ACT Government
Chief Minister, Treasury and Economic Development

Freedom of Information Publication Coversheet

The following information is provided pursuant to section 28 of the *Freedom of Information Act 2016*.

FOI Reference: CMTEDDFOI 2019-090

Information to be published	Status
1. Access application	Published
2. Decision notice	Published
3. Documents and schedule	Published
4. Additional information identified	No
5. Fees	Waived
6. Processing time (in working days)	30
7. Decision made by Ombudsman	N/A
8. Additional information identified by Ombudsman	N/A
9. Decision made by ACAT	N/A
10. Additional information identified by ACAT	N/A

From: [redacted]
To: CMTEDD FOI
Subject: Freedom of Information request
Date: Thursday, 11 April 2019 8:33:20 PM

Please find online enquiry details below. Please ensure this enquiry is responded to within fourteen working days.

Your details

All fields are optional, however an email address OR full postal address must be provided for us to process your request. An email address and telephone contact number will assist us to contact you quickly if we need to discuss your request.

Title:
First Name:
Last Name:
Business/Organisation
Address:
Suburb:
Postcode:
State/Territory:
Phone/mobile:
Email address:

[redacted]

Request for information

(Please provide as much detail as possible, for example subject matter and relevant dates, and also provide details of documents that you are not interested in.)

Under the Freedom of Information Act 2016 I want to access the following document/s (*required field):	I request documents relating to the ACT Government's planning for Project Wing. Any business plan, risk analysis, regulatory analysis -(ACT & Commonwealth), environmental impact analysis, and public consultation plan or actions related to Project Wing - Bonython and Gunghalin. Note, this may be my second request. This request is at 8.29pm 11 April. I submitted a similar online request this morning 11 April between 0830 and 0900 am. I did not receive an email receipt. Perhaps I mistyped my email address or there may be another problem. Please advise if you received my earlier request. Thank you, [redacted]
I do not want to access the following documents in relation to my request::	

Thank you.
Freedom of Information Coordinator

ACT Government
Chief Minister, Treasury and Economic Development

Our ref: CMTEDDFOI2019-090

[redacted]

via email: [redacted]

Dear [redacted]

FREEDOM OF INFORMATION REQUEST

I refer to your application under section 30 of the *Freedom of Information Act 2016* (the Act), received by the Chief Minister, Treasury and Economic Development Directorate (CMTEDD) on 11 April 2019, in which you are seeking access to documents relating to Project Wing.

Specifically, you are seeking: *"...the ACT Government's planning for Project Wing. Any business plan, risk analysis, regulatory analysis -(ACT & Commonwealth), environmental impact analysis, and public consultation plan or actions related to Project Wing - Bonython and Gunghalin."*

Authority

I am an Information Officer appointed by the Director-General under section 18 of the Act to deal with access applications made under Part 5 of the Act.

Timeframes

In accordance with section 40 of the Act, CMTEDD is required to provide a decision on your access application by 5 June 2019.

Third Party Consultation

In making this decision, consultation in accordance with section 38 of the Act was completed. Third party views were taken into account in making this decision.

Decision on access

Searches were completed for relevant documents and 94 documents were identified that fall within the scope of your request.

I have included as **Attachment A** to this decision the schedule of relevant documents. This provides a description of each document that falls within the scope of your request and the access decision for each of those documents.

I have decided to grant access in full to 65 documents and partial access to 24 documents relevant to your request. I have decided to exempt 5 documents as I consider them to be contrary to the public interest information under Schedule 1.

My access decisions are detailed further in the following statement of reasons and the documents released to you are provided as **Attachment B** to this letter.

In accordance with section 54(2) of the Act a statement of reasons outlining my decisions is below.

Statement of Reasons

In reaching my access decisions, I have taken the following into account:

- the Act;
- the content of the documents that fall within the scope of your request;
- your views on the public interest in disclosing the government information applied for (as per section 37 of the Act);
- the views of the relevant third parties; and
- the *Human Rights Act 2004*.

Exemption claimed

My reasons for deciding not to grant access to the identified documents and components of these documents are as follows:

Documents 2, 3, 13, 15, 36, 41, 44, 49 and 52 of the identified documents contain information that is considered to be contrary to the public interest under schedule 1 of the Act.

<u>Contrary to the public interest information under section 1.2 of Schedule 1 - Information subject to legal professional privilege</u>

Documents 2, 3, 15, 36, 40, 41 and 44 contain advice provided by the ACT Government Solicitor. I consider that the advice is subject to legal professional privilege as it was brought into existence for the dominant purpose of providing a legal opinion in relation to the implementation of a drone delivery service in the ACT. I am satisfied that the communications were made in circumstances of confidentiality and were provided by an independent legal adviser satisfying the requirements to attract legal professional privilege. For this reason, I have decided to exempt this information from release.

<u>Contrary to the public interest information under section 1.12 of Schedule 1 - Information in possession of ombudsman</u>

Documents 13 and 36 contain copies of the *Project Wing Fauna Study: Drone Operations in Canberra (Final Report)* which is currently subject to an ACT Ombudsman review. Therefore, it is exempt from release until the outcome of the review is finalised. Once a final decision has been made on these you will find the final decision on the ACT Ombudsman website under the "Published Ombudsman's review decisions" tab.

Contrary to the public interest information under section 1.6 of Schedule 1 - Cabinet information

Documents 49 and 52 are entirely composed of information that is considered to be contrary to the public interest as it is Cabinet information. Under section 1.6 of Schedule 1 of the Act, Cabinet information is exempt from release. The purpose of this exemption is to maintain the confidentiality of the cabinet process and to uphold the principle of collective ministerial responsibility. This exemption was discussed in *The Commonwealth v Northern Land Council* [1993] HCA 24; (1993) 176 CLR 604 (21 April 1993). Paragraph 6 of the decision, states that:

> … it has never been doubted that it is in the public interest that the deliberations of Cabinet should remain confidential in order that the members of Cabinet may exchange differing views and at the same time maintain the principle of collective responsibility for any decision which may be made.

Documents 49 and 52 fall within the Cabinet information exemption as they contain information which has been commissioned by the Cabinet to guide it in its decision making and to assist it in its deliberations. These documents are therefore exempt from release under the Act.

Public Interest Test (Schedule 2 of the Act)

I must now apply the public interest test to the remainder of the information that falls within the scope of your request in order to determine whether the release of this information is within the 'public interest'.

The Act has a presumption in favour of disclosure. As a decision maker I am required to decide where, on balance, public interest lies. As part of this process I must consider factors favouring disclosure and factors favouring non-disclosure.

In *Hogan v Hinch* (2011) 243 CLR 506, [31] French CJ stated that when 'used in a statute, the term [public interest] derives its content from "the subject matter and the scope and purpose" of the enactment in which it appears'. Section 17(1) of the Act sets out the test, to be applied to determine whether disclosure of information would be contrary to the public interest. These factors are found in subsection 17(2) and Schedule 2 of the Act.

Taking into consideration the information contained in the documents found to be within the scope of your request, I have identified that the following public interest factors are relevant to determine if release of the information contained within these documents is within the 'public interest'.

Factors favouring disclosure in the public interest:

(a) disclosure of the information could reasonably be expected to do any of the following:

- *(i) promote open discussion of public affairs and enhance the government's accountability;*
- *(ii) contribute to positive and informed debate on important issues or matters of public interest;*
- *…*

(viii) reveal the reason for a government decision and any background or contextual information that informed the decision.

In considering the factors in favour of disclosure above together with the documents, I consider that the release of the information within the scope of this request may promote open discussion of public affairs and enhance the government's accountability. The documents identified contain information relating to the ACT Government's planning for Project Wing which I consider is of public interest. I consider that the release of this information could reveal the reason for government decisions and also provide any background or contextual information that is or has informed Government decisions. As a result, the release of documents identified could enhance the ACT Government's accountability and contribute to a positive and informed debate on the recent policies regarding drones in the ACT. I am satisfied that the public interest in increasing transparency and accountability of the ACT Government carries significant weight.

Factors favouring nondisclosure in the public interest:

(a) disclosure of the information could reasonably be expected to do any of the following:

(ii) prejudice the protection of an individual's right to privacy or any other right under the Human Rights Act 2004;

In considering the factor in favour of nondisclosure above together with the documents, I consider that it is unreasonable to release some of the personal information contained in the documents namely contact information. Such contact information includes direct contact numbers, the names and contact details of private individuals who have written to MLA's, contact details of industry players who may or may not have accepted the ACT Government's offer to participate in the drone trial, details of a previous FOI applicant and the direct contact details of an AFP Officer. This is personal information that is either not publicly available or it has been provided for specifically dealing with the ACT Government. I am of the opinion that the release of this information may prejudice the protection of the individuals' right to privacy or any other right under the *Human Rights Act 2004*. I am satisfied that this factor favouring non-disclosure should be afforded significant weight as it relates to individual privacy.

