



**LEGISLATIVE ASSEMBLY**  
FOR THE AUSTRALIAN CAPITAL TERRITORY

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STANDING COMMITTEE ON ECONOMIC DEVELOPMENT AND TOURISM  
Mr Jeremy Hanson MLA (Chair), Ms Suzanne Orr MLA (Deputy Chair),  
Mr Michael Petterson MLA

## Submission Cover Sheet

**Inquiry into drone delivery systems in the ACT**

**Submission Number: 058**

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## STANDING COMMITTEE ON ECONOMIC DEVELOPMENT AND TOURISM

### Submission: INQUIRY INTO DRONE DELIVERY SYSTEM IN THE ACT

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To the Standing Committee on Economic Development and Tourism

I am a Bonython resident and the convenor of the Bonython Against Drones Community Action group (BAD).

This is my personal submission (though I do lapse to using 'we' a lot) on why the delivery drones are not an appropriate service for Canberra, with more detrimental consequences than any perceived positive benefits. Although this is my submission, I believe the issues are shared by the hundreds of members and supporters that our group has attracted.

It also reflects the views of **80%** of the Bonython residents affected by the delivery drones – the 80% figure derives from a very extensive door knock by our volunteers did of most of the households in the delivery area while gaining signatures for our Petition presented to the ACT Legislative Assembly (1024 signatures).

Wing, a Google company, has consistently stated in its publicity that only 'some' residents are opposed to the trial. This is blatantly untrue, and a correct statement would be that only 'some' residents participated and only 'some' residents were in favour of the trial.

Wing have said that they had 160 people sign up for the trial. However, we know from comments to us that many of these people did not actually use the service. We have many people who told us that they ordered once but were put off by the noise and other aspects of the drone service and did not use the service again. We have noted that as the trial progressed, less deliveries appear to have been made, with many of the delivery statistics made up by multiple deliveries to the one residence (to deliver a meal takes a number of deliveries due to the small capacity of each drone delivery).

The rest of the ACT can also be considered to be not in favour of a drone delivery trial if other polls are taken into account. On 15 December the Canberra Times published an Insiders poll (so not just a Bonython resident's poll) with **68%** against the drones, 17% for and 15% unsure.

The RiotAct conducted a poll on the delivery drone service that showed **66%** saying 'keep them out of my backyard'.

ABC Radio conducted a poll on 13 Feb 2019 with 793 participants, and **65%** were against the delivery drones.

Why hasn't a public meeting been organised on this issue? For example, in 1996 a proposal was put to the Tuggeranong community to have jet skis operate on Lake Tuggeranong. A public meeting was held, organised by the ACT government, where the great majority of participants rejected the proposal, mainly on the basis of the noise created. No such opportunity has been afforded Bonython residents to comment on the delivery drones. But hopefully, the truth will out.

**1) (a) The decision to base the trials of the technology in the ACT and surrounding region**

Previous to the Bonython trial, a trial was conducted by Wing in the surrounding rural region. This was in the Royalla region. It would have been expected that this delivery service would have been welcomed by rural residents, and that is the publicity expounded by Wing. However, once our Bonython Against Drones group started, we received feedback from residents in the Royalla area that in fact there was much opposition to the drones, and the local community newspaper editor to us she was contacted by residents expressing their concerns. We were informed that these people felt that their complaints and concerns were completely ignored.

There was no real consultation with Bonython residents. Wing did conduct a presentation at the Tuggeranong Community Council in early 2018, but I believe I may have been one of the very few Bonython residents present, if not the only one. A video of a drone flight, without the drone's noise being apparent, was shown. Wing apparently held a 'fun day' to show the drones, but I certainly did not see any publicity about this and comments on facebook indicate that hardly any Bonython residents knew about this event. Even so, a jumping castle and sausage sizzle type event hardly can be classified as a real consultation event.

