefly, the images here show the park prior to refurbishment, and here are some images of the nature-based playscape that was installed. We examined park usage and park-based physical activity before and after the upgrade. Just some very high-level findings: overall visitation in the park increased by 176 per cent relative to the control, and physical activity in the park increased by about 119 per cent, also relative to the control. We performed cost-effectiveness analysis and found that it cost about 58 cents to gain 1 hour of activity per park visitor.

Why is this important? Well, it provides evidence that there is an opportunity to increase both park use and park-based physical activity through park refurbishment. It also provides evidence that the new playscape was a cost-effective way to increase levels of physical activity. It has been shown for physical activity interventions that anything that costs between 60 cents and $1.30 is considered cost effective. This is important as little is known about whether park refurbishment is an efficient and cost-effective way to increase physical activity and cost-benefit plays a key role in decision-making, which is important given competing priorities for funding. This evidence also highlights that the features and infrastructure within our parks are critical. It also raises the important question: what features are most important for different age groups?

The next study I would like to profile was a large study designed to understand preferred park features for different age groups. It supports a recommendation to create high-quality parks that meet the needs of all demographic groups. It was called ProjectPARK and examined the importance of park features for encouraging park visits and active and social park use among children, adolescents and older adults living in Melbourne. We walked through the park with participants to gain an in-depth understanding of important park features. We asked them to rate images of park features and perform tasks to identify the relative importance of park features, and we did this with children, teens and older adults. We also conducted interviews with stakeholders to understand how to translate this evidence so it can be more easily used by park design teams. We identified that preferred features varied greatly by age group. You can see here that, for example, for children the most important features were about adventure playgrounds and challenging play equipment—obstacle courses, for example, and climbing structures—whereas for teens the most important features were cafes, swings, grassy open spaces and sports courts. For older adults, apart from walking paths, the most important features were all about the amenity—it being peaceful and relaxed, with shady trees and birdlife.

Why is this important to the inquiry? Well, we identified features that should be prioritised in park design to optimise active and social use. We identified features most important for each of the different age groups and that preferences for features do vary by age group and gender. These features need to be included in future park design to help create high-quality parks.

I would like to finish by saying that we have created resources that will help with the inquiry. The resources are based on research conducted in Melbourne. They are available on the IPAN website. They include, for example, a brief video, infographic and summary report from REVAMP showing the impact of investment in park refurbishment and also infographics outlining the top 10 features for encouraging park visits, activity and social connection for children, teens and older adults from ProjectPARK. Thank you very much for the opportunity to speak today.

The CHAIR: Thanks, Jenny. To finish off we have got Paul and Simon from La Trobe.

Mr FARLEY: Good morning. Thanks for the opportunity to appear. La Trobe University has a number of campuses across Victoria. We manage large swathes of infrastructure, including environmental infrastructure, in both fast-growing northern suburbs and across Victoria in Albany-Wodonga, Bendigo, Mildura and Shepparton.

When we think about universities we immediately think of places of excellence for learning, teaching and research, which is of course the core mission of La Trobe, but what I wanted to touch on today is another role that we play that can be a little bit forgotten. Universities—La Trobe in particular—sit on strategic areas of land across the state, and we are managers of environmental infrastructure in our own right. There is no coincidence that when look at La Trobe University's Act it is our founding mission not only to serve the community of Victoria for the purposes of higher education but also serve the community of Victoria for the social and cultural benefits of all Victorians and wider Australian and international communities.

One of the key ways we are fulfilling this objective is opening up our campuses for wider community benefit. For example, in Bundoora, La Trobe's campus provides infrastructure, services and facilities and benefits that are used by the wider community. We have an eco-corridor called the Nangak Tamboree wildlife sanctuary, which I will come to in a moment. We have several waterways and pathways, the La Trobe Sports Centre and our sports park, to name but a few. All this is closely linked to a long-term plan for—somebody mentioned 20-minute cities—a university city of the future, which will see La Trobe's community programs and facilities with a focus on investing into the community and our campus and growing our presence with the community.

There are a couple of slides. I am wondering whether the first slide could come up, please.

Visual presentation.

Mr FARLEY: This is to give an example of significant acreage that we manage in Bundoora. This is our 2014 master plan. It is a huge metropolitan campus; it sprawls over 235 hectares of land. It is actually larger than Melbourne's CBD. Much of this land is urban bushland. Green space amounts to about 30 per cent of the campus and is managed and maintained by La Trobe for the benefit of on- and off-campus communities, and we provide a significant conservation role. In more ways than one, we manage the area the size of a municipality and have similar challenges, whether it is flooding, water catchment, species conservation. For instance, we play a key role in both local and regional stormwater treatments. We manage the flow. You can see the chain of ponds that come down through the campus there. We manage the water flow into Darebin Creek, aiming to slow it down to avoid flooding. We have been flooded a few times in the past. Our aim with this chain of ponds as well is to make sure that the water comes out a lot cleaner at the bottom than when it has gone in.

Talking about healthy communities, we are hoping to get more people to come onto our campus and use our resources. Here are just some facts and figures around this. Our sporting facilities had over 300 visitors in 2019. In early 2020 we completed stage 2 of our $18 million sports park, to which we had a contribution from the City of Banyule of $5 million. This houses a significant number of community teams. We actually host 26 affiliated clubs in our sports park. We also host over 11 000 school students from over 30 schools. Our water safety program assisted over 3000 school students in 2019. The university also houses a significant artistic collection. We have a sculpture park that features work from every decade since the establishment of the university in the 1960s. This is just a sort of small example of the types of infrastructure that we offer. We are hoping that it is evident that these numbers provide very significant benefit well beyond our immediate community, staff and students. Our ambitious plan we announced in 2018 is to create what we call a university city of the future.

Now, if we could go on to the next slide, please. From an environmental infrastructure perspective, what you are looking at there is the Nangak Tamboree. We have an eco-corridor and a wildlife sanctuary. I think the wildlife sanctuary used to be a cricket pitch until we converted it. We did a broad consultation program and the name Nangak Tamboree came about with consultation with university elder Aunty Joy Murphy and campus tenants. We came up with the name Nangak Tamboree, which means respecting, sharing and looking after the waterways. As you can see, this just forms part of Darebin Creek, which flows through the campus. The large mass you see at the top there is a 30-hectare sanctuary open to the public and managed by La Trobe, which we get a lot of public benefit from. It is home to 266 animal species and 588 plant species. As I said, it was

formerly—it says 'Farmland' here, but it was actually a cricket pitch. This conservation success story has been transformed into a significant biodiversity and conservation zone over the past five decades and is a regional centre for community consultation. The sanctuary not only supports unique biodiversity for the area but also supports community engagement. In 2019 we had nearly 13 000 visitors, including 4400 students, and 66 schools came on site. We have over 300 community volunteers who support weeding, propagation and environmental activities. In 2018–19 we also built a predator-proof fence that goes around it so we could reintroduce threatened species, and we continue to work with partners like Melbourne Zoo on joint initiatives.

We have an onsite indigenous plant nursery, so we propagate 300 species of local plants for sale to the community as well quantities of plants for local authorities. In 2020 we provided 8000 plants to the City of Darebin to support its Darebin urban forest project, which I understand Darebin briefed you on last week, and we have 100 000 plants in production. Our Bundoora campus also hosts the Kingsbury market each Sunday, which we provide at cost to the community and to the thousands of people that visit every week.

With a campus this size, we would like to provide more community infrastructure. We have an ambitious plan to build what we call a tan track for the local community, and we have got this about two-thirds complete. We would love to provide a regional children's park on campus to further activate our campus and provide a resource to our community, especially on market day. We have also invested significantly in lighting and security camera upgrades across hundreds and hundreds of metres of pathways through our campus and through the Nangak Tamboree so our community can enjoy the natural amenity—and it is really important to be in a safe and secure environment.

Our commitment to manage and develop environmental infrastructure and to adopt a master planning approach is not only limited to Bundoora but also applies to other regional campuses. This approach has enabled the preservation of large open green spaces for the benefit of students and the broader community. It is also a priority in our regional campuses, including Albury-Wodonga, where improvements have been made to water quality management on campus wetlands.

As you will understand, managing this infrastructure comes at a huge cost. However, despite being statutory instruments of the states in their own right, universities are generally ineligible to receive state funding for managing environmental infrastructure, and we must typically apply for grants through local councils. This has meant, for the most part, that La Trobe has had to finance some crucial projects from its operating margins. To cite an example, in the last four years we have invested $4 million to improve the infrastructure in the Nangak Tamboree project, including the wildlife sanctuary. We submit that funding ineligibility is an obstacle to securing environmental infrastructure in our catchment. Universities receive funding for their core functions, but we do not receive any dedicated funding for maintenance of our environmental and physical infrastructure, and you can see this is significant. Our key recommendation is that we be eligible to apply for funding as land managers in our own right.

To give you an example, we are working on a number of projects with Melbourne Water on issues such as flood mitigation, threatened species conservation and water quality improvements. The way we have had to do this is Darebin council has had to apply for funding and then we have had to sign and work with a separate agreement with Darebin, who are our council. We think this adds an unnecessary layer of red tape and work for universities and the local governments involved and ultimately results in additional time and cost for the delivery of projects that we aim to deliver for public benefit. We believe it should be possible for the departments and agencies to change the eligibility rules to allow a university, established under a Victorian Act, to apply directly. Now, encouragingly, Melbourne Water has now changed its funding focus to support land managers—meaning that we can apply directly for funding while still working closely with Darebin council and a number of other partners. This removes a layer of administration, saving time and money on environmental infrastructure projects. We strongly welcome this flexibility and change of rules and recommend that all Victorian government departments and agencies adopt the same approach.

The other point I wanted to make was one around an integrated planning approach. Rather than having individual stakeholders working on an area with their own individual plans and management for the environmental infrastructure, it would be useful to have a joined-up approach and a more holistic view. For example, if you look at our region in Bundoora—and you can see there is a green swathe sitting through there—either side of that there are more green areas, and it would be really important for the landowners to have an overall adjoining green plan, long-term plan.

I know, Chair, that this inquiry is focused on growing populations. Nowhere is this more pertinent than in Melbourne's north. According to ABS data, the region added almost 200 000 people from the 2006–16 census. In fact by 2036 the region's population is projected to be close to 1.5 million. It is clear Melbourne's north is going to be for many years to come one of the most densely populated, fast-growing areas of Melbourne. Getting environmental infrastructure right in this part of Melbourne will be crucial, especially if one keeps in mind that some parts of the region are already lagging in terms of socioeconomic and environmental indicators.