Noting the pro-disclosure intent of the Act, I am satisfied that redacting only the information that is not in the public interest to release, whilst releasing the rest of the information will ensure that the intent of the Act is met and will provide you with access to the majority of the information held by CMTEDD within the scope of your request.

Charges

Pursuant to *Freedom of Information (Fees) Determination 2017 (No 2)* processing charges are applicable for this request because the total number of pages to be released to you exceeds the charging threshold of 50 pages. However, the charges have been waived in accordance with section 107(2)(b) of the Act.

Online publishing – Disclosure Log

Under section 28 of the Act, CMTEDD maintains an online record of access applications called a disclosure log. Your original access application, my decision and documents released to you in response to your access application will be published in the CMTEDD disclosure log 3 days after the date of this decision. Your personal contact details will not be published.

You may view CMTEDD disclosure log at https://www.cmtedd.act.gov.au/functions/foi/disclosure-log.

Ombudsman Review

My decision on your access request is a reviewable decision as identified in Schedule 3 of the Act. You have the right to seek a review by the Ombudsman of this outcome under section 73 of the Act within 20 working days from the day that my decision is published in the CMTEDD disclosure log, or a longer period allowed by the Ombudsman.

If you wish to request a review of my decision you may write to the Ombudsman at:
The ACT Ombudsman
GPO Box 442
CANBERRA ACT 2601
Via email: actfoi@ombudsman.gov.au

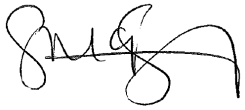
ACT Civil and Administrative Tribunal (ACAT) Review

Under section 84 of the Act, if a decision is made by the Ombudsman under section 82(1), you may apply to the ACAT for a review of the Ombudsman decision. Further information may be obtained from the ACAT at:

ACT Civil and Administrative Tribunal
Level 4, 1 Moore St
GPO Box 370
Canberra City ACT 2601
Telephone: (02) 6207 1740
http://www.acat.act.gov.au/

Should you have any queries in relation to your request please contact me by telephone on 6207 7754 or by email at CMTEDDFOI@act.gov.au.

Yours sincerely,



Sarah McBurney
Information Officer
Information Access Team
Chief Minister, Treasury and Economic Development Directorate

29 May 2019

ACT Government
Chief Minister, Treasury and Economic Development

FREEDOM OF INFORMATION REQUEST SCHEDULE

NAME	WHAT ARE THE PARAMETERS OF THE REQUEST	Reference NO.
[redacted]	Documents relating to the ACT Government's planning for Project Wing	CMTEDDFOI2019-090

Ref No	Page number	Description	Date	Status	Reason for Exemption	Online Release Status
		1. Risk and Regulatory Analysis				
1	1-8	CASA Instruments	21/29 Jun 2018	Full release	N/A	Yes
2	9-42	Request/Response - Australian Government Solicitor Legal Advice	1 Nov 2018	Exempt	Schedule 1 1.2 Information subject to legal professional privilege	No
3	43-48	Email – Project Wing – geographical restriction issue/Brief	2 Nov 2018	Partial release	Schedule 1 1.2 Information subject to legal professional privilege	Yes
4	49-51	Email – delivery drones in the ACT	17 Nov 2017	Full release	N/A	Yes
5	52-53	Email – Project Wing – points for discussion	4 Dec 2017	Full release	N/A	Yes
6	54	Email – Project Wing – Friday meeting	5 Dec 2017	Full release	N/A	Yes
7	55-81	Email – ACT Gov Risk Assessment	20 Dec 2017	Full release	N/A	Yes
8	82-83	Email – Drone safety discussion	1 March 2018	Full release	N/A	Yes
9	84-85	Email – ACT Gov response to queries about Project Wing	23 Mar 2018	Full release	N/A	Yes
10	86	Email – Future Regulation of drones in the ACT	13 Jun 2018	Partial release	Sch 2 s2.2 (a)(ii)	Yes
11	87-115	Email – Project Wing – Code of Practice	2 Nov 2018	Full release	N/A	Yes
12	116-120	Email – Drones regulation plan	12 Nov 2018	Full release	N/A	Yes
13	121-218	Email – Actions arising from drone inquiry meeting... Attachment Project Wing Fauna Study - exempt (pages 124-174)	6 Dec 2018	Part al release	Schedule 1 (1.12) Information in possession of ombudsman.	Yes

14	219-220	Minister Barr letter to private citizens	9 Nov 2018	Partial release	Sch 2 s2.2 (a)(ii)	Yes
15	221-233	Ministerial – Legal Advice	4 Jan 2019	Exempt	Schedule 1 1.2 Information subject to legal professional privilege	No
16	234	Email – Chief Ministers talkback drone regulation	21 Feb 2019	Full release	N/A	Yes
17	235-238	Email – Drone noise complaint	7 Mar 2019	Full release	N/A	Yes
18	239-240	List of Act's	undated	Full release	N/A	Yes
19	241-243	Drone Working Group document	Undated	Full release	N/A	Yes
		2. Drones Working Group				
20	1-2	Email – Industry Forum	4 Oct 2018	Full release	N/A	Yes
21	3-7	Email – Cross Government Drones Working Group/responsibilities	7 Aug 2018	Full release	N/A	Yes
22	8-9	Email – Cross Government Drones Working Group	27 Aug 2018	Full release	N/A	Yes
23	10-11	Email – Drone regulation?	29 Aug 2018	Full release	N/A	Yes
24	12-13	Email – Drones working group	29 Aug 2018	Full release	N/A	Yes
25	14-37	Email – Community Views Results	4 Sep 2018	Full release	N/A	Yes
26	38-41	Email – UAV Industry Forum	28 Sep 2018	Full release	N/A	Yes
27	42-47	Email - Drones	3 Oct 2018	Partial release	Sch 2 s2.2 (a)(ii)	Yes
28	48-51	Email – Industry forum	4 Oct 2018	Full release	N/A	Yes
29	52-60	Email - Drones	4 Oct 2018	Partial release	Sch 2 s2.2 (a)(ii)	Yes
30	61-62	Email – UAV Industry Forum stakeholders	5 Oct 2018	Partial release	Sch 2 s2.2 (a)(ii)	Yes
31	63-68	Email – drones Out of scope information has been removed	4 Oct 2018	Partial release	Sch 2 s2.2 (a)(ii)	Yes
32	69	Email – drones working group	30 Oct 2018	Full release	N/A	Yes

33	70-73	Email – Project Wing	3 Dec 2018	Partial release	Sch 2 s2.2 (a)(ii)	Yes
34	74-81	Email - Drones	5 Dec 2018	Full release	N/A	Yes
35	82-86	Email – Meeting about drones	9 Jan 2019	Full release	N/A	Yes
36	87-165	Email – Circulation of Drones material – part 1 – Project Wing Fauna Study (FINAL REPORT) Exempt Duplicated Alpha Beta report removed available at document 13	24 Jan 2019	Partial release	Schedule 1 1.2 Information subject to legal professional privilege. Schedule 1 1.12 Information in possession of ombudsman.	Yes
37	166	Email – Drones Working Committee	28 Jan 2019	Full release	N/A	Yes
38	167-168	Email – Use of drones by third parties	29 Jan 2019	Full release	N/A	Yes
39	169-172	Email – Meeting about drones	7 Feb 2019	Full release	N/A	Yes
40	173-176	Meeting Minutes 2/2019	12 Feb 2019	Partial release	Schedule 1 1.2 Information subject to legal professional privilege.	Yes
41	177-185	Email – Legal Advice	18 Feb 2019	Exempt	Schedule 1 1.2 Information subject to legal professional privilege.	No
42	186-187	Email – Drones inquiry submission	20 Feb 2019	Partial release	Sch 2 s2.2 (a)(ii)	Yes
43	188-191	Email – Drones/New ANZCTC Working Group	14 Mar 2019	Partial release	Sch 2 s2.2 (a)(ii)	Yes
44	192-209	Email – Drones Working Group 2019 – Legal Advice (pages 197, 200-205)	20 Mar 2019	Partial release	Schedule 1 1.2 Information subject to legal professional privilege.	Yes
3. Inquiry into drone delivery service						
45	1-14	Inquiry into drone delivery systems in the ACT	27 Feb 2019	Full release	N/A	Yes
46	15-27	Australian Government response to the Senate Standing Committee on Rural and Regional Affairs and Transport Report	1 Nov 2018	Full release	N/A	Yes
47	28-39	Email – Correspondence from J Hanson MLA	6 Dec 2018	Full release	N/A	Yes
48	40-41	Email – (Titled Taxis) - Standing committee on drone delivery Out of scope information removed.	4 Jan 2019	Full release	N/A	Yes
49	42-45	Ministerial Brief	8 Jan 2019	Exempt	Schedule 1 1.6 Cabinet Information	No
50	46-48	Email - Privacy	11 Jan 2019	Full release	N/A	Yes