Wing did a letterbox drop and called it consultation. This was an advertising brochure asking people to sign up. It was not delivered to residents with 'no junk mail' signs on their box, and many others have said they did not receive it. It seems obvious that an advertising brochure cannot be considered as consultation.

The ACT Government did no consultation. Not a single resident was asked if they wanted to participate in a trial that saw drones flying over their heads, with hot drinks and food. Wing has said that the only people involved in the trial were their 'testers' – those who signed up for orders. However, every resident in the trial area was involved whether they wanted to be or not, especially those near neighbours to people who had deliveries. Residents have described themselves as guinea pigs in an experiment. You could not but be involved if the drones flew overhead or came near.

It was called a trial. I believe it was a farce of a trial, set up to deliver a predetermined outcome. As we soon discovered, there was no terms of reference available for residents to look at, there was no governance structure; no person, body or agency was willing to say they were overseeing or managing the trial. Basic information such as when the trial would end was not forthcoming. I had a phone conversation with Jesse from Wing, early in the trial, who would not tell me the end date of the trial (even though we later found this was on the lease) or give me any real answers to any questions I had.

There was no avenue for feedback set up by the ACT Government or any other agency. Minister Mick Gentleman advised on his facebook page and correspondence that feedback should be given to Wing. When I wrote to Wing asking them, in the interests of transparency and good community relations, that they release the feedback they received, Wing advised that they would not do so. They stated they would not be releasing the feedback to anybody including Government, but only 'a summary'.

CASA advised that they were not monitoring the trial and that they expected Wing to self-report any incidents and problems. Of course, self-reporting has proved to be an outstanding success in other areas such as finance and banking! In this so-called trial, it has failed again.

The decision to base the trial in the ACT, and in particular Bonython, did not include consideration of the impact of such a trial on the residents. There was no consulting the residents of Bonython, nor were any businesses in the Tuggeranong area consulted or afforded an opportunity to comment.

The terms of the trial were largely unstated and unclear. Wing claimed it “envisions a future where drone delivery is the safest, fastest and most environmentally friendly mode of small item transport, and everyone can benefit from having commonly-needed goods available to them”. This statement has no relevance for unwilling participants in a delivery trial who did not ‘sign up’ for deliveries (the great majority of residents). In fact, in my opinion, the trial miserably failed to achieve its aim to demonstrate the Wing statement above.

There has been no attempt to do an independent review or to survey Bonython residents now that the trial has ended. No mechanism for an independent review was envisaged. The only substantial survey has been conducted by the Bonython Against Drones group, finding a huge majority of residents against the drone trial. Mark Parton MLA conducted his own smaller doorknock and stated that he was surprised by the level of opposition to the drone deliveries (on his facebook page), finding only a small number actually in favour.

This was not a transparent, well organised, well run, accountable trial – I consider that the trial was a total failure, poorly set up, with no governance, no independent feedback mechanism, no independent assessment and in the end, no justice for aggrieved residents.

**(b) The economic benefit of drone delivery technology being tested in the ACT including;**

**(i) The investment that has been brought in to the Territory.**

At the end of this trial, it is difficult to see any investment that has been brought into the Territory. In fact, as the delivery was free, a licence fee applied to the Wing base, wages and many other expenses had to be paid – the trial must have been an expensive, very financially negative exercise. Expenses would also include the payments made to Community organisations such as \$10,000 to one community council and \$6000 to another (that we definitely know of).

No new businesses established in the ACT during the trial. The drone delivery service does not offer a new service – they are delivering existing products. What they offer is only a different method of delivery.

There are already numerous delivery companies and deliverers. Every meal delivered by a drone means that a delivery driver or rider has missed out on making delivery. For every dollar earned by Wing, someone else misses out on earning a dollar.

I would question what the nett economic benefit would be in substituting one delivery method for another. Indeed, delivery drivers and riders are paid for their work, spend their earnings, pay taxes and fees and contribute to the Territory economy in many ways – as do the companies that employ them.