Just one thing I will say before I finish, we mentioned earlier tree canopy. The 2020 *Northern Horizons* on support canopy in Melbourne shows that our tree canopy is 12.1 per cent, which is lower than any other region in Melbourne. I will stop there.

The CHAIR: Thank you. There have been some great presentations, and I really feel like—and I am sure my colleagues would agree—there are some common themes coming out from all of the witnesses and all of the groups that we have spoken to over the past couple of weeks. I have got lots of questions, so I am just going to kick off with the first one. I am really keen to talk about tree canopy and urban shade, and, Andrew, you would know that with me and Tarneit there is not a lot out there. There is a lot of development, and the streetscapes are looking very bare at the moment. What I really want to get to the crux of is—and I want to hear from you all—what is state government doing that is working to help increase the number of trees, improve, I guess, tree canopy, urban shade? Most importantly, what do we need to improve upon? And I am wondering: is there some kind of partnership that we should be doing with local government, with developers? What do you think we should be doing to take the lead on this and fix the problem, I guess, or at least start planting more trees and creating this tree canopy and urban growth, particularly in those areas that are looking extremely bare around the fringes of Melbourne at the moment?

Assoc. Prof. BUTT: If you like, I will start, Sarah, and I know Thami will have a lot to say about this too. But I suppose from an urban planning and an urban and suburban development industry point of view there are a couple of problems here. Now, it is not as though the industry does not think about this either, and I know, for example, in recent conversations with Stockland and others**,** they are looking to promote—and there are a couple of examples down in the south-eastern corridor where they are actively promoting—this sort of notion of a green spine as part of estate management and seeing that as a very valuable way that they can set their estate aside from others. So there are some examples. Minta Farm is an example—in, I will say, Narre Warren, but I will double check that—where that notion of a green corridor is actually central to their discussion about the site.

I suppose there are a couple of really microlevel issues. One is the competition for the use of streets. And when we think about those, we are not just talking about the competition at the surface; we are talking about the competition under the surface. And any local government engineers would be telling you now that there are some really strong challenges for drainage, particularly underground electricity provision, phone and NBN, water, gas, whatever else there might be—so that notion of how that trenching works and what it does for the capacity for the provision of street trees and also the challenges that are presented by road widths and the profiles of roads.

We can see on most precinct structure plans the notion that there are particular streets that would have a tree and not have a tree, that there would be an area of cycling and an area of walking and the rest of it all marked there, but Thami pointed out that that competition also leads to some decisions about species choice and decisions about what the surface looks like underneath that can be quite challenging. I think what we then need to do is consider that realistically people have got to actually appreciate that too. And that educational piece is part of that—'What is it that people appreciate about an urban environment?', 'Do they actually see benefits in those things?', 'Are they appreciating urban heating and cooling?' and 'Do they like trees?'. There is a sense in Australian society, a longstanding one, of people being reluctant to think that trees should be part of an urban environment.

And of course we just have that critical issue of the length of time it takes to see an established canopy, and recognising that there is always going to be failure and there needs to be replanting and investment in that replanting for it to occur. When we have private developers then handing over to councils after a period in a lot of those estates, that creates a lot of pressure for what it looks like in its first few years and then how well it is invested in once it is handed back to councils. We see a lot of decline in urban infrastructure when that happens, for good reason—because suddenly it is out there with the pressure that exists in rate capping, the pressure that exists in spreading costs back to older, established areas that themselves had poorer quality canopies. Even

before the current precinct structure planning and growth areas infrastructure funding models, you can look at areas in parts of Melton or something from the 1970s and they still do not have good-quality tree canopy. It is not as though there is not a backlog of infrastructure to address this, and design issues—

The CHAIR: Can I just ask you, on that, Andrew—I just want to get it right in my mind—would I be correct in saying that if we were thinking about tree canopy and the way in which we are planting trees in the many, many estates, say for example, in my patch in Tarneit—and Truganina is another one that is looking very bare—if we were thinking about tree planting and species and urban shade, what I call street beautification, at the very early stages of the planning process before, you know, working out where underground electricity distribution lines are going, water, all of those things, you are saying we would have improved coverage, that the trees would be there for longer, they would be bigger, they would grow better?

Assoc. Prof. BUTT: Well, I might get Thami to talk to that particular thing. Look, people do think about it from the beginning, and you can look at precinct structure plans and see that is the case. I question the degree to which choices that are then made are about maintaining the sense that those trees are a very important asset, possibly just as important as the drainage or the NBN or parking spaces. Maybe, Thami, you can talk to that and maybe fill in some of the fundamentals.

Mr CROESER: Yes, sure.

The CHAIR: And just so I am clear, Thami, is it the developer who is choosing or is it right back there with state government? Who makes that initial choice about this sort of thing?

Mr CROESER: Now, generally on public streets it is a public asset, so it is going to be your council that puts it in. Now, I am not close to the PSP process. Andrew, is it developers that do it in the PSP process?

Assoc. Prof. BUTT: Typically in new builds the developers would plant the first round of what goes in there, and typically we would see that the survivorship rates and the like probably mean there is some sort of other replanting or something that goes on soon afterwards. Look, it is a precinct structure planning exercise which is done by state government—by the VPA—that makes the choice about street widths and verge widths and the like. The species choice in street trees in particular is often a decision made by habit and behaviour of both the developers and council, but the management decisions at the micro level that are made kind of drift between them.

Mr CROESER: Yes. I wonder—

The CHAIR: Sorry, Thami, I just want to ask one last question just so we can capture that. Do you think that is an area that state government can improve upon, because it sounds like, to me, we are relying on developers? Developers are making a lot of money in areas like mine to do the right thing from the beginning and to plant well, but anyone who drives out here knows that we are having to replant, and things are not looking very good in many parts of the electorate. Do you think that that is an opportunity for the state government to take over something like that or have more of an input to ensure that it is done correctly for livability, longevity and so on?

Mr CROESER: I think if the precinct structure planning had actual stated goals about things like survivorship and outcomes and species choice in the public realm, then choices would be made that were not just to meet a profile design in a plan.

Assoc. Prof. BUTT: If I can just add quickly—water. Water is the key—I think the state government could step in here. You see that with Melton, specifying that we need to have these infiltration curves in new estates. In the west your rainfall is exceeded by evaporation. It has been a water-negative environment for quite a while, and that is an area where you can set specifications and require that what goes in has access to water through planning controls in those areas.

The CHAIR: Thank you. I think this is very interesting, and it is speaking volumes to me about my local area. What about hearing from others about tree canopy and urban shade—what we may be doing well, but what we need to improve? Like, what is the crux of this? How do we fix it?

Assoc. Prof. VEITCH: I would just like to make a point here. Apart from trees in the streets, which obviously are critical, the number of trees in parks is also a critical thing to consider. We know that one of the

main reasons people do not visit parks is because they are unattractive due to the lack of trees, because they are sparse, plain, grassy spaces. People are wanting parks which are lush with trees—trees that provide that sense of an environmental aesthetic and of a lush sort of botanic environment as well as the canopy of trees for shade. I think in terms of increasing the quality of our parks, consideration of the number of trees, especially in the west and other areas that you were talking about, is critical. Whether we can include a guideline on the number of trees or the type of trees that are included in our guideline, I think, is an important consideration.

The CHAIR: Ian.

Dr WOODCOCK: Look, I have seen some amazing maps produced by the Clean Air and Urban Landscapes Hub group, which Andrew and his team at RMIT would be a part of—of course, it was a multi-university collaboration there. The broadscale metropolitan maps that show you what the disparities are in tree planting across the metropolitan area give you a very stark picture of where there is an underprovision of tree canopies. I saw those maps—three years ago was the first time I saw them. I would have thought that since it was publicly funded research it should be available for everyone to see. Those kinds of maps are extraordinarily powerful. The question is: what do you do about it once you have seen it? I would have thought they were maps that everyone in the Victorian government should be made aware of, and a committee should be formed to address the inequality. The inequality between the leafy east, as it is stereotypically but not inaccurately described, and the west and the north is very stark indeed, and something has to happen.

Yes, Andrew and Thami are correct: there has historically been a kind of cultural resistance to trees among certain segments of the population, but I think when you look at the broad scale of the issue, it is a political issue as to how you actually deal with that problem. It is one of those things that something special needs to be set up to deal with it—you know, an intercouncil organisation, a state government level action committee or however these things are done. But the information is there. Wouldn't you agree, Andrew?

Assoc. Prof. BUTT: I in fact am looking at the page right now on the DELWP website where the mapping is there—mapping analysis, vegetation, heat and land use—

Dr WOODCOCK: There you go.

Assoc. Prof. BUTT: from a couple of years ago. So, yes, it is on the government department's website, which shows that basically Melbourne's west has about 5 per cent of Melbourne's tree canopy and inner east has about 20 per cent in a much smaller area.

Assoc. Prof. BUTT: Yes. So it is a huge, huge issue, and yes, it is interesting—this stuff can sit there on department websites. I do not know how many articles in the *Conversation* it will take to actually make it happen or journalists in the *Age* writing about it. I suspect those are not very good ways of drawing attention to things anymore.

The CHAIR: No, they might not be. Will had some comments and questions on this.

Mr FOWLES: Yes. Thank you, Chair. Just continuing with this topic around trees greening the suburbs, I have a couple of things to explore. The first is: to what extent do we know about the impact of powerline pruning on the quality of tree canopy and the urban heat island effect? It is apparent to the layperson post Black Saturday that the pruning standards are aggressive, and I am interested to know what impact that has on some of the other goals we have with these trees. I see Thami vigorously nodding his head there, so maybe that is a good place to start.

Mr CROESER: Great question. I think we see these utility standards holding canopy back significantly. Back when [inaudible] trees in the ground at the City of Melbourne it was not just above the ground, it was also the underground utilities that had essentially a right of veto. They could say, 'No, you are too close to my house so don't plant that'. So I am not aware of research that has quantified exactly how much canopy we do not have because these utilities can say no, but definitely from the arborists I have spoken to in various parts of the city, they lose the battle because, for example, with a powerline, if your branch knocks that off, they have legislative rights to fine the CEO of your municipality quite heavily for those kinds of things. So I think the approach is often, 'Just take the tree out. That's the safest way to manage the risk rather than trying to balance things a bit'. So I see this as a really important area for action.

