

LEGISLATIVE ASSEMBLY FOR THE AUSTRALIAN CAPITAL TERRITORY

STANDING COMMITTEE ON ENVIRONMENT AND TRANSPORT AND CITY SERVICES

(Reference: <u>Nature in our city</u>)

Members:

MS S ORR (Chair) MISS C BURCH (Deputy Chair) MR J MILLIGAN

TRANSCRIPT OF EVIDENCE

CANBERRA

WEDNESDAY, 29 MAY 2019

Secretary to the committee: Ms A Jongsma (Ph: 620 51253)

By authority of the Legislative Assembly for the Australian Capital Territory

Submissions, answers to questions on notice and other documents, including requests for clarification of the transcript of evidence, relevant to this inquiry that have been authorised for publication by the committee may be obtained from the Legislative Assembly website.

WITNESSES

BRADY, MS ERIN , Deputy Director-General, Land Strategy and Environment, Environment, Planning and Sustainable Development Directorate	. 194
CUSACK, MS KATHY , Executive Group Manager, Planning and Building Policy, Environment, Planning and Sustainable Development Directorate	. 194
GENTLEMAN, MR MICK , Minister for the Environment and Heritage, Minister for Planning and Land Management, Minister for Police and Emergency Services and Minister assisting the Chief Minister on Advanced Technology and Space Industries	194
GLENNON, MR CHRIS, Manager, Catchment Management, Environment, Planning and Sustainable Development Directorate	194
JADE, MS MIKAELA, Manager, Community and Visitor Programs, Environment, Planning and Sustainable Development Directorate	194
McGLYNN, MR GENE, Executive Group Manager, Climate Change and Sustainability, Environment, Planning and Sustainable Development Directorate	194
WALKER, MR IAN, Executive Group Manager, Environment and Heritage, Environment, Planning and Sustainable Development Directorate	194

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Amended 20 May 2013

The committee met at 3.06 pm.

- **GENTLEMAN, MR MICK**, Minister for the Environment and Heritage, Minister for Planning and Land Management, Minister for Police and Emergency Services and Minister assisting the Chief Minister on Advanced Technology and Space Industries
- **BRADY, MS ERIN**, Deputy Director-General, Land Strategy and Environment, Environment, Planning and Sustainable Development Directorate
- WALKER, MR IAN, Executive Group Manager, Environment and Heritage, Environment, Planning and Sustainable Development Directorate
- **CUSACK, MS KATHY**, Executive Group Manager, Planning and Building Policy, Environment, Planning and Sustainable Development Directorate
- McGLYNN, MR GENE, Executive Group Manager, Climate Change and Sustainability, Environment, Planning and Sustainable Development Directorate
- GLENNON, MR CHRIS, Manager, Catchment Management, Environment, Planning and Sustainable Development Directorate
- JADE, MS MIKAELA, Manager, Community and Visitor Programs, Environment, Planning and Sustainable Development Directorate

THE CHAIR: I declare open this seventh public hearing of the Standing Committee on Environment and Transport and City Services inquiry into nature in our city. The committee announced this inquiry on 6 December 2017 and has received 71 submissions, which are available on the committee website. This is the seventh of seven hearings that have been conducted between March and May 2019. Today the committee will hear from the ACT government. On behalf of the committee, I thank all the witnesses for making time to appear today.

Before we begin, I acknowledge that we meet on the land of the Ngunnawal people and pay my respects to their elders, past, present and emerging and also extend a welcome to other Aboriginal and Torres Strait Islander people who may be with us here today.

We move to our witnesses appearing today, Minister Gentleman and officials from the EPSDD. On behalf of the committee, thank you for appearing today and for your written submission to the inquiry. Can I please ask you to take a moment to read the pink-coloured privilege statement before you on the table and remind you of the protections and obligations afforded by parliamentary privilege. Once you have had a chance to look over that, can you please confirm for the record that you understand the privilege implications of the statement?

Mr Gentleman: Yes, we do.

THE CHAIR: Can I also remind all witnesses that proceedings are being recorded by Hansard for transcription purposes and are being webstreamed and broadcast live. Minister, would you like to make any opening remarks?

Mr Gentleman: Yes. I recognise your acknowledgement of our Indigenous culture. I recognise that we are meeting on the lands of the Ngunnawal people and I respect their continuing culture and the contribution they make to life in this area. I do that

because the Ngunnawal people have a deep physical and spiritual connection with country and a cultural responsibility of care for it as well. They are part of country, not separate from it but often described in the simple phrase: "If we care for country, country will care for us." The philosophy is embraced by the ACT government as we increasingly recognise that nature, our environment, is the foundation of our wellbeing, including our social and economic prosperity.

Canberra's natural environment is integral to the city's image, its lifestyle, for the conservation of biological diversity and for the services it provides, including clean air and water. If you can imagine Canberra without nature in the city, the bushless capital with air and water pollution, no kangaroos, bettongs or corroboree frogs, and no green space to recreate, recharge or relax, it is not the Canberra that I have grown up in and that I love as well. We want to make sure that we keep it for the future. That is why we are continuing to invest in maintaining, conserving and restoring nature in the city.

Additionally, as we continue to tackle climate change we need to recognise that we will have more heatwaves and hot days, increasing high bushfire danger weather and changing water cycles as well. Nature provides resilience to these stresses. Maintaining nature is one of the most effective tools in mitigating the impacts of climate change.

The government's submission outlines the value of the natural environment to a changing, growing and increasingly urban city of Canberra. In partnership with our community, the government has a key role in protecting, preserving and enhancing the natural environment while also considering the needs of a growing city. The government believes these considerations are complementary and form the foundation of our wellbeing, benefitting all Canberrans. In this submission the natural environment is considered to include national parks and reserves, urban parks and connecting green spaces. Within the city we refer to living infrastructure, the natural elements and features such as wetlands, the urban forest and green refuges that are incorporated into the design and operation of cities.

The natural environment is precious for its intrinsic value as well as many social, economic and environmental benefits. Our natural environment, of course, connects communities, reflects our culture, provides a classroom for lifelong learning, provides resilience against the changing climate, gives us clean air and water, contributes to our economy and is part of a thriving tourism industry as well. The ACT government is committed to nation-leading approaches to enhance nature in the city. Thanks for the opportunity.