Drones are machines that earn no wages and pay no taxes. A company that operates a drone delivery service employs minimal workers, requires minimal infrastructure and would contribute little in the way of revenue to the ACT taxpayer.

In Wing’s paper ‘Drones: delivering benefits to the Australian Capital Authority’, they consistently state that their projections are mainly based on taking business from existing deliverers such as Uber Eats and Deliveroo. The figures appear to be based on hard to justify (pie in the sky) assumptions.

A major limitation of drone delivery is the small payloads the drones can carry – a couple of coffees or a burrito. They cannot deliver a whole pizza for example. This means that a meal will take multiple flights to deliver. A lady in Bonython whose neighbour participated in the delivery trial had to endure up to 10 drone deliveries or more within an hour, for her neighbours to have a meal. In contrast, other services can deliver a whole meal and to a number of households.

Economies of scale come into play. If other goods are to be delivered in the future, such as postal packages, then this becomes even more obvious. A delivery truck can carry hundreds of parcels of all shapes and sizes, impossible for a drone. A fast food delivery driver can cart full and multiple meals.

Wing, of course, is an Alphabet/Google company. It is interesting that the licence and other documents (obtained under FOI) are largely signed by a Google representative. Google is an international company, and I would ask where the revenue from the Wing will be recorded, likely overseas or interstate. The Australian Government has recently changed the tax laws to attempt to gather some of the tax revenue being lost overseas but it is too early to see if the sought for benefits will come to fruition – in any case, that will not benefit the ACT.

This all means it is problematic how much revenue would actually come to the ACT Government.

I have been told that the Wing business may lead to a Google Campus coming to Canberra. However, a drone delivery service such as proposed by Google operating from Mitchell should not be equated to a Google Campus or other technological investment. These are entirely different beings and setting up a Google Campus would not require a drone delivery service component. This is evident from the existing Google Campuses, in Australia and elsewhere, that do not have a drone delivery component. A drone service does not, in any way, guarantee a Google Campus or further Google investment.

#### **(ii) The number of jobs that have been created as part of the trial**

Wing employed a small number of people only. Other workers involved in the trial were employees or contractors of other companies, existing employees I believe. Wing have stated that they will have 24 employees in their planned Mitchell premises, hardly a huge number. It seems some of these people will be existing employees of other companies, such as baristas.

I must repeat that the delivery drones are 'stealing' business from other delivery services and other business. If the drone delivery business is to expand to thousands of deliveries a day, as envisaged, there will be many less deliveries by other companies, it is part of their published business plan to take services from companies such as Uber Eats and Deliveroo, let alone other businesses who have their own deliverers. This leads to the conclusion that there will be a nett loss in people employed in the delivery business, especially the fast food delivery business.

Job losses not creation.

#### **Local Business**

Wing have been using large, national chains in their deliveries. Local businesses are not impressed, with local take-aways, chemists and others fearing that they will lose business and revenue to the drone deliveries. Drone deliveries mean less foot traffic to the bricks and mortar businesses. Will the national chains taking part contribute as much revenue, if any, to the ACT as do the local businesses and their employees? That is very doubtful, meaning net loss to the Territory.

#### **(iii) extent of collaboration with local industry and academic institutions.**

I am not aware of any such collaboration, there has been no news stories or other information published that I have been aware of. If anything has occurred in the ACT then it must be minimal and doubtful of any economic significance for the trial.

#### **(d) The extent of regulatory oversight of drone technology at various levels of government including but not limited to:**

##### **(i) Local authorities such as the Environment Protection Authority (EPA), Worksafe and Access Canberra**

Early in this trial Bonython Against Drones attempted to discover who held the regulatory oversight for the trial. We were met by a great deal of resistance from all levels of local and Federal government to any suggestion that they might be regulating the trial. No one was 'in charge'. There is no indication that this lack of oversight will not continue in any future drone delivery activity.