Mr FOWLES: And to what extent has there been research done on the alternatives? The first I am told is sort of the bonding thing, where you take the four, six or eight existing lines and bunch them into one line so that the size of the pruning window is significantly condensed, or in the alternate, undergrounding a bunch of this infrastructure.

Mr CROESER: Anyone? I know that it costs quite a few thousand dollars per span. That is possibly one of the key barriers when I talk to arborists interstate. Do you know?

Assoc. Prof. BUTT: I do not know either, but I was going to mention the good point you made, which is always a concern, which is the new estate alternative, which is largely to underground. Many new estates would have no powerlines and have underground power, and that in itself does not always ameliorate the risks, as Tony mentioned, because then the street tree plantings—basically competition for space underground is often challenging as well as the competition for space overground, I suppose is my point.

Mr FOWLES: So do we know if there is research out there that addresses even just that binary undergrounding/overgrounding? There is a street tree impact, a carbon sequestration impact. There are also power savings from voltage—I have forgotten the word; it is like 'ullage'—the power loss over distance. I would be interested to know if someone has actually kind of run the ruler, I guess from an economic and environmental perspective, over that decision. I guess that is a no.

Mr CROESER: We might have to take that one on notice. It would be one to dig up because if you are willing to turn your attention to this and reform some of those things, I think it could result in some change. So we can see what we can find for you, if you like.

Mr FOWLES: If you are happy to take that on notice, that would be terrific. I wanted to also ask about deciduous versus native plantings and just to what extent there is any consensus around that. The reality is most native trees do not provide as dense a level of canopy as deciduous trees. Deciduous trees create a whole bunch of other work in terms of street cleaning, and moving on leaf matter I guess is probably a downstreaming effect, with a bunch of leaf matter at the right time of year being flushed into waterways and the like. I just wanted I guess your collective view on what sorts of trees we should be planting, to the point about standards, too, about whether we, the state government, ought be prescriptive about that and whether it has a big impact either way. Come on, now, don't be shy. Thami?

Mr CROESER: All right. Cool. I think the best thing you can do is actually get together a set of species and let the community choose. The way that it was done in the City of Melbourne I think is really commendable. They have a palette that is suitable not just for our current climate but for our future climate, and that is based on science. That includes indigenous species as well as a few non-native species. But ultimately, do not be prescriptive. Go to your communities and let them choose, because what that means is when they look at that tree that is on their streets in these precincts planning processes, they value it that much more and they do not call council and ask to have it cut down. I do not think it has to be a native—you know, binary. It is more a matter of picking a few and putting that up.

Mr FOWLES: But in terms, though, of the other goals, other than just what people like to look at, which I suspect will be the main selection criterion if you push it to communities to make a determination, in terms of urban heat island effect or just solar access generally, you know, there is a bit of an advantage potentially with deciduous trees and allowing solar access in winter but providing shade in summer, whether there are other impacts around perpetual leaf dropping rather than seasonal leaf dropping. I am just interested to know what other factors we ought be considering in making that determination.

Mr CROESER: So you want to know the factors that you are thinking about when you pick a tree?

Mr FOWLES: Well, particularly on that threshold issue about whether there is a systemic advantage to native or deciduous trees when it comes to greening urban landscapes.

Mr CROESER: I am fundamentally against having a binary on that. I think it is much more about choosing the right trees for the right context. You can get great shade out of a native tree like a paperbark melaleuca. Those can give you the outcome. I think that is maybe not a high-level policy thing to engage with. It is more empowering the arborists so that they can make the right picks.

Mr FOWLES: Sure. Any other views on that issue?

Dr WOODCOCK: Only to really reinforce what Thami was saying. I think the high-level view tends to obscure the on-the-ground place identity in the detail, and those are fairly complex processes. As Thami says, there are plenty of native trees that do all the things you want.

Assoc. Prof. BUTT: I am not an expert in this area, but I have been involved with a number of people who are doing research on street trees and respiratory health. We should not fail to consider the fact that street trees have different consequences for different people, and we know that particularly from plane trees.

Mr FOWLES: That actually leads me to my next question, Andrew, thank you, which is: what are the other things we ought be considering, other than urban heat island effect, general aesthetic amenity? There is the respiratory health. I know some people have real problems with those plane trees and those particular spores. But are there other categories that we ought be turning our minds to when it comes to coming up—to use Thami's phrase—with a palette of tree options?

Assoc. Prof. BUTT: I would add the idea of connectivity across the urban landscape. We should not see these as simply just roads that run up and down and that act as shade or urban cooling; they are parts of networks, and we have got to think about what that means on the adjacent private land. I mean, obviously we had a really good presentation about La Trobe's Bundoora campus, which is maybe not private but a massive amount of non-public land, if you like, but it is surrounded of course by suburbia, and we are challenged by what happens in every single instance there. It is certainly surrounded by areas where a lot of work from the Clean Air and Urban Landscapes Hub suggests to us that urban densification has resulted in significant losses in private land. I think, again, Thami suggested there is not a binary between native and introduced species. If we set up a binary between what we do in the street and what we do in private land, I think we kind of create some similar problems for thinking about both cooling and shade.

Dr WOODCOCK: Absolutely. I mean, the winners have just been announced for the Future Homes competition, and its ultimate aim is to transform suburbia in ways that are environmentally positive as opposed to the kind of deleterious effects of knock-it-down-and-build-it-up urbanism that we have had for such a long time, which has resulted in an enormous loss of tree cover, removal of nature strips and street trees and all sorts of things. I would suggest that a certain amount of attention is paid to the outcomes of that, because I am advised by people who are in the know that it is possible—even within the residential codes that we have at the moment, that certainly do favour intensification over everything else—if you do it well, to provide a good level of shade tree cover and a good integration with the public realm in a way that is encouraging of active travel modes and things like that. These are things that have been done off people's own backs in a competition against the planning scheme. How now can we get the planning scheme to encourage those kinds of outcomes as opposed to the sorts of outcomes that people can still do if they want to, often in places where a planning permit is not even required?

Mr FOWLES: Are there any other views on that issue or any other things that ought to be considered from a policy sense when it comes to this type of urban greening?

Dr WOODCOCK: Well, that is a policy issue that I just mentioned. It is about the integration of private development with the public sphere.

Mr FOWLES: Yes. Sorry, I will take you there. I was going to move to that next. In terms of what happens outside of the public realm—but it is obviously a very important component, all the greening that happens in backyards and front yards; these days it is probably more backyards than front yards—what are things that the government can and should be doing to improve the outcomes there?

Dr WOODCOCK: You are now asking about development controls, is that right?

Mr FOWLES: Well, potentially. Or are there other levers for getting a good outcome in the private domain?

Dr WOODCOCK: Thami has got [Zoom dropout].

Mr CROESER: I will tell you a short story from a council I spoke to, an inner council, where they have a requirement that when you do an infill development you have a front garden and that garden should have, I think, one tree in deep soil volume. They had this in their scheme for a while, they did an audit and they found

that the compliance rate of new developments was 9 per cent. So the bottom line for them was, 'We've got the rules in place, but we don't have the resources to actually get them realised'.

Dr WOODCOCK: Yes. Look, I would add to that. Anecdotally, one hears from one's ex-students, former students and colleagues working in the planning realm of local government that there is an awful lot of churn and an incredible lack of resources, and compliance is one of those things that suffers. I mean, I live in Brunswick, where we have got some of the highest levels of development going on anywhere in the metropolitan area, and a lot of it does not seem to be quite what was on the drawings that got approved—from what I can see casually. There are no resources to police that stuff, so I think one of your recommendations should be a significant increase in that kind of thing.

Thami has already noted the caps on rates and stuff like that, which obviously have flow-on effects to the level of resourcing that is necessary. But the planning system at the local level has never really been adequately resourced to deal with the level of complexity that is associated with the kind of population growth that is happening and the kind of policies that we all want to see for better forms of urban intensification.

Assoc. Prof. BUTT: There are examples that we see from particularly peri-urban, transitional or semi-urban environments where development agendas have been driven by the notion that, for example, post-agricultural land that becomes biolinks has an opportunity for people to actually live on and manage those sites. I mean there are examples within the system that have existed for a while where there are basically dividends, if you like, from contributions that you make in that regard. Making an environmental infrastructure contribution through good design might be a criterion by which you would establish the right to a development that you might not otherwise have.

On the notion that good design should be rewarded and that one element of the design would be about the provision of space and, as Thami said, deep-planting trees, and as Ian mentioned, on the elements of design that actually work well, like your Prahran example, there is no reason why the planning system should not reward good design and be designed to reward good design rather than as it works. We do know there are examples within the planning system rules and planning systems elsewhere in the world that do that. We have a planning system that effectively rewards good design in heritage areas by allowing things often to be done that would not otherwise be done. The system literally allows that to occur. It does not always do it well necessarily; we can go back to that enforcement issue. But certainly in terms of urban intensification, developments which actually provide green space, whether it is private green space or green space into the public realm, should be those developments that we see more of. And in order for us to see more of them it might well be that those are the developments, particularly, say, in medium- to high-density areas, where we can see that that design might actually be a trigger by which developments occur more easily—that is probably the simplest way of putting it—and within our planning system we have the capacity to do that.

Mr FOWLES: Just a final element of that: we have spoken about, I guess, the stick option—that is, 'You must do things or bad things will happen' or 'This is simply a rule'—and yes, there is an enforcement gap, but I wonder if any thought has been given to ways of incentivising people to either plant more, plant more appropriately or assist the macro goal of greening the suburbs in any way?

Assoc. Prof. BUTT: Well, I think the last one I mentioned I suppose would be one, which is that we can make the planning scheme easier for people who do good designs, if you like, rather than always seeing it as an enforcement issue. But Ian—sorry—go on.