THE CHAIR: The Australian Institute of Landscape Architects recommended a detailed landscape strategy be prepared for the ACT. Other groups have also put it in their suggestions. I asked pretty much everyone, so I will ask you too: what is your view on this suggestion? What do you think should be included in the strategy?

Mr Gentleman: There is an opportunity, I suppose, to include quite a bit of what I have just described in the opening speech in such a strategy. But I might pass over to our environmental expert to give you more detail on what we could do in that space.

Mr Walker: Thank you for the opportunity. As the minister has highlighted, I think we recognise that nature is fundamental to the wellbeing of ACT residents and the broader community. In terms of responding to and thinking about how landscape architects consider the ACT, we need to recognise and build off the legacy of, firstly, the traditional custodians and recognise their role in how the future landscape of the ACT should be shaped but also then building into the context of the Burley Griffin plan and what that looks like, and then considering the environmental aspects and connectivity aspects associated with nature.

The city is a planned city, and that does provide us with great benefit. We already know that some 70 per cent of the ACT is protected in parks and reserves. That provides a very strong foundation for us. When we look at the global target for areas protected—the global target at the Aichi level is 17 per cent protected—we are well in excess of that. We are setting a new benchmark for conserving parks and reserves. That should form, and does form, the foundation on which a good landscape plan and a good strategy would be built. Having those areas in the city also provides deliberate connectivity. Connectivity is a cornerstone of conservation restoration across the country. Connecting our urban, middle-of-the-city environment with our more regional areas is part of a well-planned and well-designed landscape-based approach.

THE CHAIR: You touched on this in that answer, and it has been raised. We have had quite a few people touch on the Griffin legacy, but also quite a few people raised the importance of country to the Aboriginal and Torres Strait Islander community. I want to get a sense from you whether there is anything you would like to add to how we can incorporate all those different histories into a future reality.

Mr Walker: Certainly. I will start by certainly recognising the traditional custodians and the Ngunnawal people and highlight the particular shirt that I am wearing today as a symbol of that transition and recognition of country, as we are in Reconciliation Week. This shirt was designed by, and the painting that it was taken from was done by, a young Ngunnawal artist, Lynnice Church, a 16-year-old. We purchased that painting from her and that is what the design represents. Importantly, the green circles represent country, the purple circles represent community, Ngunnawal community and the broader community in a reconciliation process. And the pathways, which you probably cannot see from the shirt today, connecting those are about that ongoing connection.

Bringing that history, that knowledge and that experience to the contemporary Australia that we have here and building the capacity of traditional custodians is the first step. We have deliberately taken approaches through our action plan—the Aboriginal and Torres Strait Islander agreement and our action plan to support that to enable us to build capacity. We have a youth capacity building program and an elders capacity building program to help community return to country and start to put their aspirations into looking after country.

We have also established a traditional custodian committee made up of traditional custodians, and they are guiding and providing direction on their aspirations and how they would like to see contemporary Australia represented through an Aboriginal cultural lens. That is a long introduction to the first part of that response.

Marrying both Aboriginal culture and the western science elements, and how we conserve and enhance nature in the city, are hand in glove. I think an important step for us to recognise is that traditional custodians have understood that the "caring for country, country will look after me" philosophy is at the heart of how we are now progressing into the management of nature in the city. Combining that with the work that the planning part of the directorate undertakes in ensuring a compact and efficient city also gives us strength around building connection with our traditional custodians. I will leave it there, unless there is a follow-up question.

THE CHAIR: That was very comprehensive.

MR MILLIGAN: To what extent are the traditional custodians involved in the maintenance of our natural reserves and areas that are not natural parks—reserves, open green spaces—throughout the territory? Putting Namadgi and other national parks aside, what involvement do the traditional custodians have in the maintenance of those areas? What input do they have?

Mr Gentleman: I suppose, overarchingly, they are embedded in our range of services. They provide the cultural knowledge as well as the physical work and storytelling at the same time. Sometimes it could be in Namadgi or it could be in parks such as the one that was recognised for Aunty Agnes Shea in Gungahlin in Heritage Week last year. They provide us not only with the knowledge of the past but the preservation for the future in how to maintain those sorts of areas and embed their storytelling in those as well.

Mr Walker: To add to the minister's comments, on all aspects of park management—managing parks and reserves across the ACT, 70 per cent of the ACT—we now have this traditional custodian committee that will guide and help us support management of country. In addition, in the development of management plans—as you know, we prepare management plans for each of our parks and reserves—the committee has now explicit engagement with traditional custodians to understand their aspirations for how to look after country. We recognise that in our management plans.

With some of our new reserves we have started to explore naming and clear signage to show how country reflects the aspirations of the community. To take that a step further, our heritage team within the directorate also has strong engagement with Aboriginal parties who inform cultural obligations around protecting cultural sites, and we continue to engage with them about how to look after site-specific values but also more broadly about how to consider country in all aspects of what we do.

That goes to things like fire management. We have been heavily involved with Ngunnawal around the development of fire plans and also cultural burning processes. On our staff we have some 23 Aboriginal members directly engaged with Ngunnawal and other Aboriginal and Torres Strait Islander people to deliver cultural burning. Likewise in the water context, we also have a water program associated with the Murray-Darling that we are working with Ngunnawal on to understand what their views and needs are around the management of water.

MR MILLIGAN: Does the directorate employ Ngunnawal custodians directly or are

they just there in an advisory role?

Mr Walker: Both. We have both Ngunnawal employees directly employed in the directorate who provide management and operational delivery and we also engage with Ngunnawal elders to inform and provide direction.

MR MILLIGAN: How do you decide which Ngunnawal elders to approach, or is it open? How can they get involved?

Mr Walker: We open that up to all Ngunnawal people. I guess the important aspect is that we are managing country with community and that community is the Ngunnawal community and we have opened the door for the Ngunnawal community to engage with that on their terms. The traditional custodian committee is very much about empowering and enabling traditional custodians to determine and self-determine their aspirations for country.

MR MILLIGAN: Are there any Aboriginal people employed as rangers in the territory?

Mr Walker: Yes.

MR MILLIGAN: Where are they mainly focused? Where is their work mainly focused, what areas?