The prime complaint of residents has been the noise, loud and high pitched, described as being like a F1 racing car or a demented whipper snipper. A NASA blind test study found that drone noise was the most annoying noise compared to other noises such as bikes, cars and trucks. A resident with an app on their phone has measured the noise level at over 80 decibels. The EPA

has said that drone noise is not in their ambit and they are not interested in measuring it. In fact, no agency local or federal appears to want to take responsibility for drone noise.

I have no knowledge of Worksafe being involved and would be surprised to know that they have been involved in the trial.

I believe that Access Canberra received many complaints about the drones, especially the noise, but there is no indication that they acted in any way, except perhaps to pass on the complaints to other agencies who were not interested on acting on the complaints.

I have been in contact with the Environment, Planning & Sustainable Development Directorate. Wing (Google) were given permission to overfly parks and reserves in the trial. Part of the conditions on Wing was to that they would commission an avian study on the effect on birds. I was astounded to be informed that this avian study would not be made public, and I believe not even the government was to receive a copy. But I am dubious what a study commissioned and paid for by Wing would find.

The ACT Minister(s) that one would think would normally be responsible for a trial, or at least overseeing the trial as far as it effects ACT interests, have consistently told us that they do not want to be held responsible in any way, shape or form.

## **(ii) Commonwealth Agencies such as Air Services Australia, Civil Aviation Safety Authority**

Air Services are not interested in drones as they are not manned aircraft, with the exception of rules to keep drones out of regulated airspaces.

CASA has relaxed many of their normal drone safety regulations to allow the drone deliveries. The normal height restrictions of 30 metres above people, obviously in place for drones as a safety requirement, have been downgraded so that the drone can hover over people at a low height of 5m to make their delivery. Overflights of people, roads, etc have been allowed so that the drones can operate. Safety regulations that were put into place for other drone operators have been amended for Wing – apparently the safety of people under drone delivery flights is of much less importance than of people under other drones.

The size and weight of the delivery drones must be considered – they are almost the height of an average person, much bigger than the usual drones that are usually flown commercially or recreationally. But contrary to logic, safety rules have been diminished for a larger heavier drone.

CASA have informed me that there have been no incidents reported by Wing, which I expected (the nil reporting that is, not incidents). We have reported what we consider incidents to CASA such as drones landing in neighbouring properties to where they were supposed to deliver, of the bird attacks on drones, on drones dropping their delivery box on a car in a driveway, of delivery box spilled on a driveway, of a lady nearly having a car accident because of a low flying drone. CASA apparently do not think any of these incidents worth investigating and they have stated they are not actually incidents, as there was no actual 'crash' or injury. I would strongly disagree with that point of view.

These incidents have occurred with the limited number of flights taking place in the Bonython trial. I am very worried about the number and frequency of serious incidents with the proposed expansion of deliveries to hundreds then thousands a day, especially over high-density areas and major roads. Apparently, CASA and Government is not concerned with this marked increase in safety risks at all. But residents I have spoken to are rightly very concerned.

In correspondence from CASA, it appears to me that they have been trying very hard to justify their actions in modifying the regulations to allow Wing to have their trial, the methodology of the trial (especially the lack of oversight and self-reporting mechanism) and the lack of any consultation with the affected Bonython residents.

CASA is currently reviewing all drone regulations. A recent Federal inquiry into drones brought up many questions that have not been resolved. And yet it is proposed that that the drone delivery service be greatly expanded when there are only trial guidelines to operate under, with no regulations for delivery drones being enacted or agreed or legislation enacted.

This situation appears incredible to me, would we give approval to any other business proposal when the rules, regulations and possible legislation have not been agreed on and put into place? Especially an activity such as drone flights with so many potential risks?

**(D) The extent of any environmental impact as a result of trialling drone delivery technology on:**

**(i) Residents within the trial area**

Residents have been hugely impacted. When the trial commenced it came as a great surprise for most residents, as many have told me. They immediately contacted the only community body in the area, the Neighbourhood Watch committee. The convenor of Bonython Neighbourhood Watch was swamped by phone calls and emails, and contacted myself and some other residents to set up a group – which we called Bonython Against Drones. We set up a facebook page which now has well over 200 members – it is a closed group and we tried to restrict it to local residents. And have many more people on our email contact list. Most people could not believe how loud the delivery drones were.