Dr WOODCOCK: Well, I was just going to expand on your point, Andrew, really. There are ways of doing that. Moreland council has been trying for a while to get accelerated processes in for developments that meet the policy, because most of the time people put things in which try to push the boundaries a bit—a few more storeys here, a little bit less of this, a little bit more of that—and so they are saying, 'Look, if you just do what we ask you to do in our pretty comprehensive policy, your design is going to go through the system much more quickly'. That is going through a process. There was a certain amount of opposition to that when it was put out for local consultation, because residents have become so cynical about planning in this state that they do not actually trust the council to implement its own policy. Now, that is Moreland. You could say maybe that is just a local problem, but I do not know—Andrew might know more about this than I do—where these sorts of accelerated code assessment processes have been implemented in Victoria. They are very common in New South Wales. I would say, having just spent three months working from home up in Sydney, that the built

environment outcomes are generally better in Sydney than they are here because of SEPP 65 and a whole range of other things that they seem to do better than we do.

Mr FOWLES: Sorry, SEPP 65?

Dr WOODCOCK: State environmental planning policy 65, which is a fairly comprehensive policy. It covers a lot of things, one of them in particular that a lot of us are interested in is multi-unit housing standards. I would say every time one gets the opportunity, have a look at it and see if you can do something a bit like that down here because it produces much better outcomes from an environmental point of view. On the one hand it allows things that meet the code to go through planning much more quickly, so it incentivises people to do the right thing, but it also has a lot higher set of standards, so doing the right thing is actually of a lot higher minimum standard than it would be in Victoria.

Assoc. Prof. BUTT: And right now we are in a period where the Minister for Planning and DELWP are in a process of planning review, and part of that as I understand it, although nothing has really been released in that regard, is around looking at some opportunities for more code versus merit assessed. So in other words, things you can just do because you can versus things you need to prove what you are doing; that is the sort of difference. Victoria has typically had a model where there are things you can just do without a permit and there are things which we assess, and the move I think is for things which you can just do if you follow these rules.

The cynicism in the public I think is broader than just the good burghers of Moreland about what that might mean, because the likelihood is that people will see things just happen without having the opportunity to have a say in that regard. But I think this is the sort of opportunity where there could be proof that such a system would work well, to say, 'Well, there will be better outcomes. They will be easier for everyone, and they will be the sort of outcomes that we have all talked about for a long time', and it will be a path for a developer to take that will be simpler. Look, just looking out the window here where I am at RMIT in the city right now we can see the folly of large apartment blocks without very much differentiation between them. A lot of them are empty. I think the development industry is probably in a phase where it is realising that it has to provide a differentiated product, and so maybe that is the opportunity right now.

Mr FOWLES: Beauty. Thank you, Chair.

The CHAIR: Thanks, Will. Members—I feel like saying university professors, but witnesses will cover you all: how about we take 15 minutes to have a quick break and come back. I think members will agree this is a really great conversation. There are lots of really great ideas coming out and we want to continue the discussion. We will break now and come back at, say, to make it easy, midday. Does that suit everyone? Okay.

The CHAIR: Welcome back. I might throw to Paul now for a question.

Mr HAMER: Thanks, Sarah. I wanted to start off this session just with a few different questions. The starting point, I guess, was about the size of parks. I think there were a few discussions about the diversity of vegetation and plants that would need to be in any park, and I guess I see the way that various councils—and the state, to be honest—approach the delivery of open space, and obviously there is a limitation in terms of costs and availability of land, particularly in inner and developed suburbs, but is there a preference, particularly from an environmental diversity perspective and an environmental and perhaps even social outcome perspective? Is it better having, say, 10 smaller local parks or one larger park, that perhaps has more uses, of a similar size to 10 local parks, just as an example? And then we might talk about how that might be achieved. Would anyone like to kick that discussion off?

Dr WOODCOCK: Sure. Look, a lot of that will depend on what is already there, because it sounds like a perfectly feasible question to ask in the abstract, but if you look across the diverse landscape of Melbourne's suburbia and apply those questions, you would say that the answer would depend on where you were in each case. Some suburbs have access to large regional landscape tracts while not having any local parks at all, say, whereas some may not have, you know, anything at all. So the question is: how do you lift the base level? I think it really does depend on where you are.

The second part of the answer to that question is accessibility and understanding the demographics of each local area and how they move around and the kinds of needs that they may have. Obviously different demographics have different needs for the kind of open space that they might need. The thing about trying to use that to plan with is kind of change over time, and Australia's suburbs are remarkably dynamic. The demographics that you

might find in one particular census year could be different a generation later, and in 25 years, who knows how much you may or may not be able to achieve.

I would say—and I think in one of my slides and in our submission it says—the 10- to 20-minute ped-shed or the area that can walk to within 10 or 20 minutes should be absolutely crucial. I would go further than that to say that actually a 5-minute walk is really what should be determining the accessibility of these things, because partly it is known that those things are there and if you do not pass them regularly on your everyday walk or going to work or going to see the doctor or whatever it is you do, you might not know that it exists. So therefore the more open space that is spread out the better across suburbs and the more likely that people know that it is there and therefore are going to use it and incorporate it into their daily life for it to start to have the benefits that it offers. As we know, people are remarkably resistant to walking. I mean, most people do consider a 10-minute walk a reasonable walk, and a 20-minute walk is a very long walk for a lot of people. So the shorter the walk you use the answer is going to be more smaller spaces—or whatever you can afford within your budget—everywhere rather than a few tracts of land that might be accessible to 80 per cent of the people within a 20-minute walk or some other mode of transport.

Remarkably most local open spaces are not well provided, and regional open spaces are not particularly accessible via public transport. We could talk about how difficult it is to get around safely by bike, which is one of the things that we canvassed a little bit in our submission, but there is no comprehensive plan for a network of safe, continuous and separated cycling paths across the metropolitan area that would allow people to access far more of the open space resources that exist that are just beyond, say, a 10-minute walk or a 5-minute walk. Because, you know, cycling is actually the most reliable way to get around if you are prepared to chance it. But we do not have that, so you need to link the provision of whatever type of open space there is with how accessible it is to whoever is going to use it.

Assoc. Prof. DAVERN: Paul, it is Melanie Davern from RMIT University. I have just joined in this session. Apologies; I could not make the earlier section. Jenny, you might have something to add to this as well, but in terms of public open space, we do know in terms of physical activity research that the size of public open space is important—that you are more likely to have people meet physical activity requirements when they live near large public open space, and I am talking about 1.5 hectares. When you have smaller spaces, particularly pocket parks, then we do not see that there is an improvement in terms of physical activity. The use type that people have for those smaller parks is less to do with that. I know Jenny has done a lot of work on some of the larger parks as well and can talk about this, but in terms of the Victoria planning provisions it used to be that—I am not sure if it is still there; it should be—95 per cent of all properties should be within 400 metres of public open space. That does not actually define the size or the quality of that space, but in terms of having local access, that is really one of those key measures that you can look at. But when we have measured that across Melbourne before, we have only found around two-thirds of properties have that.

Now, that is some years ago now—it was probably back in about 2016—so I imagine that that might have changed over time, particularly with growth. But I think that we need to think about public open spaces being of multiple benefits, so they are not just there. When I talk about public open space, often this is the local footy oval. This is not a beautiful park, it is a public open space, and those spaces need to provide multiple benefits for health in terms of active physical activity, in terms of passive and mental health benefits and in terms of biodiversity and ecosystem services, and there is organised recreation and non-organised recreation—places where people can meet, can socialise and can walk the dog. Really all of these things need to be provided in this one sort of local area. That is my bit to that. Thanks.

Assoc. Prof. VEITCH: Thanks, Melanie. I will just add to that. I agree with everything Melanie said, and I guess obviously in existing neighbourhoods we cannot necessarily change the size of the parks, but I guess we need to ensure that we maximise the quality of the small spaces so that they are still an attractive destination. They may not provide as many opportunities for physical activity, but they have other benefits in terms of social connectedness, getting together, potentially for relaxation and [Zoom dropout] community, but they still need to be high quality so that they attract people to visit them. Also in terms of the accessibility that Ian was talking about, we agree that it is vital that we look at not only the location but the accessibility to ensure that there is safe access so that, for example, children can visit there independently if they wish to, so looking at the road networks and the crossings—and also for the older adults, consideration of the provision of safe and even, level walking paths et cetera, so it is not just about the size but it is about the quality and the accessibility. Obviously the larger size parks can provide more amenities that can meet the needs of the different user groups.

The smaller parks are more restricted in that, but they still can become really attractive small pocket parks that can really be of great benefit to the community, even if they are small.

Assoc. Prof. DAVERN: And when it comes to that quality too, Jenny, following up on that, really maintenance is the key issue here—that maintenance typically falls to local government unless there are those large regional parks. So it is not just the provision of a space but it is the maintenance and the upkeep of that space to keep the quality high. There is no point putting in great facilities if nobody is looking after them and nobody is maintaining them. What you see across Melbourne and across other areas as well is this real inequity issue in terms of the quality of spaces in some areas versus the quality in others, and disadvantaged areas are much more likely to have poorer quality open space.

Dr WOODCOCK: I would just like to add, well reinforce the points really that Melanie makes about exercise and health benefits as one of the core indicators of the benefits of open space, there are parts of the city where it is obviously very difficult to provide large open space areas within a reasonable distance of people's homes without buying up significant tracts of land. So, therefore, as we say in our report, the focus needs to be on making the streets part of that network. I mean, when I have gone for my COVID walks around here, most of them are in the streets and along the Upfield bike path, which is pretty horrible. But, you know, that is the only choice I have. It takes me 20 minutes to get to the Merri Creek. It is nice when you get there, but it is a 20-minute walk to get there, and I think that will be true for a lot of inner-city areas. You have to walk a very long way to get to a decent sized park which would rate high on the exercise scores. The only option really for those people is to improve the streets. In large parts of Melbourne streets make up 40 per cent of the built area, of the land use, so it is a not inconsiderable proportion. It is just that it is very hard to imagine it that way.

Assoc. Prof. DAVERN: And just to go with that, Ian—sorry, I feel like I am really talking a lot now—in the Australian Urban Observatory we have measures of public open space, where we have multiple measures, and you can see if you want to look at the closest public open space, that you will get a different result to the largest public open space and so on. So actually looking at Ian's point, you can map that and you can look across Melbourne to see that for some areas it is a great distance to get to some of these larger spaces or even to a nearer space. So I think it is not just that one measure provides an understanding of what is the situation, but you actually need to look at multiple measures to get a good understanding.