Mr Walker: We employ rangers of Aboriginal and Torres Strait Islander descent and they occupy a number of locations across the ACT, both in Dickson, at our office, but also in regional areas, Namadgi, Tidbinbilla, the locations where we have large park areas but also where our work centres are. As I have said, we have got some 23 staff employed in the directorate and they primarily are focused on looking after country.

Mr Gentleman: A really good experience I had last year with our Indigenous rangers was looking after the area around block 33 in Pierces Creek. It is an area where they have a lot of Xanthorrhoea trees and the Indigenous people, the local Ngunnawal people, were showing us how they managed that area in the past and how they could manage it into the future with light cultural burning, ensuring that the trees are kept in position to keep growing but also ensuring the history of Indigenous culture around the specificity of the trees themselves.

They actually use them as a compass. The flower at the top of the Xanthorrhoea tree would generally only flower to the north. You could have a direction by simply looking at the flower of the Xanthorrhoea tree. Indeed, when burnt of course they continue to flourish but they have a sap that is then used for glue. They were able to use that in the past for gluing objects. Their storytelling was really quite pertinent.

MISS C BURCH: Changing topics a little, minster, in your submission you talk about interaction with nature providing a range of health benefits, including physical and psychological wellbeing. What work is the government undertaking to further promote these benefits and encourage Canberrans to better engage with their natural surroundings?

Mr Gentleman: We really have some strong plans for ensuring that we can build health and wellbeing by using our nature parks. I think I gave some of that in the opening statement. There is direct evidence of physical and psychological wellbeing benefits from using nature parks and physically walking through them, or other activities you might chose. Access to really good quality, well-maintained spaces can help improve physical and mental health by encouraging us to walk more or play sport or simply enjoy the natural environment. We want to ensure that we can continue that process as the city grows as well.

The prevalence of obesity in Australia has more than doubled in the last 20 years. Data from the Australian diabetes obesity and lifestyle study indicate the total direct cost for obesity in 2005 was \$21 billon and today 63.5 per cent of the population are overweight, equating to about 266,000 people in the ACT. If we can encourage people to get out and use those active spaces we can not only give them the opportunity to make themselves better in a health sense but also there is less impact on the health system. The research simply shows that being in nature is really good for you. A survey in Brisbane, I think it was, recently suggested up to seven per cent of depression cases and nine per cent of high blood pressure cases could be prevented if all the city residents were to visit green spaces at least once a week for an average duration of 30 minutes or more. The evidence is out there, and we want to encourage more people to do that.

THE CHAIR: Minister, on that note, obviously the nature parks are integral to that, as is providing access to really pristine areas, but within the more urban environment how do you see the provision of green spaces and landscape facilitating the healthy outcomes you have just outlined?

Mr Gentleman: We have different variations of urban area across the city. My suburb has a fantastic amount of green space with great walking opportunities. I take the opportunity to walk for at least an hour every single morning, even though it is freezing cold in the middle of winter. It gives you that perspective of being in nature but also it keeps you healthier and makes you feel better.

We are working with other directorates on ensuring that we keep those urban open spaces across the ACT to encourage people to do physical activity. EPSDD is also working with Health to establish nature prescriptions and initiate encouraging maybe health providers to prescribe a walk in the park with health rangers. We know from other jurisdictions that this has been incredibly successful.

THE CHAIR: Could you elaborate a little further? That is a new concept that the committee has not heard before. Could you elaborate on what is meant by that?

Mr Walker: Yes. Nature prescriptions is effectively a partnership between health providers and environmental professionals where health providers prescribe, encourage, promote activity in nature. Research globally highlights that getting people into nature—and the minister has highlighted the benefits of that—and being active in nature is better for them than being in a gym or in other physical activities because there are a range of other benefits that come from that. Obviously fresh air and green space promote a sense of wellbeing. From both a physical and mental perspective, the evidence nationally and internationally is overwhelming that getting people active in

nature, and also in groups to break down social isolation, is extremely powerful.

Nature prescriptions are being modelled off programs that occur in the US. They have a program called park prescriptions which is based out of San Francisco, and it has demonstrated over time substantial improvements in human health and benefits in connecting people with nature.

In the context of the ACT, we have got the physical assets. We have got lots of nature, and we live, on average, less than $2\frac{1}{2}$ kilometres—and I will come back to that exact point in a minute—from nearby nature; so it is very easy for us to connect. We are a small jurisdiction; so we have a network of health providers whom we can work with and we can encourage people to get into that space.

Nature prescriptions in the Australian context is a new initiative but it is very well documented in, as I said, the US and also in New Zealand. In New Zealand they call it green scripts, and again in New Zealand, where they have a proportion of the population that are overweight not dissimilar to Australia's, not dissimilar to Canberra's, they are showing remarkable improvements in health outcomes.

We get a double-edged benefit here. We get a benefit from health perspectives. Every person that we do not put into hospital means that we ultimately save money and we ensure that people are healthy, and every time we connect with people in the natural environment we get them to care about the natural environment. You get two benefits from running the program: (1) you get a health benefit, both physical and mental; and (2) you also get an environmental benefit because what people care about they look after.

Our function within the directorate is very much about connecting people with nature and getting more people more active, more involved in the natural environment. And that means supporting groups like catchment groups, ParkCare groups and other volunteer-based organisations to assist with the management of land. Also, importantly, it brings groups together for their social wellbeing, their physical and mental wellbeing.

That was a long answer, but that is the proposition around nature prescriptions. The Health directorate and others have been heavily engaged in the process of developing it, and we will look to kick that off in the new financial year. That will also tie in well with the Chief Minister's wellbeing indicators that the Chief Minister has promoted recently, and we will look to establish that as a whole-of-ACT-government proposal around wellbeing indicators.

Mr Gentleman: I have got some pictorial evidence of the difference between walking in an urban open space and in gyms. This is from this morning at around 7. For the Hansard, you will see a fantastic rainbow over the top of the Brindabellas. You do not get that inside a gym! It was particularly cold but it was a good sight.

MR MILLIGAN: There seems to be a trend in our newer suburbs that residential blocks are much smaller and urban infill seems to be a high priority of the government. We are starting to see a lot of high-rise development in our suburban areas. We have learned from a number of submissions and through our public hearings about newer

suburbs being warmer than our older suburbs that have a lot more tree canopy and so forth. What approach is the government looking at taking to provide adequate tree cover for the newer suburbs, considering that there are a lot more hard surfaces, as indicated by a lot of the submissions? What are you doing to try to combat and address that issue that has been raised?