Residents were reporting they could hear the drones when they had double glazed windows and insulation. In my case they are loud enough to wake me up when they flew over or near our house.

It is true that in law we do not own the airspace above our heads, a fact that many people are not aware of from my conversations (apparently in other countries such as the USA you do have legal rights to airspace). However, I like most other residents would consider that it is not acceptable for any one, private or public, to be making a nuisance and misery of our lives by flying over our properties in the way that delivery drones do. We do have rights to a good quality of life, and we live in communities where individual rights must co-existent with neighbour rights, especially in the areas of noise, privacy and safety. These presumed and real rights are being violated by the delivery drones.

I have written an article describing life under the drones:

***Life under the Delivery Drones in Bonython.***

*Picture this. You are sitting at home when a large drone hovers next to your house, emitting a screaming high-pitched noise 80 to 100 decibels. It delivers some fast food to your neighbour, then speeds off, leaving you shell-shocked. Then it comes back, not once but 9 more times! To do these deliveries, it had to overfly 50 residences or more, from the Wing base and back – 20 very noisy flights for one household delivery. That's what happens in Bonython.*

*This is what residents have been enduring for over 6 months in our usually quiet suburb. The flights start at 8am and the first one over our house can wake me up in bed, and I am not a light sleeper. At this time of the morning it is probably an urgent delivery of a vital substance – a coffee! After enduring a number of flights overhead while having breakfast, I often cannot stand it anymore and have to jump in my car and escape to somewhere outside our suburb. Other residents have told us that they have left home for the weekend to get away from the drones.*

*Meanwhile, dogs start barking and going wild. A mother reports that her children will not play outside when the drones are overhead, another that she has great difficulty getting her children to sleep during the day.*

*An ex-soldier who suffered from PTSD had difficulty coping when the drones started flying over his head, while another woman who suffers from migraines is also stressed greatly every time a drone flies over. Now if you haven't seen or heard one of these drones, they are not like the drones you may see people flying in the park – the delivery drones are almost 2 metres tall and*

*wide, have many propellers and sound high pitched and very loud, like a demented whipper snipper. The most annoying sound, much worse than your lawnmower (and lawnmowers don't fly over your head.) They can be heard coming from a long way away.*

*Another lady, a grandmother, was advised by her doctor to get some natural sunshine on her body after a breast cancer operation – she cannot do this anymore as she is afraid of the cameras the drones carry. Privacy is a huge issue for residents, despite assurances from Wing – which, by-the- way, is a Google company, Google signing the licence and other documents.*

*Another older lady told, at a neighbourhood meeting, her first encounter with a Wing drone. She was walking on a fire trail behind some houses when the drone came overhead, frightening her badly. As she recounted her story, she started shaking and crying and had to be comforted. Of course, some of the people who get the deliveries tell us 'you will just have to get used to it'. When the drones are not flying, it is very quiet on the backyard; that's because there is a distinct lack of birds, with the usual flocks of galahs, rosellas and cockatoos all missing. Only the hardy birds such as magpies and ravens are about. Over the two-week drone-break at Christmas, many birds came back – only to disappear again at the first drone.*

*Thank goodness for fire ban days, windy and stormy days, when the drones can't fly! So, this is everyday life in Drone Land, Bonython. But perhaps the majority of residents like the deliveries and only some are against, as Wing put out in their publicity? Definitely no! The Bonython Against Drones residents group has hundreds of members. We had no trouble obtaining over 1000 signatures in a paper petition to the Legislative Assembly. Our volunteer doorknockers reported that around 80% of residents they talked to wanted the drones to stop. Gai Brodtmann, MP, has stated that she has been inundated with complaints. Even a separate doorknock by Mark Parton MLA showed a majority of residents against the drones.*