51	49-51	Email – Inquiry Submission	18 Feb 2019	Full release	N/A	Yes
52	52-81	Cabinet Sensitive Submission	6 Feb 2019	Exempt	Schedule 1 1.6 Cabinet Information	No
53	82-86	Email – QTB Drones Submission	7 March 2019	Full release	N/A	Yes
4. Gungahlin Mitchell Ministerial Correspondence						
54	1-2	Letter from MLA Gentleman to private citizen	5 Feb 2019	Partial release	Sch 2 s2.2 (a)(ii)	Yes
55	3-4	Email – Wing timeline	21 Feb 2019	Full release	N/A	Yes
56	5-20	DA 201834859 - Mitchell	8 Mar 2019	Full release	N/A	Yes
57	21	CASA Letter to Ministers	9 Apr 2019	Full release	N/A	Yes
58	22-23	Email – ACT Remotely Piloted Aircraft	16 Mar 2019	Full release	N/A	Yes
59	24-25	Email – Wing Aviation Pty Ltd – approval/exemptions	16 Mar 2019	Full release	N/A	Yes
5. Bonython Trial Ministerial Correspondence						
60	1-2	MLA Gentleman letter to private citizen	11 Apr 2018	Partial release	Sch 2 s2.2 (a)(ii)	Yes
61	3	MLA Barr letter to MLA Burch	13 Apr 2018	Full release	N/A	Yes
62	4-7	Email – Updated info – drones in Tuggeranong	30 Aug 2018	Full release	N/A	Yes
63	8-9	Letter from MLA Ramsay to private citizen	27 Sep 2018	Partial release	Sch 2 s2.2 (a)(ii)	Yes
64	10-11	Letter from MLA Ramsay to private citizen	19 Oct 2018	Partial release	Sch 2 s2.2 (a)(ii)	Yes
65	12	Email – Wing Drone Trial Bonython	2 Nov 2018	Partial release	Sch 2 s2.2 (a)(ii)	Yes
66	13-14	Letter from Minister Barr to private citizen	9 Nov 2018	Partial release	Sch 2 s2.2 (a)(ii)	Yes
67	15-17	Email – Wing Australia	6 Feb 2019	Partial release	Sch 2 s2.2 (a)(ii)	Yes
68	18-19	Minister Ramsay letter to private citizen	13 Feb 2019	Partial release	Sch 2 s2.2 (a)(ii)	Yes

69	20	Email – Google Australia Licence	14 Feb 2019	Full release	N/A	Yes
70	21-23	Email – Project Wing decommissioning	27 Feb 2019	Full release	N/A	Yes
71	24-25	Minister Ramsay letter to private citizen	28 Feb 2019	Partial release	Sch 2 s2.2 (a)(ii)	Yes
72	26-27	Email – Urgent Advice – Drones: Bonython	8 Mar 2019	Full release	N/A	Yes
73	28	Wing and Greenway Licence Update	1 Apr 2019	Full release	N/A	Yes
6. Project Wing Ministerial Briefs						
74	1	Email – talking points	1 Nov 2018	Full release	N/A	Yes
75	2-3	Email - Drones	16 Nov 2018	Full release	N/A	Yes
76	4	Email – Drones Site Visit cancelled	13 Dec 2018	Full release	N/A	Yes
77	5-9	Email – Req from MO - drones	21 Jan 2019	Full release	N/A	Yes
78	10-11	Letter from Chief Minister to private citizen	9 Nov 2018	Partial release	Sch 2 s2.2 (a)(ii)	Yes
79	12-15	Ministerial Brief 2019/789	18 Feb 2019	Full release	N/A	Yes
80	16-17	Letter from MLA's to CASA	5 Mar 2019	Full release	N/A	Yes
7. Additional P&C documents						
81	1-5	Email – Letter to CASA	27 Mar 2019	Full release	N/A	Yes
82	6-13	Email – CASA Meeting	2 Apr 2019	Full release	N/A	Yes
83	14-15	Email – Drones talkback brief	4 Apr 2019	Full release	N/A	Yes
84	16-17	Email – Casa Message	8 Apr 2019	Full release	N/A	Yes
85	18-24	Email – FOR INFORMATION: Wing aviation Pty Ltd - approval	8 Apr 2019	Full release	N/A	Yes
86	25	Email – Wing license – CASA notification	9 Apr 2019	Full release	N/A	Yes

8. Additional P&C documents						
87	1-6	Meeting Brief – meeting with CASA	3 Mar 2019	Full release	N/A	Yes
88	7-9	Brief signed by GR	3 Mar 2019	Full release	N/A	Yes
89	10-17	FOR APPROVAL URGENT Drones talkback brief	4 Apr 2019	Full release	N/A	Yes
90	18-24	FOR APPROVAL URGENT Drones talkback brief DLM	4 Apr 2019	Full release	N/A	Yes
91	25-26	URGENT Drones talkback brief	4 Apr 2019	Full release	N/A	Yes
92	27-33	URGENT Talkback brief	4 Apr 2019	Full release	N/A	Yes
93	34-36	Drones Working Group	18 Apr 2019	Full release	N/A	Yes
94	37	MOU Matters	1 May 2019	Full release	N/A	Yes
Total No of Docs						
94 -670 pgs						

Australian Government

Civil Aviation Safety Authority

Instrument number CASA EX76/18

I, JONATHAN ALECK, Acting Director of Aviation Safety, on behalf of CASA, make this instrument under regulations 11.160 and 11.205 of the *Civil Aviation Safety Regulations 1998*.

[Signed Jonathan Aleck]
Jonathan Aleck
Acting Director of Aviation Safety

21 June 2018

CASA EX76/18 — Remotely Piloted Aircraft Operation Over Bonython (Unmanned Systems Australia Pty Ltd) Exemption 2018

1 Name

This instrument is *CASA EX76/18 — Remotely Piloted Aircraft Operation Over Bonython (Unmanned Systems Australia Pty Ltd) Exemption 2018*.

2 Definitions

Note In this instrument certain terms and expressions have the same meaning as they have in the *Civil Aviation Act 1988* and the regulations, including: ***remote pilot licence***, ***RPA***.

In this instrument:

Bonython means the Canberra suburb of Bonython approved by CASA under paragraph 101.030 (1) (a) of CASR as an area for the operation of the relevant aircraft by Unmanned Systems Australia.

Note For the CASA approved operating area of Bonython — see Instrument Number RPAS2018-1746.

chief remote pilot means a person performing the functions and duties mentioned in regulation 101.342 of CASR.

documented practices and procedures has the same meaning as in paragraph 101.335 (1) (d) of CASR.

intended, in relation to a recovery site, means a site intended by Unmanned Systems Australia to be used for the recovery of a relevant aircraft.

operator remote pilot means a holder of a remote pilot licence who is an employee of Unmanned Systems Australia.

Project Wing flight manual means *Unmanned Systems Australia Pty Ltd RPAS Operational Procedures*, dated 2018, version 6.

relevant aircraft means a Hummingbird V2.0 Powered Lift Unmanned Aerial Vehicle operated by Unmanned Systems Australia under its certification as an RPA operator.

Note A person who was certified as a UAV operator as at 28 September 2016 is taken to have been certified as an RPA operator — see subregulation 202.462 (3) of CASR.

remote pilot station means the laptop, control unit and avionic interfaces:

(a) approved by CASA as a remote pilot station; and

(b) used to control and command a relevant aircraft.

trial means the Google Project Wing research and development activity for the Google Project Wing "Drone delivery" program that is limited to the operation of relevant aircraft in connection with the delivery of goods to persons who have:

(a) applied in writing to Unmanned Systems Australia to become a trial participant; and

(b) been approved by Unmanned Systems Australia as a trial participant; and

(c) requested a specific delivery via the Google smart phone application to a pre-approved delivery location located within Bonython.

Unmanned Systems Australia means Unmanned Systems Australia Pty Ltd, ARN 827475.

3 Application

This instrument applies in relation to Unmanned Systems Australia if it operates a relevant aircraft in or over Bonython for the purposes of the trial.

4 Exemption — operating near people

(1) The following persons, while operating a relevant aircraft in or over Bonython, are exempt from compliance with subregulation 101.245 (1) of CASR to the extent that the subregulation requires that a person must not operate a relevant aircraft within 30 metres of a person who is not directly associated with the operation of the relevant aircraft:

(a) Unmanned Systems Australia;

(b) the operator remote pilot of the relevant aircraft.

Note A person who was certified as a UAV controller as at 28 September 2016 is taken to have been granted a remote pilot licence under regulation 101.295 of CASR — see regulation 202.461 (3) of CASR.

(2) The exemption is subject to the conditions that apply to the person that are mentioned in sections 7 and 8.

5 Exemption — operating over populous areas

(1) The following persons, while operating a relevant aircraft over Bonython, are exempt from compliance with subregulation 101.280 (2) of CASR to the extent that the subregulation requires that a person must not operate a relevant aircraft at a height less than the height from which, if any of its components fails, it would be able to clear the area:

(a) Unmanned Systems Australia;

(b) the operator remote pilot of the relevant aircraft.