Mr Gentleman: It is a very good question. I will go back to some history first. I was lucky enough to be born and grow up in Canberra, and I have watched the structure of how we live change quite dramatically. We grew up on a large urban block in Reid, in a very small house, a two-bedroom home with an almost 1,000-square-metre block. That was so that you could grow your own gardens, have your orchard and your chickens out the back and be self-sustainable and share your food with other residents. People live differently now and they want to live in a different way.

During the statement of planning intent workshops, one of the really interesting groups that we had were the younger demographic, usually from 22 downwards. We had 100 people turn up to our event on a Friday night. We did offer some pizza but they turned up readily and gave us their explanation of how they would like to live in the future. It was not about the built form per se, but they said they would like to live closer. They wanted to live closer to urban open space, to good amenity, close to their workplace and close to places where they would recreate. They are happy to live in a denser area as long as those urban open spaces give great amenity.

So that is the condition we have put into the planning strategy we announced last year: as we go forward into further density in the city, ensuring that we have really good urban open spaces and public amenity. The challenge you have seen is to ensure that we have really good tree canopy as well, to stop the heat island effect in the urban areas.

Mr Walker: The proposition here is clearly about how we can reduce heat stress. We know that heat stress in relation to climate change does have an impact on the mortality of people, both young and old, so it is a really important element that we need to address as a city. Across the country, other jurisdictions are establishing targets for tree canopy cover as a way of introducing living infrastructure into our environment. It really does need to build on that. Gene, who has been leading our work in living infrastructure and climate change, is well placed to respond.

Mr McGlynn: I think the question started with the issue of heat stress. This is something that we have looked at in quite some detail now. The CSIRO has done some work looking at heat mapping right across the urban area of the ACT. It certainly identifies that the commercial centres and some of our newer suburbs do have heat stress issues. This is important. We have also done some studies around what that means, and these show the difference between a shaded area and a more hard-surfaced area without any shade—typically six to eight degrees is not uncommon in the summer. At the extremes it is 22 degrees. So the need for some sort of cover to address these things has been clearly recognised and measured.

In terms of how to deal with it, it is important to remember that any new suburb is likely to have a lower tree canopy cover, simply because it is new. So we have to look not just at what it is now but also at what is likely to be the situation once the

201

vegetation does grow. Certainly dense development can create challenges for those tree canopy covers. So we have been looking at issues around how to deal with that. Certainly there has been a lot of discussion around targets and what they might be, and that is under active consideration. A number of other jurisdictions have adopted these targets. But we are also looking at what can be done to address them, because adopting a target in itself does not actually deliver any real outcome. I think there is an expectation that trees are the only answer to these things. That is not the case. So we started looking much more carefully at the other solutions that are available, both in high density and in lower density. Trees are definitely an option but there are also things like green roofs on various sites. This is where you put vegetation of various sorts on a roof. They can be—

MR MILLIGAN: Commercial areas.

Mr McGlynn: Or houses.

MR MILLIGAN: Predominantly houses?

Mr McGlynn: They can be on any building. We have not seen many of those in the ACT to date, but they are certainly more common around the world and something that has been looked at more and more. There are also living walls, which effectively are like vertical green roofs but where you have vegetation growing up. The Nishi building down in Acton is an example of that sort of approach.

There are also water treatments. Water bodies also have a cooling effect on the environment. So it is not just greenery but it is also how we use our water. The difference between an irrigated grassland and an area of astroturf or some other sort of surface is quite dramatic in terms of the coolness it provides. So there are a whole range of different applications that have to be looked at across the place. What we are trying to do is develop a better understanding. We have been doing some work on what the range of these sorts of applications might be and how they might be applied. We are now looking to see whether we can start developing some case studies of those.

If people are going to invest in green infrastructure and other living infrastructure, we need to make sure it is the right living infrastructure. As the climate changes, the sorts of trees and plants that are going to be successful in our climate are going to change as well. So there has been quite a bit of work recently in looking at what sorts of vegetation are likely to thrive in a climate in Canberra which is going to be warmer and drier in the future, which is going to change the things that can be done.

We have an active program, through our Actsmart program, of working with households to try to identify options for them to increase their green cover, including on things like balconies and things where—

THE CHAIR: Can you run us through some of the things that you look at with balconies? A central premise of this inquiry is how, as we urbanise, we can keep nature in our city. Certainly balconies present an opportunity, given that they are the outdoor space within a more dense urban form. Can you run us through some of the opportunities you see for balconies to bring nature into the urban area?

Mr McGlynn: The most obvious solution there is plants. There are plenty of people who put plants on their balconies. Depending on how they are designed, that could be built in as an integral part of a balcony. It is probably more commonly used in a sort of podium. When you have a high-rise building, you will generally have some sort of semi-public outdoor space that has an area where you can put in deep-rooted plants and all sorts of vegetation options: grass, trees, bushes, shrubs and a whole range of things.

THE CHAIR: What sorts of things, at the moment, is the government doing to enable people to realise the full potential of their balcony and to put nature on it?

Mr McGlynn: There is information available that we provide to households on what sorts of things are likely to be successful for them: plant selection, tools, advice on how to plant and these sorts of things in single-dwelling residential as well as higher density. Part of the Actsmart program that we have is to go out and talk to households all the time about how to save water, energy and waste, and we also talk to them about how they can improve their living infrastructure in their place.

MR MILLIGAN: A lot of suburbs are being established at Gungahlin, the second fastest growing area of Australia. We see a lot of suburbs being built there. Will we see a difference in the planning of these new suburbs compared to the suburbs built just a few years prior, to work towards combating the issue of the warming of the suburb? Or will it be more of the same? Will it be just smaller blocks, all hard surfaces and just the same as the previous suburbs built?

Mr Gentleman: The challenge is to bring the community along with us when we do this work, to ensure that we can provide the green and tree cover that we want to see for the future to combat the heat island effect. There was a lot of work in the government areas of Gungahlin in planting street trees that were later removed to allow for parking in residential areas where the parking was tight. The government came along and put the trees in place and then later they were taken away. So we have to ensure that when those trees are planted they stay and thrive so that they can provide sustenance for us and combat the heat island effect, but also to provide opportunity for more urban open space to allow street trees to be planted.