*This trial is free of delivery charges, and Wing have refused to tell me how much the delivery charge will be if they go commercial. Wing have been receiving feedback, but refuse to share it with us or the government (I wonder why?). At its peak they were flying perhaps 50 flights a day in Bonython - Wing have talked about flying up to 11,000 flights day in Canberra, can you imagine that. We will have to rename Canberra the Drone Capital of the World. A failed experiment, a failed trial.*

## **(ii) Native Wildlife**

Bonython is a suburb on the Murrumbidgee Corridor, with parks and reserves. There is a large man-made lake, Lower Stranger Pond. Mt Stranger is in the middle of the suburb. We are used to a great variety of wildlife, especially birdlife.

When the drones started flying our flocks of rosellas, cockatoos, galahs and other birds disappeared. I imagine that a drone looks like a huge bird of prey to birds. This lack of birdlife was my immediate observation, our bird feeder in the back yard was deserted. Confirming my observations, many other residents have told me of the same experience of birds deserting the area, and many have lamented the great decrease in water birds on our Pond. A lady who participates in the annual backyard bird count said the numbers were way down in 2018. Only the ravens and magpies largely stayed around, perhaps as it was coming up to breeding season.

We have had numerous reports of magpies attempting to attack the drones, with one attempt captured on video.

This bird desertion is a huge quality of life issue for us. One of the great joys in living in Canberra, the Bush Capital, is the abundant wildlife. Over Christmas the drones had a two-week break, and



after a few days I noticed many of our birds returning – but as soon as the drones started up again, the birds took off – cause and effect confirmed.

Other people have also told me that the kangaroos decided to move away, and I certainly have not noticed them in the reserve opposite our house in anywhere near the numbers they used to be.

The drones in the Bonython trial flew over parks and reserves, and it would seem that the same ‘scare’ effect on birds occurred in the reserves. See this article that sets out the problems of drones and birds – note though, that the article is about a few drone flights and does not envisage the number of drones that a commercial delivery service entails:

<https://theconversation.com/drones-and-wildlife-working-to-co-exist-83488>

### **(iii) Domestic Animals**

I don't have a dog. However, when the trial started, I had a number of conversations with dog owners, and people who live near dogs. Apparently, dogs were barking furiously as soon as they could hear a drone coming, barking constantly. People love their pets, and this was very stressful for them. People at the Tuggeranong dog training park, next to the Wing base were very upset with the effect on their dogs.

### **(iv) Greenhouse Gas Emissions**

Delivery drones are high-tech machines, made from expensive materials, obviously not made of environmentally friendly materials – not a lot of bamboo and hemp drones flying around. They carry at least two lithium batteries. They can be used in limited circumstances to carry small loads. To be efficient, a delivery system should be able to deliver a large number of articles for a small fuel outlay. For example, an electric truck can achieve this efficiency.

An article in theconversation.com states that drones can be considered environmentally friendly only in some limited circumstances, but normally other transport is just as good or better – for instance, they make the point that electric power trucks are more efficient especially considering the number of packages they can carry compared to a drone (economies of scale). Small delivery trucks or electric cars delivering food are efficient.

The drones can deliver only small packages, leading to multiple trips to a household to deliver a take away meal for instance. They cannot deliver bulky items or multiple larger items. This is not an efficient means of delivery.

The considerations of current and coming environmentally friendly transport are very important in considering the future direction of delivery services. They also have none of the human environmental concerns that have been experienced with drones such as invasiveness, intrusiveness, noise and privacy concerns. They appear to negate any argument about the environmental benefits of drones over vehicles. The future of deliveries is electric, perhaps incorporating autonomous driven vehicles.

### **(e) Ways to improve the use of drone delivery technology within the ACT**

I am totally for drones in many, many ways. Drones used by emergency services and in emergencies, drones used for wildlife research, for surveying and many other uses. Evoenergy are about to start using drones to survey the powerlines, a great idea. Recently they consulted with us and gave a demonstration, real consultation in contrast to the Wing pseudo-consultation. Drones are a great benefit to the community in so many ways.