(2) The exemption is subject to the conditions that apply to the person that are mentioned in sections 7 and 8.

6 Exemption — compliance with documented practices and procedures

(1) Unmanned Systems Australia is exempt from paragraph 101.340 (1) (e) of CASR to the extent that the paragraph requires Unmanned Systems Australia to comply with a requirement of its documented practices and procedures that is inconsistent with a requirement under this instrument.

Note CASA considers that the Unmanned Systems Australia documented practices and procedures include at least the Project Wing flight manual and the *Unmanned Systems Australia Pty Ltd Operations Manual*, dated 6 April 2018, version 6.

(2) The exemption in subsection (1) is subject to the condition mentioned in paragraph 8 (1) (b).

(3) An operator remote pilot is exempt from regulation 101.370 of CASR to the extent that the paragraph requires the operator remote pilot to comply with a requirement of the documented practices and procedures of Unmanned Systems Australia that is inconsistent with a requirement under this instrument.

(4) The exemption in subsection (3) is subject to the condition that the operator remote pilot notify the Unmanned Systems Australia chief remote pilot in writing of the inconsistency, within 1 business day of becoming aware of the inconsistency.

7 Operational conditions

(1) Unmanned Systems Australia and the operator remote pilot must ensure that:

(a) the relevant aircraft is not operated in or over Bonython when a total fire ban is in place; and

(b) the relevant aircraft is equipped and operated with an active fail-safe mode that will ensure that, in the event of a data-link loss, the aircraft will land or otherwise terminate the flight in accordance with the procedures mentioned in the Project Wing flight manual; and

(c) any site from which the relevant aircraft is launched, or intended to be recovered, must not be located within 15 metres of a sealed road, and any launch or recovery operation for the relevant aircraft must not pose an unreasonable level of distraction to motorists; and

(d) the relevant aircraft is not operated:

(i) more than 400 feet above ground level; or

(ii) at night; or

(ii) outside public gatherings; or

(iii) over Athllon Drive, Drakeford Drive or Woodstock Drive; or

(iv) less than 5 metres overhead a person, or 2 metres horizontal distance from a person; or

(v) within 3 nm of the boundary of Canberra airport plus a reasonable operational buffer to avoid any unintended incursion into that airspace.

(2) Unmanned Systems Australia must not use a launch and intended recovery site unless the location of the site has been notified to CASA in writing.

(3) Unmanned Systems Australia and the operator remote pilot must not operate a relevant aircraft in or over Bonython outside the hours of:

(a) 7:00am to 8:00pm Monday to Saturday; and

(b) 8:00am to 8:00pm Sunday and public holidays.

Note Under ACT legislation, there are ACT government restrictions relating to suburban noise that may also apply to Unmanned Systems Australia.

(4) Unmanned Systems Australia must not, at a particular time, operate more than 15 aircraft in or over Bonython from each remote pilot station.

8 Regulatory conditions

(1) In the event of an inconsistency between the documented practices and procedures of Unmanned Systems Australia and this instrument, Unmanned Systems Australia must:

(a) comply with this instrument to the extent of the inconsistency; and

(b) notify CASA in writing of the inconsistency, within 2 business days of becoming aware of the inconsistency.

(2) Unmanned Systems Australia must, within 30 days of the end of each calendar month during which this instrument is in force, provide CASA with a report that contains the information mentioned in subsection (3) in relation to operations for the trial during the month.

(3) For subsection (2), the information is the following:

(a) total number of flights conducted for the trial;

(b) total number of flights which were deliveries for the trial;

(c) total hours of operation for the trial;

(d) number of incidents;

(e) number of accidents;

(f) in relation to each incident and accident:

(i) a description, analysis of causal factors, corrective actions identified, and the extent to which corrective actions have been implemented; and

(ii) if a relevant aircraft was recovered from an site other than an intended recovery site notified to CASA, the location of the recovery site.

(4) Unmanned Systems Australia must not amend its documented practices and procedures, or implement a change to the procedures mentioned in paragraph 7 (1) (b), unless the change has been approved in writing by CASA.

Note A change to the matters mentioned in this subsection will result in the reissue of this instrument to give effect to the amended matters.

9 Repeal

This instrument is repealed at the end of 31 May 2021.

Australian Government

Civil Aviation Safety Authority

Instrument number CASA EX82/18

I, SHANE PATRICK CARMODY, Director of Aviation Safety, on behalf of CASA, make this instrument under regulations 11.160 and 11.205 of the *Civil Aviation Safety Regulations 1998*.

[Signed S. Carmody]
Shane Carmody
Director of Aviation Safety

29 June 2018

CASA EX82/18 — Remotely Piloted Aircraft Operation Over Bonython (Unmanned Systems Australia Pty Ltd) Exemption 2018

1 Name

This instrument is *CASA EX82/18 — Remotely Piloted Aircraft Operation Over Bonython (Unmanned Systems Australia Pty Ltd) Exemption 2018*.

2 Definitions

Note In this instrument certain terms and expressions have the same meaning as they have in the *Civil Aviation Act 1988* and the regulations, including: ***remote pilot licence***, ***RPA***.

In this instrument:

Bonython means the Canberra suburb of Bonython approved by CASA under paragraph 101.030 (1) (a) of CASR as an area for the operation of the relevant aircraft by Unmanned Systems Australia.

Note For the CASA approved operating area of Bonython — see Instrument Number RPAS2018-1746.

chief remote pilot means a person performing the functions and duties mentioned in regulation 101.342 of CASR.

documented practices and procedures has the same meaning as in paragraph 101.335 (1) (d) of CASR.

intended, in relation to a recovery site, means a site intended by Unmanned Systems Australia to be used for the recovery of a relevant aircraft.

operator remote pilot means a holder of a remote pilot licence who is an employee of Unmanned Systems Australia.

Project Wing flight manual means *Unmanned Systems Australia Pty Ltd RPAS Operational Procedures*, dated 2018, version 6.

relevant aircraft means a Hummingbird V2.0 Powered Lift Unmanned Aerial Vehicle operated by Unmanned Systems Australia under its certification as an RPA operator.

Note A person who was certified as a UAV operator as at 28 September 2016 is taken to have been certified as an RPA operator — see subregulation 202.462 (3) of CASR.

remote pilot station means the laptop, control unit and avionic interfaces:

(a) approved by CASA as a remote pilot station; and

(b) used to control and command a relevant aircraft.

trial means the Google Project Wing research and development activity for the Google Project Wing "Drone delivery" program that is limited to the operation of relevant aircraft in connection with the delivery of goods to persons who have:

(a) applied in writing to Unmanned Systems Australia to become a trial participant; and

(b) been approved by Unmanned Systems Australia as a trial participant; and

(c) requested a specific delivery via the Google smart phone application to a pre-approved delivery location located within Bonython.

Unmanned Systems Australia means Unmanned Systems Australia Pty Ltd, ARN 827475.

3 Application

This instrument applies in relation to Unmanned Systems Australia if it operates a relevant aircraft in or over Bonython for the purposes of the trial.

4 Exemption — operating near people

(1) The following persons, while operating a relevant aircraft in or over Bonython, are exempt from compliance with subregulation 101.245 (1) of CASR to the extent that the subregulation requires that a person must not operate a relevant aircraft within 30 metres of a person who is not directly associated with the operation of the relevant aircraft:

(a) Unmanned Systems Australia;

(b) the operator remote pilot of the relevant aircraft.

Note A person who was certified as a UAV controller as at 28 September 2016 is taken to have been granted a remote pilot licence under regulation 101.295 of CASR — see regulation 202.461 (3) of CASR.

(2) The exemption is subject to the conditions that apply to the person that are mentioned in sections 7 and 8.

5 Exemption — operating over populous areas

(1) The following persons, while operating a relevant aircraft over Bonython, are exempt from compliance with subregulation 101.280 (2) of CASR to the extent that the subregulation requires that a person must not operate a relevant aircraft at a height less than the height from which, if any of its components fails, it would be able to clear the area:

(a) Unmanned Systems Australia;

(b) the operator remote pilot of the relevant aircraft.

(2) The exemption is subject to the conditions that apply to the person that are mentioned in sections 7 and 8.

6 Exemption — compliance with documented practices and procedures

(1) Unmanned Systems Australia is exempt from paragraph 101.340 (1) (e) of CASR to the extent that the paragraph requires Unmanned Systems Australia to comply with a requirement of its documented practices and procedures that is inconsistent with a requirement under this instrument.

Note CASA considers that the Unmanned Systems Australia documented practices and procedures include at least the Project Wing flight manual and the *Unmanned Systems Australia Pty Ltd Operations Manual*, dated 6 April 2018, version 6.

(2) The exemption in subsection (1) is subject to the condition mentioned in paragraph 8 (1) (b).

(3) An operator remote pilot is exempt from regulation 101.370 of CASR to the extent that the paragraph requires the operator remote pilot to comply with a requirement of the documented practices and procedures of Unmanned Systems Australia that is inconsistent with a requirement under this instrument.