MR MILLIGAN: In our new suburbs we should expect to see adequate parking infrastructure but also the street trees to create that canopy? Has that been put in place in, let us say, Taylor or Throsby? Will we expect to see that sort of landscape there?

Mr Walker: I will ask Kathy Cusack to join us. Kathy leads our strategic planning within the directorate. But I will highlight that in the design and development of our new strategies those things are very much considered. We have a particular range of tools that we use. One of those is in relation to water. We have a water sensitive urban design framework which talks about how we ensure that water is used well, as a way of both cooling the city and also in terms of ensuring that we have long-term water into the future. That is a key component, likewise, keeping existing trees and ensuring that we have parks and areas in and around our new suburbs that enable people to get outside and interact with each other. Also, park areas, reserve areas or green spaces provide the important connection of habitat and cooling space, and our network of

203

tracks, trails and bike tracks is also an important element of how we can green and improve the living infrastructure across the ACT. Kathy can go into more specifics around the planning of the territory.

Ms Cusack: I note that the green space and the connections that Ian was talking about are also critical for mobility, connectivity and opportunities to move around informally, rather than using a road network. Having said that, we have a road network and we obviously will have going forward. We have the need, and the planning that we do is to arrive at a balance where we make sure that there is enough parking so that people who are using traditional means of transport, like a private vehicle, have the opportunity to park. But we need to balance that with what happens in the public domain, what happens when we consider appropriate street trees and so on.

When we did the planning strategy refresh last year, we undertook some research to look at living infrastructure and how, based on a series of case studies, we might best incorporate it on private plots and in public spaces. And as we go forward with individual variations to the Territory Plan and with the Territory Plan review, we will incorporate stronger provisions to ensure that we get the right balance between needs such as parking and needs for street trees and living infrastructure within the public way as well as on private allotments.

MR MILLIGAN: What can be done with our current suburbs? You mentioned earlier a lot that could be done, I would think predominantly in our commercial areas. What about the residential suburbs? It is much easier to do the rooftops and the garden walls and everything else in commercial spaces, but what about for the residential suburbs?

Ms Cusack: Opportunities for planting on private plots or in the public realm?

MR MILLIGAN: Just to provide adequate tree coverage, but you also said that tree coverage is not the one and only answer. What specifically could be done in our residential suburbs, new or existing?

Ms Cusack: Through the approvals process we do have provisions around the need for planting on residential developments as they come up. That might include dual occupancies, multi-unit housing and townhouses, depending on what is being applied for in which zone. We found when we did the housing choices project over the last couple of years that there was a general concern that those provisions within the current Territory Plan were not strong enough and were not being appropriately signed off by building certifiers when we got to the end of a building process for residential.

So one of the things we are doing at the moment is putting a Territory Plan variation through which will address specific recommendations from the housing choices work around living infrastructure. The intention will be that we will strengthen requirements and the need for the planting and living infrastructure components on private plots to be checked and approved before a development completion is issued.

THE CHAIR: It was raised by the Fenner School that the ACT invests, they might

say, too much money in the mowing of urban open spaces, particularly given that the mowing regime promotes the growth of weeds, such as a lot of African lovegrass. They said it would be much better to re-wild these areas and put in ground cover and shrubbery, and pointed to a few instances where that has been trialled. I would be very interested to gain the perspective of the government on this suggestion and wish from the Fenner School.

Mr Gentleman: We should acknowledge first that African lovegrass is a real problem, and we have our pest plant regime to do the best we can to look after that. We have ownership of the policy for pest plants in this directorate, then City Services do the physical work on the ground in the urban setting. We help our rural landowners and our cultural inhabitants in the parks area look after those as well. We have some really interesting stories about rural leaseholders that have completely cleared all of their area of African lovegrass only to find that the leaseholder next door does not, and then you have that crossover. We are trying the best we can to manage that problem.

Mr Walker: The minister has covered the pest plant related issues. We recognise the issues there and we do have significant programs and activities to try to manage pest plants, including our partnerships and work with Transport Canberra and City Services.

In the urban space we work closely with Transport Canberra and City Services to look at opportunities to re-wild, for want of a better term. I guess the classic example of that at the moment is the \$80 million that is invested in the healthy waterways projects. They are not just healthy waterways projects. They do have a clear benefit of water quality and improvement to our water system but they are also about the landscape that sits around those water infrastructure projects and the infrastructure around them—when I say "infrastructure" I mean living infrastructure—that is now being planted with native grasses and native species that provide a substantial benefit not only for a range of biodiversity outcomes and water quality outcomes but also in terms of managing pests and invasive species.

We are progressively working with TCCS to consider the best mowing regimes to benefit biodiversity and particular grasses. There are a number of locations now where we are starting to encourage the use of native species and species that are suited to the climate and to the climate that we will move into. We are doing some partnership work with TCCS and the University of Canberra to explore how those sorts of opportunities will continue to be recognised across both directorates.

THE CHAIR: You have brought up a partnership with the University of Canberra. We have heard from the Fenner School but we have also heard from CURF at the University of Canberra, and it seems like there are great opportunities there between the research arm and the practice of government. What opportunities do you see there? Are you already harnessing those, or do you see further opportunities that could be explored?

Mr Walker: There are a large number of opportunities. We are already harnessing many of those, and we harness those in a number of different ways. Clearly there is research activity and getting that information, but also many of the graduates that go through the various universities now work for us as well. So we do have a great

connection through the university sector.

Mulligans Flat is the classic example. It is a fantastic partnership between the Woodlands and Wetlands Trust, the ANU, and us. It is a good example of re-wilding where we are bringing back species that no longer occur in the ACT and enabling the recovery of those species. It is a fantastic joint partnership that is starting to work. The benefit of partnership is that you start to challenge each other. You start to push each other about which is the best path to go down.

Added to that, we have a conservation research group. That group is in the process of establishing a science plan that identifies the strategic direction around research for the next decade. We will then work with partners—the ANU and the University of Canberra—to implement that science plan and start to develop further information to inform the evidence on which we make decisions, inform our climate change activities where the opportunities present, and help guide our planning colleagues around where certain areas are of high value or are opportunities for other infrastructure or other processes to take place. So it is a very powerful relationship.