However, I see absolutely no community benefits to drones delivering coffee, fast-food and other products that are readily available locally. In fact, the community negative aspects that we have experienced in the drone delivery trial must far outweigh any supposed benefit.

My contention would be that there would have to be extensive and major community and economic benefits for drone deliveries to be seen as worthwhile enterprise, to make up for our loss of amenity and quality of life. Instead this trial has demonstrated to me that a large international company will make misleading claims, ignore any community concerns from the great majority of residents and ride roughshod over complaints, to make a profit. Economic benefits to the ACT are based extremely on dubious claims and taking profits from other companies - profits will be at the expense of existing Canberra businesses and workers.

Delivery services are already provided, for instance local chemists make home deliveries already, local food businesses deliver. Canberra is a city that has numerous shopping centres that are within a short distance in all suburbs. We are not a rural or remote area!

Drone delivery cannot be relied upon 7 days a week. Drones cannot deliver at night, on windy, rainy or stormy days and on high fire danger days. This, of course, would rule out deliveries in many emergency situations.

I cannot see any way that delivery drones can effectively operate to the extent that, to be commercially viable, Wing are talking of thousands of flights a day

#### **(f) Any other relevant matters**

##### **Noise**

My number one complaint, the same as most people, is the **noise**, which I have described earlier in this submission. The noise is so bad that it is like a mental torture, unlike street noise, lawnmowers or other usual residential noises. When the drones fly it is constant, backwards and forwards so that every delivery is two flights over us, and this was only a trial. I did not choose to live next to an airport, I strongly object to flying machines being imposed on me, flying over my head.

Note that to deliver bigger loads, drones will presumably need to be bigger and more powerful.

##### **Privacy, Invasiveness and Intrusiveness**

However, the noise problem is only one problem among many. 'Solving' the noise problem will not solve the other problems. The drones are **invasive and intrusive**. Cars and vehicles are in the street, they may make noise, but they are not flying over residences. Vehicles are not taking footage of my house and backyard. There are great **privacy** concerns.

Flying a drone over private property isn't illegal under CASA rules, nor is filming someone from it, even on their own property.

Wing have assured us that they are only taking limited footage, but we have no way of verifying this claim and there seemingly are no regulations controlling this. Drone privacy laws appear to be a black hole of legislation. Wing have said that footage is sent to the USA and held for 30 days (stated to us at Tuggeranong Community Council last year). Wing, a Google company, say trust us. Frankly I have no trust on this issue. It is extremely worrying to myself and many residents. We know that other drones currently take footage, but the number of envisaged delivery drones is a massive upgrade to the amount that will potentially be taken – and stored who knows where, used for what purpose and who knows how long.

## **Safety**

Safety, as touched on previously in my submission is another very worrying issue. Wing and CASA have assured us that the drones have software that will ensure a controlled descent in all situations. I cannot see how it possible to guarantee this under all circumstances, especially from our concerns of incidents in this limited trial. An effective air control system for drones has not yet been developed, and is a long way off, as it has to incorporate avoidance mechanisms not just for commercially operated drones (and that is very difficult) but also recreational drones flown by amateurs. Recreational users cannot effectively be policed, it is impossible to enforce drone rules on operators who are ignorant of the rules or just ignore them.

In 2016 a recreational drone user was investigated by Australia's CASA after evidently flying a drone over a crowded Bunnings carpark to pick up a sausage at a sausage sizzle. Video appears to show several breaches of the rules, including: flying a drone out of visual line of sight; flying within 30m of people; and flying over a populated area. During the Bonython trial I sighted a number of obviously recreational drone flights, especially in the reserves near Pine Island and Stranger Pond that the Wing drones were also flying over.

What about a bird strike, a collision with another drone (including recreational users especially child operators), lightning strikes? It is possible to think of many scenarios where these large drones can be brought down. This could do serious damage to a person, especially a child or elderly person. They carry hot liquids and foods, as well as being dangerous in their own right.