Assoc. Prof. VEITCH: And I think it is also important to know that people do not necessarily visit their closest public open space, even though we know that it is important to have parks or places close to people's homes. People are very often travelling quite significant distances to get to the public open space they wish to visit, because those places have the amenities that they are looking for. This is particularly true in the more disadvantaged neighbourhoods. We know that they have to travel further to access the parks they want to visit. So that is where it is important to ensure that we have an equity of high-quality parks throughout so that people do not have to travel necessarily as far to access the park they wish to visit.

Mr HAMER: Thanks. I suppose just a quick follow-up question. I think, Jenny, you mentioned some quantitative analysis or research that you had undertaken in terms of the value of the per hour of activity. I was just wondering whether you had done that in a comparative approach in terms of the value that might be put on different elements of open space, whether it is just simply you walking down the street or if it was a little pocket park that you might just have, basically, a park bench and some greenery versus an area that you can partake in more physical activity and you can spend a longer period of time there. Are you aware of any research that has been done in that sort of way?

Assoc. Prof. VEITCH: Yes. Our research was based on the one study I described, which was in Brimbank Park, which is a very large 320-hectare park. We looked at the cost-effectiveness of the refurbishment in terms of the increase in physical activity. Studies on this that have evaluated the effectiveness of upgrades in parks are quite rare. There are some internationally, but there needs to be a lot more done in this space. It is a plan for our future research, and I know that is something that is really important for future planning. But I guess our research does provide some evidence that there is potential, and it showed that it was a cost-effective intervention, which is really great news. We just need to conduct more research into this space. But no, it did not look at different parks; that particular study was just based on that one large park.

Mr HAMER: And not converting it from a different use—it was still a park; it was just upgrading the infrastructure in the park?

Assoc. Prof. VEITCH: That is correct. It was looking at activity in the park that was performed across the whole park prior to the renovation and then after it had been renovated, the change in activity hours, the change in the number of people observed engaging in physical activity, and we looked at the costs. We calculated a cost-benefit ratio, looking at the cost of the actual refurbishment in that park, yes, compared to the control park.

Mr HAMER: Okay, thanks.

Assoc. Prof. VEITCH: I can send you the published article on it if you are interested.

Mr HAMER: Yes. I think it would be useful to circulate it and send it through to the Chair if you want to reference it.

Assoc. Prof. VEITCH: Okay, yes.

Dr WOODCOCK: I think on the question of size—maybe this is work that has already been done—it is remarkable how many different uses you can get into a relatively small area with some of these new parks that are happening where I live in Brunswick. There is one that has been there for quite a long time that won an Australian landscape institute award when it was completed, Randazzo Park. It is less than a quarter of a hectare in size and yet you have got forms of passive and active recreation, you have got native vegetation, you have got a children's playground, you have got an eating area for people—you have got all sorts of things going on in a very small area. I mean, a quarter of a hectare is, what, about four suburban house blocks basically. So perhaps some kind of compendium of what can actually be achieved at a range of different areas going right down to these really small parks—and some of the pocket parks in Fitzroy are even smaller and have been there for longer—would be a really useful guide, I think, to help decision-making in this area, because as people keep stressing, it is the quality that matters.

Assoc. Prof. DAVERN: Ian, just to add to this—and, Thami, you might want to add something to it as well—I think we think about parks as a single park, but we need to think about the network of parks in an area, and this is particularly of interest to biodiversity as well. If we are able to section off parts of parks where they are providing a biodiversity benefit, those do not exist in isolation. We could think across a region and how these individual parks are connecting up, and again, like Ian and Jenny are both saying, think about it in terms of the benefit to people: 'Okay, maybe I've got one park that is largely for this purpose or another for that'. We need to keep that in mind—and not disconnect our waterways from this conversation, because I think Melbourne Water is really interested. They are doing a lot of work on reimagining their creeks, so they are doing creek transformation projects across the city. They hold a massive amount of land. That intersection between blue spaces and public open space fits within this environmental infrastructure discussion as well, because the way the operation tends to work is, 'Well, they're managing the waterway', but we are not thinking about the intersection between the green space with the blue space and how this connects up as well.

Mr HAMER: Thanks. Ian, you gave the example of Moreland park—

Dr WOODCOCK: No, it is not Moreland park—Randazzo Park in Brunswick. I do not think there is anywhere called Moreland park.

Mr HAMER: Sorry, I thought that was on the top of your slide.

Dr WOODCOCK: I was just trying to be succinct.

Mr HAMER: A park in Moreland?

Dr WOODCOCK: 'A Park Close to Home' is the program that they are using to purchase these small sites, and it is a Moreland City Council program.

Mr HAMER: Okay. So all of that land that you showed which was converted into a park and was formerly, it looked like, light industrial, was purchased by council? That was not part of a larger development—is that right?

Dr WOODCOCK: No. It was purchased by council specifically for the purposes of turning it into local public open space.

Mr HAMER: That is I guess why I asked the initial questions about the size of the parks and whether they are better as smaller local or larger regional. What needs to be done from a state government or a local government perspective that can assist in identifying and developing more open space? This might be purely private land, so it could be old industrial sites or it could be some sort of public but not that accessible land, such as you talked about just there, Melanie, with Melbourne Water land. There might be land that is held and reserved by Melbourne Water but is largely inaccessible. What do you see as the barriers? Obviously cost is one barrier, but are there any legislative or regulatory barriers that could be changed to actually assist in that process?

Dr WOODCOCK: Look, I am answering this one a little bit off the top my head. I have got a student at the moment who has just started a project looking at the viability of that Melbourne Water land. The early findings are that a lot of that land is inaccessible to the sorts of communities who might be the most interested in using it, and it is surrounded by other forms of land under who knows what ownership—we have not established that yet—that would need to be brought into conjunction with it to make it viable, because some of these bits of land are very strange shapes and are in very odd locations. They are not anywhere near where large numbers of people live, and yet they are part of the Our Space Your Place program that you might have heard of.

It is a wonderful initiative, but one of the main things that it would seem to require to make it viable is social capital building exercises, because these things only really happen if they have local champions who understand the potential of these sorts of marginal and remnant spaces to be used for community purposes. They need to know where they are and they need to have a toolkit for how to actually repurpose the land, and all of that takes a lot of time, energy, knowledge, social capital and community resources, because that is basically what these programs are premised on—here is our land use, you have got to come along with the idea and the energy, and you can have it. The missing links in that are: how do you actually form the groups, how do you resource the groups and how do you identify which bits of land are going to be suitable for which groups? This is partly what my student is working on, but it is only a short project. So it is one of those more kind of capacity-building exercises, I would say, and working within the regulatory bodies. Those of us who work within bureaucracies like universities know that it is knowing the right people to make the levers work in the right way. You can often achieve things very quickly, as we have seen with pop-up bike lanes and stuff like that. But I would have thought the support the government could give at this point in time would be to understand that capacity building at the community level is a really important need there.

Assoc. Prof. DAVERN: Can I come at it from a really different angle, Paul?

Mr HAMER: Yes, sure. That is fine.

Assoc. Prof. DAVERN: I definitely still agree with everything Ian is saying, but I think the key thing here is measurement and assessment of current infrastructure. If a local government does not know what it currently holds, that is an issue. They do not know what it is, they do not know what size it is and they do not know what benefits it is providing—that combined perhaps with that community-level input about needs and wants and so on is really important.

But the other thing is that everyone has access to *Victoria in Future*—the population projections—so you cannot suddenly say to me today that somebody does not know that there is going to be massive population growth in five years when it is in front of them in statistics. But what is not happening is this understanding of, 'Yes, we know that densification is necessary and it's important to use the existing infrastructure we have—and it is good for health as well'. But if we do not combine these pieces of information, we are going to end up with some of the situations we are seeing now, which is that people are going, 'Well, hang on, Collingwood residents may have 18 square centimetres of public open space because we didn't think about it when we put all the high-rise and densification in'. It is hard to go backwards, but we have got to plan forwards better at the same time, so really making use of that sort of information is critical I think to start with.

The one thing that I was thinking of also in terms of Moreland was that they have been very forward thinking. That council has been holding onto land for some periods of time. It gives them options to turn land they already own into public open space. That is because they have got a forward-thinking person in there—and I have to say hats off to Alex English, who manages all of the parks across the City of Moreland as well. So you have got someone who is really passionate; you have got a council that is forward thinking; they are using data and evidence; they are combining all of these pieces of information together so that they are forward planning, not just reactive planning.

Dr WOODCOCK: Yes. Look, I would just second that. I mean, that map I showed you from Moreland was at least 10 years old.

Mr CROESER: If I may, do not forget that roads are public space and redundant road segments can be made into parks, and there are really good examples around the world of big redundant road segments or low-traffic road segments that have been turned into really beautiful linear parks. Cities like Paris are really aggressively pursuing this stuff now, but you go to places like Copenhagen and you can walk down parks that were roads. In that case, it is a matter of having that slight change in political direction, saying, 'This isn't too scary an issue for us to touch anymore', and that can be led by you. But also stepping a level down is having that cross-agency coordination, so it is not just about trying to make more parks but having the direction and VicRoads saying it is okay to take the occasional road based on some careful assessment and convert it into a linear park.

Mr HAMER: I think your presentation included the repurposed car park. Would you say the same about the car parking? There would have to be hundreds of hectares of at-grade car parking around the place. I know it is a pretty expensive exercise if you are going to put a deck over a car park, but in an area where you have got very limited open space, in some areas they are a council's largest assets.

Mr CROESER: Yes. I think it was Ian that showed the park in Prahran that got converted from a car park. But I am doing an analysis on parking at the moment, and what is so shocking to me is that there is so much space on our streets and in at-grade car parks that is near off-street car parks that are not full. So there are enormous options for consolidation there without necessarily spending the—what was it?—$8 million or $80 million to make these super-engineered car parks that still have the parking and the park. It may be in some cases you can just move the parking into adjacent buildings.

Dr WOODCOCK: Look, I could not agree more. I mean, I think $80 million to put a car park underground in a place that is surrounded—it has got trams on three sides and a railway line on the fourth—is an indication more of the local politics in Stonnington than perhaps good design, and I would not recommend it necessarily as the best use of $80 million. But I think what it gestures towards, though, is the importance of dealing with the problem, the fact that it has come as far as it has, and I do believe that that design has actually been so-called futureproofed, so that the car park has been designed so it could easily be converted to another use in future rather than just remain low-level car parking. Having done a little bit of a look online and analysis of a sort of desktop study of how replicable that model might be, most inner and middle-ring surface car parks are not actually as big as that Cato Street car park, and so therefore it definitely would not be desirable to do what they have done there, because of the cost of digging a big hole to put cars in. So we are going to have to find better ways of using the under-utilised area.