In other jurisdictions the return on investment ranges from \$1 investment to \$7 return, so there is a very good value proposition around working with partners. As I said, there are a whole range of additional benefits, including staff exchanges and new staff coming in with particular ecological or conservation-based skills.

MISS C BURCH: Your submission states that it has been estimated that the closure of Lake Burley Griffin costs in excess of \$20 million annually. What is the government doing to improve water quality and to reduce that cost?

Mr Gentleman: Lake Burley Griffin is under the control of the National Capital Authority but we do work with the commonwealth on that. One of the plans that we are working on as part of the water ministers group, with the Murray-Darling Basin Authority, is to look at the eradication of carp from our waterways in the whole basin. There is a plan to roll out a virus which will kill the carp, and we have all agreed on a way forward to do it. The challenge in this regard is that some of the smaller jurisdictions may not have the resources available to remove the biomass when it occurs.

We understand that the commonwealth are ready for Lake Burley Griffin. We certainly are for a number of our other waterways. We have done this already once, not with the virus, in upper Stranger Pond, where we removed two tonnes of carp. The clarity of the water is just amazing. It is a fantastic, pristine place to look at now. The healthy waterways projects have added to that with plantings alongside so that the water is cleaned as it forms into that catchment pond as well.

Mr Walker: The minister has touched on the healthy waterways project. That is an \$80 million partnership between the commonwealth government and the ACT government. It is delivering some 20 water infrastructure projects that are primarily designed to improve water quality and therefore reduce nutrient flows going into the lakes and wetlands across the ACT. That program is specifically designed to improve water quality outcomes and reduce, ultimately, blue-green algae outbreaks, which is at the heart of why Lake Burley Griffin was closed and the costings

associated with that. By stopping nutrients before they enter the system, we can have a significant impact on our water quality.

Mr Glennon: That report was from the commissioner for the environment and sustainability and it was into a review of Lake Burley Griffin and its watercourses. It was an estimation that came from Dr Ian Lawrence. I think it took into consideration a number of events that were lost on Lake Burley Griffin, particularly triathlons and things like that. That was the estimation of loss of revenue. All of the activities that you have heard about are some of the mitigation actions we are trying to put in place to alleviate that.

Ian Walker touched earlier on the water sensitive urban design code with respect to initiating water efficiencies in buildings. The water sensitive urban design code has targets for pollutants as well. It is trying to get that suite of things. Ian mentioned the healthy waterways project. That is putting in water quality assets to try to strip nutrients out before they get into water streams. Water sensitive urban design is a planning requirement to encourage—and I suppose it is mandatory on developments—meeting certain water quality targets. There are education programs running. There is research happening with the healthy waterways project as well. That is the suite of things that we are trying to do. Equally there is regulatory work; above Lake Burley Griffin there is the sewerage treatment plant, and that licence is currently under review.

Mr Gentleman: We have a challenge historically as well in that originally, as Canberra was planned on the Burley Griffin concept through the National Capital Development Commission, water was treated, rather than as a resource and something to be admired, as something that should be carefully dealt with in areas of storm, for example—emergency management. So they built big concrete drains to take the water down away from our areas of potential flood, for safety reasons, but this then interfered with the way that water actually operates in the environment.

In the creeks and original waterways, the water would seep into the aquifer and the earth would treat the nutrients, if any, gathered along the way. For example, leaves that fell in autumn would be caught in the earth and then later degrade, and the water that then came out into our waterways was quite pristine. So we have a challenge in that old system of drainage to interrupt it on occasion, particularly around Turner and O'Connor, and then build the healthy waterways projects around it so that we can return the water in a pristine condition.

MR MILLIGAN: On deciduous trees losing their dead leaves throughout our winter season, it seems that in all our suburbs we are still planting those types of trees, even in our new suburbs. It is clogging up our system. Water is going down our drains and taking the leaves with it. Even in other areas where the government has built water dams to catch a lot of this water, a lot of those leaves are still going into those waterways and polluting it, and now we are seeing some blue-green algae blooming in those areas. What is the government doing about that? Have they learnt that maybe they should move away from planting those types of trees and going evergreen or a different type of tree that will not contribute to the waste that ends up in our built water pipes?

207

Mr Walker: The H2OK education program, "Only rain down the stormwater drain", is part of the program that the government has invested in. That is very much focused on encouraging all Canberrans to not put anything down the stormwater drain apart from water. That is a really important message because, even today, people are still flushing leaves or other things down stormwater drains. So there is an education program to do what you have just highlighted. That is an important aspect because we do have lots of deciduous trees in Canberra, so managing that at the point of leaves falling out of the trees is an important aspect of how we manage that going forward.

However, we also need to recognise that those types of trees also have many benefits beyond the nutrients that fall from leaves. In some instances, deciduous trees provide good reduction of heat, so they do become an important element in terms of reducing heat stress. We have this interesting balance of trying to get the right trees planted in the right locations to benefit water quality but also to benefit climate and reduce heat stress related issues.

The minister touched on the drain stormwater network. That is an area where the healthy waterways project is starting to have benefit. We are slowing down those watercourses. We are creating, if you like, urban oases where it is cooler, we have plants growing and we are stopping the nutrients going into the system. One of the key pieces of research will be to understand whether the nutrients are being generated by leaves or by other nutrients from households, from roadworks or from other areas, and understanding that relationship: is it the leaves that are causing an impact or is it the other chemicals that are going into the system from roads and other development areas?

MR MILLIGAN: But what is being done with Yerrabi Pond, for example? What is being done to clean up that waterway by the directorate?

Mr Walker: Again, I highlight those examples that we have already touched on. It is very much about trying to reduce nutrient inflow. A key component of that is the naturalisation of areas. More restoration of inflow areas through naturalisation or restoration provides a reduced flow and also reduces the level of inputs going into it. They are the sorts of activities that are being undertaken in multiple locations across the ACT.

MR MILLIGAN: But what is the directorate actually doing with the water quality as it stands right now?

Mr Walker: I can just reiterate those comments. I think we are doing those things.