The number of proposed drones into the hundreds and thousands will exponentially increase the safety risk. A sky thick with drones is asking for trouble. And it is proposed to expand into high density housing suburbs, above busy roads and areas, competing in the air with other drones. This video demonstrates how easy it is for drone operators to lose control of their drones:

[https://www.youtube.com/watch?v=kq\\_Hgg5J-rQ&feature=youtu.be&fbclid=IwAR1aB2rz6JO\\_7c1AdNfZUvwJnQ4OrcV0dFjr8AI0P9U8z9RwfpW1N0qU8ZY](https://www.youtube.com/watch?v=kq_Hgg5J-rQ&feature=youtu.be&fbclid=IwAR1aB2rz6JO_7c1AdNfZUvwJnQ4OrcV0dFjr8AI0P9U8z9RwfpW1N0qU8ZY)

Wing is wanting to increase to thousands of flights, but we must also take into account other companies such as Amazon who want to join in. I read an article where Google and Amazon are currently developing a form of air traffic control for drones. It seems like a nightmare to me to have the Canberra skies thick with delivery drones. Quality of life here will be non-existent. Cross out Bush Capital. Pencil in Drone Capital.

Wing have also stated that the use of drones will make Canberra streets safer by taking delivery vehicles off the streets. There are no statistics specifically on delivery vehicle accidents that I have found, and no outcry about safety concerns. Will flying hundreds or thousands of drones over our heads be a suitable trade-off for an apparently non-existent problem? Will drones actually take most delivery vehicles off the streets, with the drone's small loads? Perhaps pushbike deliveries will suffer most.

## **Health and Environment**

On Saturday mornings I like to attend Parkrun at Lake Tuggeranong. A recent Saturday morning saw over 400 people running or walking the 5 kms. The ACT Government encourages Parkrun, sports and many other healthy activities - and rightly so. The ACT Government is highly involved in encouraging healthy living, encouraging people to get

out of their homes and get exercise. This is not only very beneficial to people individually but a healthy population leads to a decrease in health costs overall.

Delivery drones encourage the exact opposite – stay at home, get out of your lounge chair to walk as far as the driveway to get your takeaway meal.

There are also concerns with pharmaceutical deliveries, with people not receiving the correct treatment by not consulting a chemist or doctor but instead merely ordering a drone delivery from a list of products, especially for children. Concern has been expressed at drone deliveries for pharmaceutical items – if the goods are delivered to the wrong address, or the drone is forced down in an unintended place, or a child gets to the package – bad consequences!

More at

<https://ajp.com.au/news/chemist-warehouse-in-drone-delivery-havoc/>

Governments are also encouraging environmentally friendly vehicles: pushbikes and electric vehicles. Australia Post is about to introduce a fleet of electric bikes for posties. Electric delivery trucks, electric motor bikes are all coming very soon.

Electric truck production is happening in Australia – see

<https://www.abc.net.au/news/2018-10-30/electric-cars-set-to-bring-500-jobs-to-latrobe-valley/10448344>

Our trial has made international news, with articles in the Wall Street Journal, The Daily Mail and others. These articles have all included the problems that Bonython residents have experienced. National news has taken up the story, including a Current Affair and Channel 7 news. The BBC has run stories – one of their stories echoes many of our concerns:

<https://www.msn.com/en-ae/news/techandscience/why-your-pizza-may-never-be-delivered-by-drone/ar-BBQXUHz>

**In conclusion**, drone deliveries in a suburban setting are an unnecessary, invasive, service set on replacing existing (and future direction) services. They will not give any substantial economic benefits especially taking into account the losses incurred by other providers and businesses. Any profits made by Wing will be at the expense of jobs in the delivery business, with young delivery people put out of work. These drones severely reduce our quality of life, are intrusive and potentially dangerous. They are not needed or wanted in Canberra.

Nev Sheather