(4) The exemption in subsection (3) is subject to the condition that the operator remote pilot notify the Unmanned Systems Australia chief remote pilot in writing of the inconsistency, within 1 business day of becoming aware of the inconsistency.

7 Operational conditions

(1) Unmanned Systems Australia and the operator remote pilot must ensure that:

(a) the relevant aircraft is not operated in or over Bonython when a total fire ban is in place; and

(b) the relevant aircraft is equipped and operated with an active fail-safe mode that will ensure that, in the event of a data-link loss, the aircraft will land or otherwise terminate the flight in accordance with the procedures mentioned in the Project Wing flight manual; and

(c) any site from which the relevant aircraft is launched, or intended to be recovered, must not be located within 15 metres of a sealed road, and any launch or recovery operation for the relevant aircraft must not pose an unreasonable level of distraction to motorists; and

(d) the relevant aircraft is not operated:

(i) more than 400 feet above ground level; or

(ii) at night; or

(ii) outside public gatherings; or

(iii) over Athllon Drive, Drakeford Drive or Woodcock Drive; or

(iv) less than 5 metres overhead a person, or 2 metres horizontal distance from a person; or

(v) within 3 nautical miles of the boundary of Canberra airport plus a reasonable operational buffer to avoid any unintended incursion into that airspace.

(2) Unmanned Systems Australia must not use a launch and intended recovery site unless the location of the site has been notified to CASA in writing.

(3) Unmanned Systems Australia and the operator remote pilot must not operate a relevant aircraft in or over Bonython outside the hours of:

(a) 7:00am to 8:00pm Monday to Saturday; and

(b) 8:00am to 8:00pm Sunday and public holidays.

Note Under ACT legislation, there are ACT government restrictions relating to suburban noise that may also apply to Unmanned Systems Australia.

(4) Unmanned Systems Australia must not, at a particular time, operate more than 15 aircraft in or over Bonython from each remote pilot station.

8 Regulatory conditions

(1) In the event of an inconsistency between the documented practices and procedures of Unmanned Systems Australia and this instrument, Unmanned Systems Australia must:

(a) comply with this instrument to the extent of the inconsistency; and

(b) notify CASA in writing of the inconsistency, within 2 business days of becoming aware of the inconsistency.

(2) Unmanned Systems Australia must, within 30 days of the end of each calendar month during which this instrument is in force, provide CASA with a report that contains the information mentioned in subsection (3) in relation to operations for the trial during the month.

(3) For subsection (2), the information is the following:

(a) total number of flights conducted for the trial;

(b) total number of flights which were deliveries for the trial;

(c) total hours of operation for the trial;

(d) number of incidents;

(e) number of accidents;

(f) in relation to each incident and accident:

(i) a description, analysis of causal factors, corrective actions identified, and the extent to which corrective actions have been implemented; and

(ii) if a relevant aircraft was recovered from an site other than an intended recovery site notified to CASA, the location of the recovery site.

(4) Unmanned Systems Australia must not amend its documented practices and procedures, or implement a change to the procedures mentioned in paragraph 7 (1) (b), unless the change has been approved in writing by CASA.

Note A change to the matters mentioned in this subsection will result in the reissue of this instrument to give effect to the amended matters.

9 Repeal

This instrument is repealed at the end of 31 May 2019.

Schedule 1 - 1.2 LPP

Schedule 1 - 1.2 LPP

Schedule 1 - 1.2 LPP

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Schedule 1 - 1.2 LPP

From:"Konovalov, Alexander" <Alexander.Konovalov@act.gov.au>
Sent:02/11/2018 2:54 PM
To:"Potter, Chantel" <Chantel.Potter@act.gov.au>
Subject:FW: Project Wing - geographical restriction issue [SEC=UNCLASSIFIED]
Attachments:signed brief - 15 February 2018.pdf

From: Konovalov, Alexander
Sent: Thursday, 15 February 2018 12:26 PM
To: Deasey, Michael <Michael.Deasey@act.gov.au>
Cc: Leece, Kristin <Kristin.Leece@act.gov.au>; Teo, Hong <Hong.Teo@act.gov.au>
Subject: RE: Project Wing - geographical restriction issue [SEC=UNCLASSIFIED]

Hi Michael, here is the signed brief for your reference.

As you can see, Geoffrey has formed a pretty strong view that Regulatory Reform in Chief Ministers needs to step up and start addressing the long term policy development issues. Project Wing is currently only a side project for me and it certainly merits a lot more resources and attention going forward.

Alex

From: Rutledge, Geoffrey
Sent: Wednesday, 14 February 2018 2:42 PM
To: Deasey, Michael <Michael.Deasey@act.gov.au>; Konovalov, Alexander <Alexander.Konovalov@act.gov.au>
Cc: Dunstan, David <David.Dunstan@act.gov.au>; Roach, Adam <Adam.Roach@act.gov.au>; Teo, Hong <Hong.Teo@act.gov.au>; Leece, Kristin <Kristin.Leece@act.gov.au>
Subject: RE: Project Wing - geographical restriction issue [SEC=UNCLASSIFIED]

Thank you all for your support and work on this to date.

Yes I have been across the full information, and am mindful that there are many issues to be considered both in the short and long term.

I am also very mindful that as a planning authority, we need to licence and regulate what we are able to regulate and enforce.

The 'termination by convenience' in a short timeframe provides us with the flexibility to terminate for foreseen or unforeseen risks, and without the need to itemise nor provide criteria or rationale for corrective action by Project Wing or establishment of a conflict resolution process.

I also think that many of the risks identified need to be addressed through the ACT Government policy on both industry development and regulation of unmanned aerial services.

I understand that the Reg reform team is meeting with the Minister for Regulatory Services seeking agreement to develop policy on this matter. I am hopeful that this will see the Reg Reform capture the good work done by GSO and ourselves in the preparation of now three land use licences.

I thank you for our collaborative and open approach on this interesting project.

Geoffrey

From: Deasey, Michael
Sent: Wednesday, 14 February 2018 12:27 PM
To: Konovalov, Alexander <Alexander.Konovalov@act.gov.au>; Rutledge, Geoffrey <Geoffrey.Rutledge@act.gov.au>
Cc: Dunstan, David <David.Dunstan@act.gov.au>; Roach, Adam <Adam.Roach@act.gov.au>; Teo, Hong <Hong.Teo@act.gov.au>; Leece, Kristin <Kristin.Leece@act.gov.au>
Subject: RE: Project Wing - geographical restriction issue [SEC=UNCLASSIFIED]

ACT GOVERNMENT SOLICITOR
(see confidentiality notice below)

For completeness my email advice to Alex of 9 February is attached. I assume it has been circulated to you by Alex.

Regards

Michael Deasey | Manager - Property & Commercial | ACT Government Solicitor
☎ 02 620 53754 | 🖷 02 620 70650 | DX 5602 Canberra | ✉ PO Box 260 Civic Square ACT 2608

www.actgs.act.gov.au

From: Konovalov, Alexander
Sent: Wednesday, 14 February 2018 10:25 AM
To: Rutledge, Geoffrey <Geoffrey.Rutledge@act.gov.au>
Cc: Dunstan, David <David.Dunstan@act.gov.au>; Roach, Adam <Adam.Roach@act.gov.au>; Deasey, Michael <Michael.Deasey@act.gov.au>
Subject: Project Wing - geographical restriction issue [SEC=UNCLASSIFIED]

Good morning.

Please find attached a brief seeking your agreement to a way forward on geographical restrictions as part of settling a licence with Project Wing. I would appreciate your consideration and decision.

Regards,
Alex

Alexander Konovalov | Senior Manager, Land Release and Economics | Phone: 6205 2634 | alexander.konovalov@act.gov.au
Land Supply and Policy | Environment, Planning and Sustainable Development Directorate | **ACT Government**

ACT Government
Environment, Planning and Sustainable Development

FOR OFFICIAL USE ONLY

BRIEF

To:	Deputy Director-General, Sustainability & the Built Environment
From:	Senior Manager, Land Release and Economics
Subject:	Project Wing – geographical restriction issue
Critical Date:	16 February 2018
Critical Reason:	To settle a licence with Project Wing

Tracking No.: 18/04141

Purpose
To seek your agreement to a way forward on geographical restrictions as part of settling a licence with Project Wing.

Recommendations
That you:

- **Agree** to accept Project Wing's position that the licence should not include a clause providing the ACT Government with the ability to identify new geographical areas that they will not be permitted to deliver to.

Agreed / Not Agreed / Please Discuss

Geoffrey Rutledge ..... Rutledge. 15/2/18

DDG Feedback

Pls provide this brief in full to the reg reform, with a copy to GSO (Michael Deasey).

Background

1. On 25 January 2018 the ACT Government provided Project Wing with a one month licence for part Block 16 Section 46 Greenway. This licence has allowed Project Wing to set up their operations, but not fly their drones.