But, I mean, the best thing we can do is to have people use their cars less and to encourage people to use other forms of transport, and one of the best ways to do that is to make our streets much less car friendly and much more friendly towards pedestrians and cyclists. The more difficult it is for cars to get around, the less likely people are to use them and to use other modes. It is a fairly simple equation, I think. Anybody that drives to Fitzroy is crazy. There is nowhere to park, for example.

Assoc. Prof. VEITCH: I would just like to follow on. I agree with everything both Ian and Thami have said, but, you know, I work closely with colleagues in Denmark, and Copenhagen in particular, and their examples of co-use and co-sharing of their open spaces and parks and opening up spaces, for example, between taking away the borders and fences of schools, co-sharing their parks with the public, cutting down barriers with churches and schools so it is one big open space that is open to the public, are just fabulous. They are examples of what they are doing, and they have worked so successfully, closing down streets and converting them into these amazing public spaces. So there are plenty of fantastic examples that show that it does work, and I think it is something that we really need to be considering in all our future planning.

Assoc. Prof. DAVERN: Yes, I second that, Jenny. I think that re-use of existing spaces is really important in this conversation, and schools provide a really good example, because many schools you will go past will be locked on the weekends, and they provide a really important part of public open space.

The other thing there that raises is that separation between private and public and what is publicly available and whether we can re-use those places. Listening to Ian speak before I was also thinking about VicTrack. That is another part of government that is kind of missing in this conversation. We have these amazing corridors of

green space alongside railway lines that are not being used as well, and I know of some local examples where people are wanting to use those spaces and they have been fenced off. So I think it is maybe thinking about how we use the existing really well as well.

I wanted to just make note that the VPA did produce an open space assessment tool that is available online, but 10 years ago that was not available and VEAC, the Victorian Environmental Assessment Council, was the first organisation ever to actually look at existing open space. So I cannot help but think about how, when we are trying to understand what is available, we need to have an assessment of now, we need to be thinking about the future, but let us think about these other opportunities of how we could use open space that we are not doing well at the moment.

Mr HAMER: Thanks, Melanie. They are my questions. Sarah, do you have any follow-up?

The CHAIR: I have got heaps. I have got the black texta, and I am running it over everything around me. I would just like to briefly discuss those that have comments about GAIC funding. Obviously Tarneit is sitting in the outer suburbs and has GAIC funding. I think, Andrew, you mentioned releasing money through GAIC to pay for environmental infrastructure. It is a very interesting, controversial comment to make because a lot of the community want GAIC funding to be released for things like a $100 million train station. My electorate has three alone—three proposed stations, but not yet funded. So, Andrew, listening to you make some of those comments, I sort of felt like I want to see more environmental infrastructure in the outer west. Should there be another bucket of funding? Because GAIC funding, I feel like from the community's perspective, will always be injected into those massive projects like train stations that we cannot build quickly enough. So, for example, tree canopy and urban shade becomes an afterthought, and it is competing with things like train stations, bus services, the big infrastructure projects and services that places like the outer west cannot get enough of quickly enough, essentially. Do you think there needs to be some kind of other specifically funded bucket with a focus on this sort of environmental infrastructure?

Dr WOODCOCK: You mean should the pie be made bigger? Should we have a bigger pie, basically?

The CHAIR: Well, make the pie bigger, separate the pie out of something like GAIC funding and use that for that hard-core service infrastructure, but have environmental infrastructure for growing communities as part of a separate bucket that is focused on improving livability through things like creating more open space and being able to build and develop more parks. What we know in my area is sometimes we have the space but it costs a hell of a lot of money to purchase some of this land and maintain it and create it from the get-go. Do you think that there should be separation of funding? How do you think this stuff is funded?

Assoc. Prof. DAVERN: I think Andrew is missing in action, and as he is my colleague, I will answer for him a little bit because we are on the same submission. As you will know, whether it is in PSPs or GAIC, there is reference to open space, but one of the key things is it is not really talking about the quality. So maybe in terms of GAIC it just needs revision in terms of being more specific so it is not just, 'Tick the box, we've got something on open space in there'. The other issue that we see is that if you do not have good-quality open space early, when people move into an area it sets up lifetime behaviours, so if you come to learn that that pocket park or that brown oval over there is your public open space, you do not even use it. So perhaps it is tweaking what we have got in GAIC now to make it really clear about early delivery so it does not come as an afterthought later on and also mentioning something about open space having these multiple benefits, particularly for health, and that we can create quality measures within that in terms of GAIC. Andrew would have more to say it than I would.

Dr WOODCOCK: I have something different to say. Again, I would like to draw on things that happened just up on the other side of the border in Sydney. If you are talking about areas where new railway infrastructure is going in and people are wanting new stations, take the north west metro in Sydney that has been open for a few years now and look at the advanced urban planning for intensified development that goes on around those stations on the north west metro. There has been no opportunity wasted to do all of the things that good planning says you should do to make the most of that massive public investment in a new rail line. Building a new station is the least of it. When you put a new station in and you have got densities of, what are they, gross 25 dwellings a hectare, it is hardly worth putting a station in at that density unless you want to see acres and acres of car parking around your station. What you really want to see is development at five to eight storeys, with mixed use and offices and commercial—all kinds of things—around that station. I do not know why in Victoria we cannot plan for these things. They have been doing it in New South Wales for a long time;

they have been doing it in other parts of the world for a very long time; and all of the academic literature says that is what should be done. So it is a much, much bigger issue than the GAIC; it is actually a fundamental issue with the problem that our PSPs are not really fit for purpose actually. If you look at the PSPs, they have been done very fast. It is great that they have been done very fast, but the quality of urban design and environment that is likely to be produced by them is just in large spaces a bit of a waste of land. It is a waste of opportunity. I cannot say it more clearly than that.

The CHAIR: Thanks, Ian. I think they are interesting comments, because on the high density or medium level of density, I mean, we do not have a lot of three-, four-, five-storey buildings—

Dr WOODCOCK: Can I stop you there? Caroline Springs: the centre of Caroline Springs is selling seven-storey apartment blocks at the moment for the same price as you will pay for an apartment in Brunswick. Caroline Springs has been developed very cleverly as kind of a doughnut around the shopping centre, so you have got the shopping centre, which is fully fitted out, along with its educational facilities, which is what the developers use to market the place, and you have got kind of a doughnut of relatively low density typical suburbia around it, albeit at a slightly higher quality than average. Then you have got this doughnut, which they are now filling in with, as I say, up to seven-storey apartment blocks, because they have now established there is a market out there. And there is a market even though there is no railway station in central Caroline Springs. There is an activity centre; people can live on the seventh floor, they can go down and they can go shopping and they can go and hang out by the lake and do all those things. Now, Caroline Springs is about as outer suburban as it gets. I do not know whether it is in your electorate, but it is out west.

That is precisely the sort of level that I am talking about for these developments along the north-west metro in Sydney, and there is no reason why we cannot do that kind of thing here around the new railway stations that have been proposed or have yet to be but have been zoned for the regional rail link. So there are some new railway stations to go in there along the regional rail link. There is a lot of vacant land around the existing rail stations along the regional rail link. There are new rail stations or upgraded rail stations proposed as part of the western rail plan. They could all have significant levels of intensification, and we would make much, much better use of the relatively small investment in a new station—$100 million is actually quite a lot of money, but it is not that much money in the overall scheme of things. We could do that—

The CHAIR: I think that is an interesting point about the doughnut and what you sort of fill it in with and what you are sitting around. Williams Landing has sort of got more—it is not high rise, but I guess it is a little bit of a business precinct, and then there is Werribee. But the demographic of my patch is 30-year-old couples with two small children, so apartment living does not suit or appear to suit families, which may be the reason—well, one of the reasons—why house and land packages are so popular out here, and the price tipping point.

I wonder if any of you can talk a little bit about whether you have done any research and what your thoughts are when it comes to multicultural communities. So Wyndham is an incredibly diverse and vibrant multicultural community, and a lot of people that have moved here were not born here, were not here five years ago. So the places they are coming from are obviously very different to that suburbia Australia that we grew up with. I often wonder if there are insights into that, and the importance of things like tree canopy and urban shade—if there is a sort of correlation between the need for that and it being thought about there in the beginning and early in the planning and people buying into estates. They are focusing on schools and buses and train stations but not about whether it is a leafy suburb, and then the afterthought—you know, the comments I get all the time, if it is not that our schools in the western suburbs are like those in eastern suburbs, but that stark contrast of, 'Those incredible grown-up trees in places in the eastern suburbs, the leafy eastern suburbs—it doesn't exist here'. Have you done any sort of research about these sorts of multicultural communities and what they would like to see?

Dr WOODCOCK: I have done a bit of research in Caroline Springs, and certainly the development model in Caroline Springs aims to emulate that kind of hierarchy of social value across the metropolitan area within the microcosm of Caroline Springs. So if you go and talk to the developers there about how it is supposed to work, they will tell you that they have put a hierarchy in that aims to replicate the kind of environments that you see in the eastern suburbs over in the west—that you buy in at the level that you can afford and you move up towards more leafy, more traditional-looking suburbs. And if you go and hang around, drive around and walk around Caroline Springs, you can see evidence of the difference in the price points and the kind of social ecology they are trying to create there. So arguably they are creating an ecology where apartments will fit into that. That is your entry-level point into the Caroline Springs thing before you have kids. Then you have kids.

You move out into another part of Caroline Springs where you can let them hang out in the backyard or in the local pocket park and send them to the high-quality education district down the road, which is what Caroline Springs is premised on. Because the western suburbs is not a blue-collar demographic anymore, is it? It is a much more aspirational demographic. And so Caroline Springs is a very interesting case study in that. I mean, it is a very multicultural suburb; a lot of the people that we interviewed in that area were from non-English speaking backgrounds. The rest of it is pretty similar. The problem is that for most of them their aspirations mean that they cannot find work locally. They have to go and work in the CBD or one of the university campuses or some relatively high-paying white-collar job that is not accessible in the west. You could argue you are now talking about macro-scale strategic planning—'How do you make it so that they can actually not travel so far or travel more sustainably?'—as part of your environmental infrastructure discussion.