MR MILLIGAN: That is future things contributing to the water, but what about the water quality right now? You walk around Yerrabi Pond and—

Mr Walker: This is not a short-term solution. This is a long-term plan for how we respond to water quality. Changing the water quality, improving the water quality, is going to take time. That means the focus is on trying to reduce the nutrients going into the system. Changing what is already in there and improving the water quality is a much more complicated process. We are tapping into the research response that we gave earlier. Understanding what research and what support we can get from our

partners to change the nutrient loads within the lake is a more complicated and longer term issue that needs to be resolved.

THE CHAIR: ACT for Bees appeared before the inquiry and raised concerns about harmful pesticides. The ACT government, they said, have worked quite well with ACT for Bees and were very favourable. They did say there were still opportunities to get non-government actors using pesticides that are not harmful to bees. Would you be open to the idea of looking at how pesticides used across the ACT, not just government use, can be better tailored to support our environment?

Mr Gentleman: There is some work happening nationally, and internationally as well, on how we can ensure that our pollinators continue to thrive and provide the food source that they do. For World Bee Day this year we had an official function at Government House, which was quite exciting, attended by a number of different jurisdictions. It was really interesting to hear the challenges we have. Most people think of those pollinators as honey bees, but in fact a lot of Australian bees are pollinators as well and provide a good opportunity for us to enrich the environment.

Mr Walker: EPSDD also has environment protection policy within its remit. So we have a team of people looking at the use of pesticides and other chemicals across the ACT. That is very strongly regulated. We participate in national forums of environment ministers and ag ministers around the use of chemicals in the environment, whether that be pesticides, as the case in point, or other chemicals that may enter the environment. That is quite a regulated space and we have a team of people dealing with policy and regulation associated with that. Our EPA colleagues are probably the group of people to press on that question about how that is administered and managed.

THE CHAIR: I might take it up with them in annual reports.

MISS C BURCH: You mentioned a bit earlier the role that catchment groups and ParkCare and so on play in our community. We have heard from several community groups during the inquiry that they are frustrated that they have to continuously apply for short-term funding through environmental grants. Has the government given any consideration as to longer term funding for these groups or how to improve their sustainability as volunteer organisations?

Mr Gentleman: Certainly. I note their submission to the budget this year as well. The history of this is that funding came from the federal government through Landcare grants. It was distributed to Landcare and then individually to catchment groups across the territory. That funding ceased two years ago, I think. We have picked up the mantle and supported them over the last 12 months. I am very pleased to advise that we are again supporting them this year, although not specifically from the budget; we are doing it from within the directorate. We will continue to support the three catchment groups. I have written to them and advised them of that support. They do an incredible job for Canberra in ensuring that our catchments are monitored. The changes in water quality and native life in our waterways are really key indicators of how healthy our waterways are.

Mr Walker: Mikaela Jade looks after our visitor services program, which includes

engagement with the ParkCare groups and also broader catchment groups. I will touch on the catchment groups and then hand over to Mikaela to add some further detail in particular about ParkCare and our relationship there.

We have been working exclusively and very closely with the three catchment groups. As the minister has highlighted, we have invested in supporting them, particularly as a consequence of the change in federal government funding. That was cut two years ago. We have supported the catchment groups in a transition process. We have really helped them build their governance so that they are clear about what they can offer. We have helped them with their profile: who are they, what do they do and what is their value proposition? That is ongoing work with the catchment groups at the moment. We have also identified some key projects where we are working hand in glove with the catchment groups to deliver work on the ground.

As you would appreciate, not only are the catchment groups NGOs but also they reach out to many more community groups across the ACT, and our ParkCare groups are equal in that space. This year we celebrate 30 years of ParkCare. That is a tremendous feat in itself. I will hand over to Mikaela to talk a bit about ParkCare and our park volunteers.

Ms Jade: We have had around 800 park carers registered on the ParkCare hub since September 2017. We have significantly grown our program over the last 12 months through diversifying volunteering opportunities with the parks and conservation service. Prior to September 2017 you could join ParkCare as part of a ParkCare group, but we worked with Volunteering and Contact ACT to really understand the volunteering market in the ACT. We have broadened and diversified the program to now have four steams of ParkCare. There is still ParkCare with the 25 ParkCare groups but we also have a stream called ranger assist, where anyone from the ACT community can sign up to our ParkCare hub and join a ranger on a day activity to help them one on one.

We have amazing volunteers at Tidbinbilla through the visitor assist program. They provide insights and interpretative activities to visitors to Tidbinbilla, primarily around the sanctuary. We have a stream called wildlife assist as well, where people are actively involved in our wildlife threatened species program. They do an enormous amount of work in helping us maintain the animals and also interpreting the reasons why we have threatened species programs at places like Tidbinbilla.

MR MILLIGAN: Are these core programs that you mentioned one mechanism that the government could use to get people, as we spoke about earlier, active out in the community, working with health providers? What other organisations could these health providers work with to get people out?

Ms Jade: We have just started a program with the disability services sector. It is an opportunity for people with mobility or other disabilities to work as ParkCare volunteers. We have had our first non-verbal speaking volunteer join us. They are assisting us to make our parks and reserves disability friendly, so we can work out what we need to do to enable visits to our parks by all Canberrans, not just physically abled people.

We won a volunteering award the other night at the ACT Volunteering Awards for a program called "What's your reality". That was an initiative where we worked with the YWCA, Calwell High School and park carers to create a series of videos in virtual reality for kids with muscular dystrophy to be able to participate in park-related activities through virtual reality.

Mr Walker: I want to acknowledge the work that Alison McLeod and Mikaela have done in that space. It is quite groundbreaking in terms of providing virtual reality experiences for people who are unable to access our parks, in this case people with muscular dystrophy. It is a really quite revolutionary way of connecting people with nature. Having seen how the kids have reacted to those experiences really shows the value of how to get people into nature, even in this context. Being virtual does take a really different way and a different mechanism for doing that. The award the other night, at the volunteers night, has been a fantastic initiative for progress for the ACT.

MISS C BURCH: What about some of the other community groups beyond ParkCare and Landcare? ACT Wildlife was another one. Quite a few that we have heard from in this inquiry have raised short-term funding as an issue.

Mr Walker: We continue to support and invest with a number of partners, including ACT Wildlife. It is a common issue across all NGOs, whether they are in the environment sector or not. Where do you get money, where do you get investment from, to continue to do the good work? We recognise within government and within the directorate that volunteers and the community are the foundation of how we want to interact and work, and how we want to ensure that the city continues to be prosperous around this nature in the city space.