2. Since this date, we have been in discussions with Project Wing on a 6 month licence that would include an operational agreement for delivery drone operations.

Issues

3. The issue of geographical restrictions has emerged as a sticking point during negotiations. Namely, whether the licence will have a clause allowing the ACT Government to identify new locations during the trial that Project Wing will not be allowed to deliver to:

    a. Our most significant issue is that Project Wing should not be permitted to fly over gaols, remand centres and embassies. Project Wing have accepted this position and the licence will include a map carving out these locations.

4. On 9 February 2018, I lead a negotiation session with Project Wing where this issue was discussed but not resolved. Schedule 1 1.2 Legal Professional Privilege

5. On 13 February 2018, we held a teleconference with Project Wing. See Attachment B for the meeting notes.

Consideration of risk

6. On 20 December 2017, we provided CASA with our risk assessment of Project Wing's trial. Following further discussions with CASA on 17 January 2018, we updated the risk assessment and provided CASA with the updated version on 19 January 2018 (see Attachment C).

7. Our risk assessment included a risk for sensitive locations, with examples cited of embassies, schools, hospital and gaols. The proposed mitigation was to consider including geographical restrictions in the licence. The current licence does include this geographical restriction for gaols, remand centres and embassies. Accordingly a significant element of this risk has been mitigated according to the earlier assessment.

8. As part of negotiations with Project Wing, we came to the view that flying over and delivery to schools was not a key risk, as the user would need to be a registered user and be a credit card holder. As a result schools were excluded as a critical geographical concern.

Recommended approach

9. The termination for convenience clause, monthly complaints reporting and ongoing project oversight meetings with Project Wing will play a considerable role in helping us to respond to and manage emerging concerns.

10. Whilst there is not a specific contractual recourse for geographical issues. There is a 'termination by convenience' clause which could be exercised at any time.

11. The licence is temporary, and Project Wing will submit a Development Application (DA) in the near future which will undertake wide spread community engagement, including that required to meet the statutory requirements of a DA.

12. During the first stage trial at Guises Creek, and in preparation for Stage 2 Project Wing have demonstrated a responsive and collaborative approach to engage with Government so far and they have a strong incentive to continue to behave constructively.

13. The termination for convenience clause provides us with ultimate recourse, and Project Wing have a strong incentive to stay on good terms with the ACT Government.

Policy and regulation of unmanned aerial services (drones)

14. The issue of geographical/delivery restrictions, and other concerns is one that will need to be a part of long term policy development and engagement with the community. In this regard it is important to note that:

    a. a temporary licence on land use is not best equipped to deliver the long term policy for drones, and creating the right regulatory framework will be a mix of Federal and Territory regulation;

    b. as a matter of timing it would be premature to set out long term policy before the trial is substantially complete. As to do so would defeat the purpose of the trial which is to reveal the issues that may or may not need to be regulated and early positions are not necessary for long term policy development;

    c. the Planning Authority is perhaps not best equipped to provide a comprehensive regulatory framework for this emerging business; and

    d. there is a risk that in setting out or appearing to set out long term policy at this stage would risk a misperception that the Territory has a primary role in the trial and has already determined policy positions.

for future discussion with Reg Reform & GSO

Financial Implications

15. Nil.

Consultation

16. The GSO has provided us with advice on geographical restrictions (as included in Attachment A).

17. The Regulatory Reform Team in CMTEDD, has been an interested observer in the first stage trial, and been aware of the progress known to date. With the first stage trial complete, and second stage trial beginning, it is appropriate that the reform task be led by the Regulatory Reform Team in CMTEDD.

Benefits/Sensitivities

18. As outlined in this brief.

Media Implications

19. Nil.

Signatory Name: Alexander Konovalov Phone: 52634

Gobbitt, David

From: Duffy, Scott
Sent: Friday, 17 November 2017 2:42 PM
To: Gumley, Luke
Subject: FW: delivery drones in the ACT [SEC=UNCLASSIFIED]

UNCLASSIFIED

Hi Luke,

A follow-up communication from the ACT government requesting a meeting/ teleconference next week.

With the SORA CASA/Google work running early next week, I recommend scheduling a time for Wednesday afternoon.

Does this work for you (your diary is free)?

Scotty

From: Konovalov, Alexander [mailto:Alexander.Konovalov@act.gov.au]
Sent: Friday, 17 November 2017 12:53 PM
To: Duffy, Scott
Cc: Bennett, JamesP; Rutledge, Geoffrey; Dunstan, David
Subject: RE: delivery drones in the ACT [SEC=UNCLASSIFIED]

Good afternoon.

We had a teleconference with Project Wing this morning. In terms of our own assurance framework, there was a discussion around how we reflect the areas where CASA has regulatory oversight.

There was a general desire to make sure that our own framework (that focuses on broader community impacts) doesn't cross over into areas of CASA responsibility. However, it would also be useful if we could have a bit of assurance from CASA that these areas are covered off.

Could I please arrange a teleconference with you next week to discuss?

Regards,
Alex

From: Konovalov, Alexander
Sent: Monday, 13 November 2017 11:48 AM
To: 'Duffy, Scott' <Scott.Duffy@casa.gov.au>
Cc: Watson, Richard <Richard.Watson@act.gov.au>; Bennett, JamesP <JamesP.Bennett@act.gov.au>
Subject: RE: delivery drones in the ACT [SEC=UNCLASSIFIED]

Hi Scott, good to touch base this morning.

Here are a few dot points on what is happening with the ACT Government and Project Wing.

- Project Wing kicked off their Royalla trial on the 8th of October. They are operating out of an ACT Government site (Guises Creek fire station).
- We are in discussions with Project Wing about an expanded trial in the south of Canberra (Tuggeranong). We have arranged a suitable site on some unleased ACT Government land.

- Subject to CASA approval, this expanded trial would involve them flying over at least some of the suburbs of Tuggeranong.
- Our plan is to have some sort of agreed operating framework (addressing risk, community impacts) to include as a condition for a licence for use of the Tuggeranong site. This is currently under development.
- Our ambition is to settle the licence for the land and the operating framework by the end of the year.

I would appreciate advice on the ongoing progress of air safety discussions. When it comes time to settle the operating framework – we'll certainly appreciate assurance (and a bit of detail, does not need to be very technical) that the safety issues have been well covered.

Alex

From: Duffy, Scott [mailto:Scott.Duffy@casa.gov.au]
Sent: Friday, 10 November 2017 5:16 PM
To: Konovalov, Alexander <Alexander.Konovalov@act.gov.au>
Cc: Watson, Richard <Richard.Watson@act.gov.au>
Subject: RE: delivery drones in the ACT [SEC=UNCLASSIFIED]

UNCLASSIFIED

Hi Alex,

I tried to call. My contact details are below. Looking forward to chatting with you.

Kind regards,

Scott

Scott Duffy

Team Leader RPAS Operations

RPAS Branch

CASA\Aviation Group

e: scott.duffy@casa.gov.au

p: 07 3144 7412 **m:** 0415 732 747

12-14 The Circuit, Brisbane Airport QLD 4007

GPO Box 2005, Canberra ACT 2601

www.casa.gov.au

Can I fly there? *Drone safety app*
Drones *RPAS information on the CASA website*
Click here to subscribe to the Remotely Piloted Aircraft Systems mailing list

From: Konovalov, Alexander [mailto:Alexander.Konovalov@act.gov.au]
Sent: Friday, 10 November 2017 3:58 PM
To: Duffy, Scott
Cc: Watson, Richard
Subject: delivery drones in the ACT [SEC=UNCLASSIFIED]

Good afternoon.

Richard Watson (ACT Government, Regulatory Reform) provided me with your contact details.

As you are probably aware, Project Wing are up and running with a trial on the ACT/NSW border. Flying out of an ACT site.

I'm working on the issue for the ACT Government – I would appreciate it if you could get in touch to discuss. There is a lot happening.

Regards,
Alex

Alexander Konovalov | Senior Manager, Land Release and Economics | Phone: 6205 2634 | alexander.konovalov@act.gov.au
Land Supply and Policy| Environment, Planning and Sustainable Development Directorate| **ACT Government**
Please consider the environment before printing this email. If printing is necessary, please print double-sided.

Gobbitt, David

From: Konovalov, Alexander <Alexander.Konovalov@act.gov.au>
Sent: Monday, 4 December 2017 2:06 PM
To: Gumley, Luke; Denby, Simon
Cc: Bennett, JamesP; Leece, Kristin; Dunstan, David; Rutledge, Geoffrey
Subject: Project Wing discussion - proposed discussion points for tomorrow [SEC=UNCLASSIFIED]
Attachments: Project Wing - points for discussion with CASA.DOCX

Good afternoon.

Please find attached a document with proposed discussion points for our meeting tomorrow morning – this is what we would like to cover. I'll look forward to hearing your thoughts on Project Wing and this new world of delivery drones.

See you tomorrow.