We did a project a few years ago where we suggested that Deer Park, the old Orica site there, would make a good site for an innovation hub/university campus in the heart of the west. It could be excellently provided by public transport; it is just on the edge of the Sunshine major activity centre there. It is soon going to be extremely well connected. It needs to be more than just a transport hub; it is this multiscale integrated transport and land use planning, ultimately. Funny how we are getting back to this conversation, but that is the kind of thing. I am not sure that the cultural differences that are being gestured to by the idea of multiculturalism necessarily engage with that. My sense is, particularly the western suburbs, the multiculturalism there is very much an aspirational multiculturalism of wanting to do well as middle-class professional people, and living in a leafy environment is usually part of that.

Assoc. Prof. DAVERN: Sarah, I will give you some more anecdotal research, I guess, in working with partners out in the south-east, so I am talking out at Cardinia and Casey. I think it will ring bells for you. What they have often come up against is different cultures using these spaces in different ways. Just as a real tangible example, there may be members of the Sri Lankan community who want to have their barbecue and a big family gathering out when the football is being held on the same space. They are having to kind of manage some of these differences in how spaces are being used and come up with ways that will allow both groups to have use of these spaces. With more people with different uses and different types—I think this is really critical to the design of those spaces in the future so we can understand perhaps a little bit more about how different cultures will use them. That social connection and the mental health benefits of these spaces are just as important as sport and physical activity, because often within public health it goes straight to physical activity in my opinion—Jenny, you may have a different thought—but I think we need to think about them a bit more holistically for those connections and the integration and a whole community working together.

The other thing, just to go to your question in terms of different socio-economic groups and trees: this is something that I have looked at for a number of years, and most recently we have had a linkage project looking at street trees for biodiversity and human health benefits. In terms of street trees, which are normally the sorts of things that people are talking about, we talk about canopy coverage. Of course there is public open space, but the most critical ones are, you know, that beautiful boulevard of trees that you are talking about that maybe you will see in the eastern suburbs. There are a couple of factors going on there.

The first one is, okay, people have arrived there. In the west it is a drier climate, so immediately you are putting a local government under harder pressure for maintenance. Once you have got a tree in, which is the first part, it is trying to think about, 'Well, what was the planning and what were the development rules set up for?', so that you can actually have a tree, one, that is going to be climate tolerant, because we know things are getting hotter. We cannot put those old leafy elm trees in anymore because we know they will not survive. But then what about the underground infrastructure? Is there room for the root system to actually grow so it is going to sustain itself? And then who is going to be managing and watering and looking after that tree? We have got to think about all those really practical things that go with it. Again, if you have got a local government that needs to water twice as often as another area of Melbourne where it is going to just naturally get more rainfall, it puts pressure back on that local government to look after the trees.

In other research we actually found that people—this connects back to Ian's comment about 'Where does transport fit in this?—are having to drive everywhere. What we found actually in areas of Wyndham was people were running over their trees because they needed more places to park their cars. So it is that integration, Ian—exactly what you are talking about: you do not think of environmental infrastructure connected to transport and jobs, but it does all kind of link up.

The CHAIR: Yes. We have got very narrow streets—the newer the estate is, the more narrow the street—and they have got cars. Children get their Ls and Ps and there are cars everywhere, but the cars need to be parked somewhere, and the streets are so narrow that you park on the nature strip on top of—yes. So you have got rows and rows of just bare streets—nothing.

Assoc. Prof. VEITCH: Yes. I guess I would just like to reinforce what Melanie was saying. A lot of our work has been in the disadvantaged suburbs and with groups from varying cultural backgrounds, and I think it is key to understand what is their reason for using these spaces. A lot of it is for the social reason. I know from one of the studies we conducted that almost 52 per cent of the reasons for visiting our public open green spaces was for large social gatherings with family or friends. I guess if we can understand the purpose of the visits and how they are using the spaces, that is really critical to informing design and to ensuring that it is meeting their needs. So it does vary for the different demographic areas, and I guess this is something that we need to consider.

We have done multiple natural experiments. One was with the Cancer Council, so it is also looking at—we talked about the shade—sun protection, from skin cancer, which is something we did not touch on earlier when we were talking about the shade. We are also doing an experiment at the moment which is looking at the changes for a youth space, designed just for youth, in a very disadvantaged area. That is involving in-depth discussion with kids from all sorts of backgrounds. So this work is happening, and it is critical for informing design.

Assoc. Prof. DAVERN: And just to go with that, to follow on, Jenny, we had another student who looked at disadvantaged communities and street tree value, and actually the connection to culture came out in some of the different cultural groups too. She actually found that, say, people from Greece or people from Turkey liked a particular type of cypress tree that was in their local community in the outer north because that connected them back to their feelings of home. They all value trees just as much as anybody else, but the only issues that came in were again around the maintenance of those trees: if nobody came and looked after those trees, then they had flooding and they had the leaves being dropped and so on. So it all kind of came back to the importance of maintenance in these spaces. I do not think I can make that really as important as possible through this conversation, because I do feel for local governments who get stuck with this, and none of that support goes back to them to make sure that these spaces are upkept.

The CHAIR: Thank you. That is very valuable information, I think. Sorry, Will?

Mr FOWLES: Sorry, Chair. I have got a couple of questions around the competition for green transport links. I just want to know when the right time to raise those might be.

The CHAIR: Go for it.

Mr FOWLES: Okay, cool. I guess this is probably for Jenny and Andrew in the first instance. We are seeing a lot of competition particularly between cycling and walking. Often there are shared-use paths put in place, and with the electric bike phenomenon I think we are seeing bikes travelling at much higher minimum speeds, if you like. People are not often coasting at 10 or 15 kilometres an hour; they are coasting at 25 or 30 kilometres an hour. I have seen a few tricked-up electric bikes barrelling along paths that are used by people to walk their kids to school at upwards of 40 kilometres an hour. I wonder what research has been done into the importance of that grade separation between walking and cycling and to what extent other active transport links ought be prioritised by government and how we might best achieve that.

Assoc. Prof. VEITCH: I will go first. Obviously any provision of walking and cycling paths is an absolute bonus—well, not really a bonus but essential for our future planning. But, I mean, separated lanes are obviously the optimal in terms of safety and usage and ensuring optimal use. We want to have separated lanes, but obviously that is not feasible in every situation. So where possible we would advocate for separated lanes for walking and cycling, yes. I am not sure if that—

Mr FOWLES: Well, I guess I am interested in if there is that balancing exercise. Is it better to have a shared path than no path at all? I presume that is yes.

Assoc. Prof. VEITCH: Yes.

Mr FOWLES: But to what extent? I mean, we would all like to grade separate everything. We would probably love in an ideal world to grade separate trams and cars. But at some point you are using ever-

increasing amounts of space for that grade separation, and there is a trade-off, then, with the amount of green space there is and other things. Where do you see that balance being struck, and to what extent can public policy influence that in a good way?

Dr WOODCOCK: Can I jump in here?

Mr FOWLES: Yes, sure.

Dr WOODCOCK: I would just say stop using the word 'balance'. Transport policy has been monopolised by the use of the word 'balance' for decades now, and what it has led to is a continuation of the car-centric paradigm that was set up since the late 1950s, as evidenced in the 1969 transport plan, and nothing has really changed since then. It is not about balance; it is about shifting things away from cars to other forms of transport—active and public transport. It is as simple as that. It is not about balance at all, and as politicians you need to be aware of that.

Assoc. Prof. DAVERN: Okay, I will go on after Ian—good on you, Ian. To follow on from Ian's point, the way we plan now is really car, then maybe somewhere down the road comes cycle and then pedestrian. So we want to flip that on its head basically, and I am sure Jenny would agree with this too. We want to go walking, then cycling, and then where do we fit the car? So that is a complete shift, and exactly like Ian says, we have been planning the opposite for 50-odd, 60 years. But when it comes to separation we know that obviously if there is a road we need cyclists to be separate from motor vehicles—that is the key. And then we want walking. So you can see, say, in a CBD area, we have got that in some places, okay—separation off the road, on the road and so on. But when it comes to a park, if you have a shared path—and I am sure we have all experienced this—you could be walking along, and then there is a pedestrian. You could be riding your bike along, and then there is a pedestrian. It becomes a kind of conflict there—you have got bikes and people—and it is not a relaxing experience. It is also not the safest experience. So yes, we need paths. In any public open space I would advocate for paths because paths are important for physical activity and for usage. We know that that is one of the key features that we want in an open space because it is really associated with people using them. But if you can, then the priority is to separate bikes and walking, because that will create a better experience for everyone. You are more likely to support older people; you are more likely to support people with disabilities and so on. As soon as we put them together we are going to have conflict, so we can only advocate for the ideal, which is separation of walking from cycling and definitely separation from the motor vehicle.

Mr FOWLES: So can I ask: to what extent is that shift that Ian alludes to demand driven and to what extent is it supply driven? You know, people just naturally want to ride bikes, but if you in fact build the paths and the infrastructure, does that then accelerate the shift or even cause it? Can you talk us a bit through the international experience particularly around that?

Assoc. Prof. DAVERN: Well, look at COVID. Do we need a better example? We have had our own natural experiment over the last 12 months, right? I found it fascinating because obviously I am a cyclist and I am a pedestrian. I do drive a car too, but I would prefer to cycle over driving. Now, driving through the city at the moment is hilarious, because I am going, 'Look at all these infrastructure changes that suddenly happened in the last three to six months that never happened in the rest of my whole lifetime!'. So that is really demand driven, isn't it? It was a demand-driven exercise that people are going to use these more, we are not going to be using public transport, we do not want them on the road, so we are going to create the infrastructure. So that was one example of demand driven that could be created immediately. We do know that—and this is kind of going off the track a little bit—if you are going to create safe places for people to do these things, they will use them.

Dr WOODCOCK: Absolutely.

Assoc. Prof. VEITCH: Yes. We know if we create the right settings, they will get used. Look at the Tan Track around the botanic gardens in Melbourne, for example.

Assoc. Prof. DAVERN: Yes, and that drives me crazy because then you will see research come out that says, 'Oh, people in the outer northern suburbs aren't doing the same physical activity as people in South Yarra'. Do they have the Tan to run around every morning when they get up? No.