How we do that and how we work with our commonwealth colleagues to look for opportunities, or how we work with the business sector to do that—they are the very things that we are exploring with groups now, as to how we start to look at different revenue-generating ideas and different funding models. Having come from an NGO background, I completely understand the context of trying to raise money and generate revenue just for survival, let alone trying to do good, and environmental good, across the ACT. We are working very closely with a range of groups to try and facilitate, to look at different approaches and to engage with them to provide benefit to the ACT and to the government.

Mr Gentleman: A really good example of partnerships with both the private sector and the learning sector is Mulligans Flat. A proponent has generously provided some funding to upgrade the visitors centre at Mulligans Flat. That was with the agreement that we would provide half of that funding, which we announced last year. These are some of the opportunities where we are trying to see what we can do for these catchment ParkCare groups.

Ms Jade: Another initiative that we are developing through the volunteering program is capitalising on the three days of volunteering that most corporate organisations in the ACT offer. It is incredibly undersubscribed at the moment. We have realised that there is a vast amount of intellectual capital there, with respect to people that can do digital volunteering, people that can do physical volunteering and people that can provide advice into the agency on how the private sector does things as well.

Mr Walker: The citizen science space is another area that we are very active in. You may be familiar with Nature Map. We have a large citizen science group of people who are out there, in their volunteer time or in their day-to-day life, identifying plants and animals on the ground and reporting that through Nature Map. The knowledge base in the ACT makes that, in my view, one of the best systems in the country, because the professor that is the world expert in fungi, bees or whatever happens to live in Canberra. That provides a great intellectual capacity that we have been able to tap into through our digital platform. That has meant that we can record new species and new information at particular locations. That is used to inform decision-making across all areas of government.

It has also been very powerful in identifying when a new pest appears. It has meant that that has been reported through this network of citizen scientists and we have been able to respond and jump on the weed before it becomes established. As you would appreciate, getting rid of a weed before it becomes established is the most cost-effective thing that we can do. Any time that we get a new report of a pest plant or animal, we respond quickly and take action to eradicate that before it becomes established. African lovegrass is probably not quite the example that one would highlight as being eradicated from the ACT.

MR MILLIGAN: A few submissions have suggested that they would like greater access by the public to our reserves and our grasslands—for tourism, to bring people here. Other submissions suggested that some areas are overused and that there is too much access. Obviously, there needs to be some sort of balance. Has the government looked at what areas are currently available for the public? Has the government looked at future areas that could possibly be opened up to the public for tourism, and who could possibly manage and look after those areas?

Mr Walker: I will provide some introduction and Mikaela can jump in and talk about our visitor experience framework, because I think that is an important point. Ms Orr was briefed recently on not only grasslands and how we can activate those spaces that are significant from a conservation perspective but also how we can bring the community to those areas. We provided some examples of some grasslands in Victoria where the community have been engaged in their conservation and they have been brought into those areas by hardening some infrastructure—some viewing platforms—and providing infrastructure that enables people to get into the reserve, while also protecting the values that are there.

As park managers, as managers of our natural environment, having the appropriate infrastructure and ensuring that we have knowledge of where the values are that we are looking to protect is the balance that we need to provide. That is a nice segue to talk about the visitor experience framework.

Ms Jade: We have been working for the last 18 months on a visitor experience framework, which has involved assessing over 700 visitor sites across the ACT— walking tracks, lookouts, heritage sites and cultural places. We have used a framework to categorise those from the visitor perspective—looking at whether it is a wild, remote experience, all the way through to a hardened, developed experience.

We were trying to look at the spectrum of opportunities across the ACT landscape to make sure that, when we are marketing the available tourism opportunities, the right people are turning up at the right place at the right time to do the right activity and that we do not exacerbate issues that occur with areas that have high-volume tourism.

From my experience in other states and territories, it is very important, when we are looking at visitor destination and management, that we do not create problems for ourselves in the future with stranded assets, for example. It is about making sure that if an area is very popular and there is a lot of tourism occurring, and visitors are almost loving the place to death, we do not instantaneously say, "Let's put some more infrastructure in there," because over time you end up with a raft of infrastructure that you will have to manage into the future.

The landscape classification system allows us to assess where the most appropriate place to maintain or develop infrastructure is, where we would like to drive tourism as a destination for nature-based tourism, and where those opportunities for wild, remote experiences are. It is about making sure that we hold on to those opportunities in the future to maintain wild and remote places.

MR MILLIGAN: With the control and management of that, is it predominantly done through the directorate and managed by the directorate or is it handed over to our community groups, NGOs?

Mr Walker: Do you mean parks and reserves and their management of a particular location?

MR MILLIGAN: Yes.

Mr Walker: The example that the minister mentioned was Mulligans Flat. That is an example where we are in partnership with a trust and they are providing the experience and the activities associated with that area. While that is not handed over to the community or to the trust, it is a partnership model. There are other examples. The Ginninderry Trust, which is progressing on the border, is an example of where there is a partnership between government and a developer to establish a conservation area that will be managed jointly by that party. So there are examples of that.

Our ParkCare model is the entree into future management regimes for particular groups. If a group has a particular interest—Ms Orr will know where I am going here—such as Friends of Grasslands, who may have an interest in actively managing and looking after a site for its grassland, they are the sorts of partnerships and opportunities that we will be developing, and we will work with the community to do that.

MR MILLIGAN: So there is an opportunity there.

Mr Walker: There is certainly an opportunity to do that. We have heard from catchment groups and others, as you have, that there is an interest in managing those areas jointly, supporting the management of those areas and looking at different models and different approaches to what would typically be: "Government, you go and look after this parcel of land," and the community is then less engaged in that

space.

THE CHAIR: If we have covered off all of the questions, we might give everyone an early mark. As there are no further questions, we will draw to a close. On behalf of the committee, I would like to thank you for appearing today. When available, a copy of the proof transcript will be forwarded to you, to provide an opportunity to check the transcript and identify any errors. On behalf of the committee, once again I would like to thank all of the witnesses who appeared today. The hearing is now adjourned.

The committee adjourned at 4.22 pm.