Regards,
Alex

Alexander Konovalov | Senior Manager, Land Release and Economics | Phone: 6205 2634 | alexander.konovalov@act.gov.au
Land Supply and Policy| Environment, Planning and Sustainable Development Directorate| **ACT Government**
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Project Wing discussion points

ACT Government, CASA

Context

Project Wing are currently undertaking a trial in Royalla, near the ACT-NSW border. They are operating out of the ACT – the Guises Creek Rural Fire Brigade.

Project Wing are now working towards an expanded trial. The current plans are for Project Wing to operate out of an ACT Government block of land to the south-west of the Tuggeranong town centre.

CASA is the drone regulator, while the ACT Government has an interest in the local community impacts of delivery drones.

Topics for discussion

Update – CASA discussions with Project Wing

- How have CASA discussions with Project Wing been progressing?
- What is the timeframe for any approval, and what is the mechanism for this?

Update – ACT Government discussions with Project Wing

- Arrangements for use of the Tuggeranong site.
- Licence for the land, with an additional agreement covering the delivery drone aspect.

For discussion – ACT Government, CASA – information sharing

- CASA – are you able to share information on the Project Wing application?
    - What sort of restrictions/parameters will your approval to Project Wing involve?
- Would CASA like anything from the ACT?

For noting – Community engagement

- Project Wing currently developing a community engagement strategy. ACT Government – intent to be slightly at arms length.

For discussion – what will CASA cover in their application process, and what do we need to cover in our agreement?

- Geographical limits – will CASA impose a limit on where the drones can operate (more than current restrictions)? What about, for example, sensitive locations like embassies?
- Privacy – to what extent does CASA intend to address privacy concerns? Project Wing's current proposal is for them to develop a transparent privacy policy.
- Complaints – if a member of the public is unhappy, who should they complain to?
- Incident reporting– what happens if a drone crashes and hurts someone / damages property? Does Project Wing have an obligation to inform anyone? Australian Transport Safety Bureau?
- Safety risks – to what extent is CASA prepared for risks around autonomous drones? What about cyber security?

For discussion – forward process

- Any next steps.

Gobbitt, David

From: Konovalov, Alexander <Alexander.Konovalov@act.gov.au>
Sent: Tuesday, 5 December 2017 12:12 PM
To: Gumley, Luke; Denby, Simon
Cc: Bennett, JamesP
Subject: Project Wing - friday meeting [SEC=UNCLASSIFIED]

Good to meet you this morning.

As discussed, our catch-up with Project Wing is Friday morning, 10:30 to 11:30. Please let me know if someone from CASA is able to attend as an observer.

Andrew Patton is in Canberra, and we'll also dial in some of his colleagues from California.

Dame Pattie Menzies House, level 3 south boardroom.
12 Challis Street, Dickson.

Alex

Alexander Konovalov | Senior Manager, Land Release and Economics | Phone: 6205 2634 | alexander.konovalov@act.gov.au
Land Supply and Policy| Environment, Planning and Sustainable Development Directorate| **ACT Government**

Gobbitt, David

From: Bennett, JamesP <JamesP.Bennett@act.gov.au>
Sent: Wednesday, 20 December 2017 1:46 PM
To: Denby, Simon; Gumley, Luke
Cc: Konovalov, Alexander
Subject: ACT Government Draft Risk Assessment - Project Wing drone trial [SEC=UNCLASSIFIED, DLM=For-Official-Use-Only]
Attachments: 20171220 - Project Wing - RISK ASSESSMENT.docx

Hi Simon and Luke

Please find attached the ACT Government's draft risk assessment on the Project Wing drone trial seeking approval for operations in Tuggeranong in early 2018. We have completed the risk assessment on the basis of which Govt agency has responsibility for regulatory oversight/approval, noting that the ultimate responsibility for a lot of these risks sits with the proponents themselves.

Could you please provide us with any feedback that you have on the document.

Some items we would like to discuss further with you once we have your feedback are:

- CASA providing a letter of assurance on the approval of this project to the ACT Government (addressing key areas of risk)
- CASA's ongoing monitoring and potential to feedback major incidents to ACT Govt.

Please give me call if you have any questions or need clarification.

Please note that Alex Konovalov is away until 10 January, so I will be your point of contact in ACT Government until that time.

Thanks
James

James Bennett I Law Reform
Phone: 6205 4877 I Email: JamesP.Bennett@act.gov.au
Environment, Planning and Sustainable Development Directorate I ACT Government
Dame Pattie Menzies House, 16 Challis Street Dickson I GPO Box 158 Canberra ACT 2601
www.environment.act.gov.au

Risk Management

The use of delivery drones in the ACT – Project Wing

Risk Management Plan: Title Page – Setting the Context

Directorate:	EPSDD	**Date risk assessment completed:**	20/12/2017
Agency / Division / Business Unit:	Land Supply and Policy	**Date risk assessment review to be completed:**	
Risk Assessment Undertaken by	1. Alexander Konovalov	2. James Bennett	3.
	4.	**5.**	6.

Internal Stakeholders

Executive Responsible:	Geoffrey Rutledge, A/g Deputy Director General, Sustainability and the Built Environment		
Risk Owners – Officers responsible for managing the risk	1. Alexander Konovalov	**Officers responsible for managing risk treatments**	1.
	2. James Bennett		2.
	3.		3.
	4.		4.
	5.		5.
	6.		6.

Details

Define the Activity *Provide a summarised definition of the activity, process, function, project, product or service in terms of time, location in addition to goals and objectives.*	Project Wing (a Google company) is seeking the use of a block of land in Tuggeranong (block 15, section 46 Greenway) to conduct a commercial drone delivery trial, starting with the suburb of Bonython. The drones would be based in the Tuggeranong site, and would then fly to a merchant location (starting with on-site food trucks and other merchants), pick up the goods, and then fly to deliver the package to the end user. The ACT Government is arranging the use of the site. CASA considering permitting the delivery drones as part of an approvals process.
Scope *Set the parameters of the Risk Management process which includes specifics of the activities to be carried out – what is to be included and what is not to be included or considered in this plan.*	This risk management process is intended to: • capture the main areas of risks and community impacts from this new business model; and • allocate responsibilities between the ACT Government and CASA. Delivery drones are a new business model, and the scale of Project Wing's proposal has not been done anywhere else in the world. As a result the risks are to some degree unknowable, and this risk assessment will not pretend to assess the likelihood and consequences of some of the more uncertain risks.

Risk Criteria

ACTIA
Australian Capital Territory Insurance Authority

ACT Government

	Consequence				
	Insignificant	Minor	Moderate	Major	Catastrophic
Assets	Loss or destruction of assets up to $2,000	Loss or destruction of assets $2,000 to $10,000	Loss or destruction of assets $10,000 to $100,000	Loss or destruction of assets $100,000 to $5M	Loss or destruction of assets greater than $5M
Compliance/ regulation	Non-compliance with work policy and standard operating procedures which are not legislated or regulated	Numerous instances of non-compliance with work policy and standard operating procedures which are not legislated or regulated	Non-compliance with work policy and standard operating procedures which require self reporting to the appropriate regulator and immediate rectification.	Restriction of business operations by regulator due to non-compliance with relevant guidelines and / or significant non-compliance with policy and procedures which threaten business delivery.	Operations shut down by regulator for failing to comply with relevant guidelines and /or significant non-compliance with internal procedures could result in failure to provide business outcomes and service delivery.
People	Injuries or ailments not requiring medical treatment.	Minor injury or First Aid Treatment Case.	Serious injury causing hospitalisation or multiple medical treatment cases.	Life threatening injury or multiple serious injuries causing hospitalisation.	Death or multiple life threatening injuries.
Environment	Limited effect to something of low significance	Transient, minor effects	Moderate, short-term environmental harm	Significant, medium-term environmental harm	Long term environmental harm
Financial	1% of Budget or <$5K	2.5% of Budget or <$50K	> 5% of Budget or <$500K	> 10% of Budget or <$5M	>25% of Budget or >$5M
Products and Services	No disruption to services	Minor disruption to services for up to 1 month	Total cessation of service for up to 1 days and subsequent disruption of 1 to 2 months	Total cessation of service for up to 7 days and subsequent disruption of 2 to 3 months	Total cessation of service for more than 1 week and disruption over subsequent months involving a major facility
Technology	Interruption to electronic records and data access less than ½ day.	Interruption to electronic records and data access ½ to 1day	Significant interruption (but not permanent loss) to data and electronic records access, lasting 1 day to 1 week	Complete, permanent loss of some electronic records and/or data, or loss of access for more than one week	Complete, permanent loss of all electronic records and data
Reputation & Image	Internal Review	Scrutiny required by internal committees or internal audit to prevent escalation.	Scrutiny required by external committees or ACT Auditor General's Office, or inquest, etc.	Intense public, political and media scrutiny. E.g.: front page headlines, TV, etc.	Assembly inquiry or Commission of inquiry or adverse national media.
Cultural & Heritage	Low-level repairable damage to commonplace structures	Mostly repairable damage	Permanent damage to items of cultural significance	Significant damage to structures or items of cultural significance	Irreparable damage to highly valued items of cultural significance
Business Process & Systems	Minor errors in systems or processes requiring corrective action, or minor delay without impact on overall schedule.	Policy procedural rule occasionally not met or services do not fully meet needs.	One or more key accountability requirements not met. Inconvenient but not client welfare threatening.	Strategies not consistent with Government's agenda. Trends show service is degraded.	Critical system failure, bad policy advice or ongoing non-compliance. Business severely affected.