Dr WOODCOCK: If you look at Brunswick, for example, which has got the Upfield bike path running through it and Sydney Road, neither of which are ideal to ride a bike on, and yet we have very high levels of cycling in Brunswick. Okay, it is probably the highest—

Assoc. Prof. DAVERN: Twelve per cent—it is one of the highest in Melbourne.

Dr WOODCOCK: Twelve per cent. So even though the infrastructure is far from ideal, there is a lot of demand. I would say there are masses of latent demand. If the proposals to put full-time cycle lanes on Sydney Road and continuously upgrade the Upfield bypass all the way were implemented, we would see a massive uptick in latent cycling demand, and if all the other improvements that are in the current 10-year plan of Moreland City Council were implemented, we would see huge uptake.

Assoc. Prof. DAVERN: And if you look internationally, if you look at the Netherlands, right—I know, Thami; I will come back—they are not exercising, walking, cycling in the environment that we have got. Sorry, Thami.

Mr FOWLES: Yes. Thami?

Mr CROESER: That is all right. I just wanted to introduce some stats that I have just seen on these things. London built 100 k's of new bike lanes through the pandemic. They saw a 200 per cent increase in cycling. So people are using their bikes much more. In Paris, where they have also taken road space and built these bike lanes, six out of 10 of the people on these bike lanes—and they are seeing heavy use—are new riders. So if you build it, it seems like people come.

Mr FOWLES: Thami, would you mind sharing that research with the secretariat—I think they have been in contact with you at some point over this journey—just so we can make sure that we pick it up in long form for our report.

Mr CROESER: Sure.

Mr FOWLES: And, sorry, I think Jenny was—

Assoc. Prof. VEITCH: Yes. I mean, I spoke about our previous natural experiment. The other one I did not mention is just a very brief example. It was a natural experiment for a very small—very small—local neighbourhood park in a very deprived area of Melbourne. It was down on the peninsula. They installed a walking path around the perimeter of the park—very small, it was not particularly glamorous at all, no trees at all, but we observed a 500 per cent increase in vigorous physical activity in that park. So it is just an example that there is evidence that if you change the environment, it is going to have great consequence and impact on behaviour. So, yes. It is exciting because it shows that we have an opportunity to make a difference by changing our environments.

Mr FOWLES: So which jurisdiction does this best globally in your collective view?

Assoc. Prof. DAVERN: I think that is a political question, and I would not be surprised if the rest of us—

Mr FOWLES: I am a politician.

Assoc. Prof. DAVERN: I know. The rest of us are all going to go, 'We don't care who does it as long as someone does it', right?

Mr FOWLES: No, no, I appreciate that. But what I am after here is if we bring forward some recommendations about this, it is helpful to be able to point to some empirical evidence. Clearly Australia is not the world leader on active transport, so which jurisdictions should we be referencing in our thinking about it? Thami?

Mr CROESER: Amsterdam; you want Amsterdam. It is a great case study, because the bike use there is massive—I think it is the main way people get around. I think it was just in the 70s that their cities were clogged with cars. So they have gone from heavy co-dependence to heavy bike use in a generation. That is the example that we really want to put forward.

Mr FOWLES: I am seeing plenty of nodding. Any alternate views?

Assoc. Prof. VEITCH: No, I agree completely. Copenhagen is also a fabulous example. They have created new walking and cycling paths throughout the whole of the city, which are overpasses that mean you can

basically traverse the whole city by walking and cycling on paths that are not integrated with the traffic. So those are fabulous examples there.

Mr FOWLES: Melanie, and then Ian.

Assoc. Prof. DAVERN: Sorry, Ian; I will be quick. I think part of this problem is that local governments are pretty stung. They have got these budgets, and they are trying to support so many things. In my opinion, in terms of municipal public health they really are punching above their weight, but they have got a small budget to try and do everything. So if I was going to argue for anyone to take control, I would probably say at the state level that state says, 'We're going to do this and make this happen for you', knowing that maintenance is going to go to local government. But these are really important questions. It is not really political at that point, it is actually about who has responsibility. It is really frustrating as even as a local resident. You are going, 'One street's beautiful because that's VicRoads; the next street's terrible because that's a local road'. Where you live in that experience—you know, it needs to be directed, it needs to be pushed. Why can't it be connected to *Plan Melbourne*? I am sure I can dig up some recommendations in terms of *Plan Melbourne* that would link to exactly this work.

Mr FOWLES: Yes. Ian.

Dr WOODCOCK: Yes, just to reinforce the focus on Amsterdam, I think one of the reasons why Amsterdam would be worth looking at, when you drill down to the micro level, is because they have been doing it so long and because of the variety of solutions that they have implemented for dealing with the problem. I think the difficulty about some people's thinking about this is that they have become rather fixated on a one-size-fits-all solution. If you look at Amsterdam, there are many different ways of dealing with this problem. Amsterdam is a very rich, complex and historical city with many different kinds of urban environments—probably more than we have actually. Therefore I would reinforce that if there is one place you really should look at, you should go to Amsterdam.

Mr HAMER: Can I just follow up on that and say: I have not been to Amsterdam or Copenhagen, but they strike me as historic—you mentioned that—and traditionally relatively small cities, particularly compared to Melbourne. There may be certain similarities, more, I would say, with the inner part of Melbourne but particularly in the suburban area, in actually creating that environmental infrastructure. I was wondering if there are any cities, particularly, I would say, the North American cities, which are probably culturally more similar to Australian conditions, particularly suburban conditions—cities or parts of municipalities—that have actually done this really well? There may not be, but I would be interested in knowing if there were.

Dr WOODCOCK: It is interesting that North America is seen as more culturally similar to us. If you look at what is going on in terms of COVID, you would not say that, would you?

Assoc. Prof. DAVERN: Yes, and Paul, can you clarify: exactly which bit do you mean? We have had a broad conversation there. I am interested in which specific bit.

Mr HAMER: I guess just leading on from Will's question, where he said, 'Where should we look for international examples as to best practice, as to what we could do or suggest be introduced, in the Victorian or Melbourne context?'. To me, there is a lot more similarity in terms of our city structure, particularly once you go outside the 5 or 10 k radius from the centre of the city, with North American cities or with cities in New Zealand—and maybe cities in Great Britain, but they are probably a bit more historic and have a more historic legacy—that may have put those things in place. The cities that I am particularly thinking of are perhaps in the Pacific Northwest or in British Columbia. Again, I have not been to any of them, but I have read some reports about Portland, Seattle, Vancouver, Victoria—those sorts of places—having quite strong environmental infrastructure policies. They are generally all surrounded by native forests, and there is a very large outdoor culture of going out and walking and hiking in those types of environments. And to me, some of the examples and implementation measures that those places would have taken may also be transferable or perhaps more transferable. I was just wondering if perhaps they are good examples or perhaps you know of other examples that may be considered.

Assoc. Prof. DAVERN: I think for large-sized cities, Portland has been a leader for a long time, that is for sure. Definitely in terms of integrated transport strategies and so on—yes, I would agree on that. That is why I ask: which part? I can think of even some work in Chicago and Detroit, where they have done some great work

in terms of urban greening, but I can also think of some good work, say, in a city like Denver. They have done some amazing community engagement and citizen-engaged planning work, and they have really strong active transport routes throughout. But I cannot tell you otherwise. Like, I think there is one city that you could look to in North America that is the stand-out.

Mr HAMER: Yes, and look, North America and these cities are incredibly diverse, but I guess here is the opportunity to take the best bits of various different cities. Like you say, if there has been an urban greening approach that has worked really well in Chicago, well, maybe that is a model to look at from an urban greening perspective, but in terms of the environmental infrastructure and bike paths and intermodal work, maybe it is Portland. I know I have seen quite a few examples. I think we talked earlier about the combinations of sort of expanding school boundaries—you might have even mentioned it—and I think that work has been done quite a lot in the Netherlands. I think there is an opportunity to take the best bits from around the world in various different cities. I doubt that one city has it all and ticks all the boxes, but I guess that is what we would be looking for. If there are good examples of different infrastructure or different mechanisms from different places, that can sort of feed into the report and then feed into the recommendations.

The CHAIR: Thank you, Paul. I am going to throw to Will as we start to wrap up the questions. Will.

Mr FOWLES: Thanks, Chair. My question is a kind of generic one, and it is: if you were to change just one thing about government policy to improve the outcomes and environmental infrastructure, what would it be? I am going to start with Ian, who has had very strong opinions on most things today.

Dr WOODCOCK: Well, I think thinking through all of the things, I would suggest that you remove the minimum parking rates in the apartment and dwelling design standards and leave it up to the market.

Mr FOWLES: Thank you. Jenny.

Assoc. Prof. VEITCH: I think it would have to be highlighting or making more of a focus the importance of the quality of our parks in terms of design and maintenance.

Mr FOWLES: Thank you. I will go roughly in alphabetical order from here. Melanie.

Assoc. Prof. DAVERN: I think it will be thinking about the multiple benefits of environmental infrastructure, so thinking about it in terms of health, wellbeing, connection to nature, biodiversity, ecosystem services, urban cooling and connection to the sustainable development goals.

Mr FOWLES: And Paul.

Mr FARLEY: Probably looking at sort of joined-up planning and funding across all of Melbourne, whether they are councils or water bodies or whatever else, so we get one big plan.

Mr FOWLES: Excellent. Thami.

Mr CROESER: Rate capping. I think we need to take the brakes off before we press the accelerator. We need our institutions to have the capacity to deliver this stuff and maintain it.

Mr FOWLES: Yes. Is there anyone else still on the call who has not got their video on? No? Beauty. All right, Chair; I am done. Thank you all very much for your contributions today. It has been a really, really good discussion.

The CHAIR: Yes, I follow that sentiment. This has been fantastic. I feel like we could talk all afternoon. I do not know about Will and Paul, but there are a couple of people here I would like to take offline and talk to about my area in particular and about other things, so you will probably hear from me. I just want to say thank you so much for taking the time to talk to us. You have touched on a lot of similar themes to what we have heard, but most importantly you have really touched on a lot of new stuff that has not yet been presented to the committee as part of this inquiry, which is incredibly important and has given us quite a lot to think about and digest in coming weeks. We will leave it there, and we will end the live broadcast now.

Committee adjourned.