Likelihood	Frequency		
Almost Certain	Is expected to occur in most circumstances	>1 in 10	
Likely	Will probably occur	1 in 10 - 100	
Possible	Might occur at some time in the future	1 in 100 – 1,000	
Unlikely	Could occur but doubtful	1 in 1,000 – 10,000	
Rare	May occur but only in exceptional circumstances	1 in 10,000 – 100,000	

Matrix	1	2	3	4	5
5	Medium	High	High	Extreme	Extreme
4	Medium	Medium	High	High	Extreme
3	Low	Medium	Medium	High	Extreme
2	Low	Medium	Medium	High	High *
1	Low	Low	Medium	Medium	High *

Priority for Attention / Action		
Priority	Suggested Timing of Treatment	Authority for continued tolerance of risk
Extreme	Shortterm – normally within one month * Detailed action plan required	Director-General
High	Medium term – normally within three months Needs senior management attention	Senior Executive
Medium	Normally within 1 year Specify management responsibility	Managers
Low	Ongoing control as part of a management system Manage by routine procedures	All staff

Risk Control Effectiveness	
Control Effectiveness	Guide
Adequate	Nothing more to be done except review and monitor the existing controls. Controls are well designed for the risk, are largely preventative and address the root causes and Management believes that they are effective and reliable at all times. Reactive controls only support preventative controls.
Room for Improvement	Most controls are designed correctly and are in place and effective however there are some controls that are either not correctly designed or are not very effective. There may be an over-reliance on reactive controls. Some more work to be done to improve operating effectiveness or Management has doubts about operational effectiveness and reliability.
Inadequate	Significant control gaps or no credible control. Either controls do not treat root causes or they do not operate at all effectively. Controls, if they exist are just reactive. Management has no confidence that any degree of control is being achieved due to poor control design and/or very limited operational effectiveness.

Sample Consequence Table

Categories of Risk	Consequence				
	Insignificant	**Minor**	**Moderate**	**Major**	**Catastrophic**
Assets	Loss or destruction of assets up to $2,000	Loss or destruction of assets $2,000 to $10,000	Loss or destruction of assets $10,000 to $100,000	Loss or destruction of assets $100,000 to $5M	Loss or destruction of assets greater than $5M
Compliance/ regulation	Non-compliance with work policy and standard operating procedures which are not legislated or regulated	Numerous instances of non-compliance with work policy and standard operating procedures which are not legislated or regulated	Non-compliance with work policy and standard operating procedures that require self reporting to the appropriate regulator and immediate rectification.	Restriction of business operations by regulator due to non-compliance with relevant guidelines and / or significant non-compliance with policy and procedures that threaten business delivery.	Operations shut down by regulator for failing to comply with relevant guidelines and /or significant non-compliance with internal procedures could result in failure to provide business outcomes and service delivery.
People	Injuries or ailments not requiring medical treatment.	Minor injury or First Aid Treatment Case.	Serious injury causing hospitalisation or multiple medical treatment cases.	Life threatening injury or multiple serious injuries causing hospitalisation.	Death or multiple life threatening injuries.
Environment	Limited effect to something of low significance	Transient, minor effects	Moderate, short-term environmental harm	Significant, medium-term environmental harm	Long term environmental harm
Financial	1% of Budget or <$5K	2.5% of Budget or <$50K	> 5% of Budget or <$500K	> 10% of Budget or <$5M	>25% of Budget or >$5M
Products and Services	No disruption to services	Minor disruption to services for up to 1 month	Total cessation of service for up to 1 days and subsequent disruption of 1 to 2 months	Total cessation of service for up to 7 days and subsequent disruption of 2 to 3 months	Total cessation of service for more than 1 week and disruption over subsequent months involving a major facility
Technology	Interruption to electronic records and data access less than ½ day.	Interruption to electronic records and data access ½ to 1 day	Significant interruption (but not permanent loss) to data and electronic records access, lasting 1 day to 1 week	Complete, permanent loss of some electronic records and/or data, or loss of access for more than one week	Complete, permanent loss of all electronic records and data
General management activities	no impact on business outcomes and strategic objectives.	Minor impact on business outcomes and strategic objectives. Non-essential or subsidiary services experience minor disruptions.	Moderate impact on business outcomes and strategic objectives. A number of objectives not met, minor or subsidiary services impaired.	Significant impact on business and strategic objectives. Key service delivery impaired.	Strategic business outcomes processes fail and business objectives not met. Unable to delivery necessary services.
Reputation & Image	Internal Review	Scrutiny required by internal committees or internal audit to prevent escalation.	Scrutiny required by external committees or ACT Auditor General's Office, or inquest, etc.	Intense public, political and media scrutiny. E.g.: front page headlines, TV, etc.	Assembly inquiry or Commission of inquiry or adverse national media.
Cultural & Heritage	Low-level repairable damage to commonplace structures	Mostly repairable damage	Permanent damage to items of cultural significance	Significant damage to structures or items of cultural significance	Irreparable damage to highly valued items of cultural significance
Business Process & Systems	Minor errors in systems or processes requiring corrective action, or minor delay without impact on overall schedule.	Policy procedural rule occasionally not met or services do not fully meet needs.	One or more key accountability requirements not met. Inconvenient but not client welfare threatening.	Strategies not consistent with Government's agenda. Trends show service is degraded.	Critical system failure, bad policy advice or ongoing non-compliance. Business severely affected.

Risk Register part 1 – risk identification (Read left to right with Risk Register Part 2)

Risk Reference	**The Risk:** **What can happen?** **A description of the risk**	**Source** **How can this happen?** **Drivers to the risk** **Contributor or source of the risk**	**Impact /Outcome** **What will be the outcome or effect, if what can happen does happen?** **Impact on the business objectives** **Impact from the event happening** **Consequence**	**Govt/regulatory body with oversight/approval/enforcement**
1	Noise.	Delivery drones emit a high pitched buzzing noise. Some people may find this irritating. Hours of operation	Reduction in peace and quiet, community complaints. Tortious action – nuisance against the Territory *Environment Protection Act 1997* (ACT) implications	CASA (approvals) – to the extent that CASA approves flight paths, geographical limits and the type of drones used (in relation to noise emissions). ACT Government – by limiting the hours of operations
2	Privacy concerns (a) surveillance and intrusion of privacy (b) inappropriate collection, use and disclosure of personal information.	The delivery drones are constantly taking downward photos. This may intrude on a person's reasonable expectation of privacy, e.g. backyards, schoolyards, private land. Project Wing advise that these photos are not stored. • Amazon is reported to have recently taken out a patent – their drones would collect information on the state of someone's property, which would then support targeted advertising.	Potential breach of right to privacy (in ACT Human Rights Act) Potential breach of ACT *Information Privacy Act* requirements Reduced privacy, with community privacy concerns and complaints. No recognized common law action in tort for breach of privacy – yet – however that does not mean that a particularly aggrieved applicant may not attempt to bring an action in tort – or for instance, that 'privacy' be an issue that arises alongside a trespass action.	CASA – collection and storage of information, ability to audit operations ACT Government Information Commissioner (provided that Google has adopted in to Cth Privacy Act jurisdiction)

3	Impact on domestic pets.	Delivery drones may startle domestic pets, who then may, for example, jump over a fence and get lost. May also cause distress to domestic pets.	Harm to domestic pets, and community complaints. Tortious action – nuisance EPA implications	ACT Government
4	Impact on wildlife.	Drones have the potential to cause stress to wild animals. There is limited evidence of the extent of this impact.	Harm to wildlife, with ecological damage.	ACT Government
5	Loss of amenity. - visual and noise pollution.	To some people, drones will be perceived as a disturbance to peace and quiet, affecting reasonable enjoyment. Areas such as nature reserves and national parks may present a reasonable expectation of peace and quiet Could be mitigated by regulating the flight path.	Loss of amenity and enjoyment, community complaints. Nuisance	ACT Government
6	Cyber security.	The drones are highly automated, and in the future may have limited direct supervision/control.	Drones used for a malevolent purpose. Uncertain/unknowable impact.	CASA Australian Government ACT Govt
7	Sensitive locations – geographical issue.	Drones may fly over a sensitive location such as an embassy, school or hospital. Regulate the flight path.	Uncertain impacts – potential for concern from some elements of the community.	CASA (geographical limitations) ACT Government (additional sensitive areas identified)
8	Distraction risk to drivers, cyclists, pedestrians.	Delivery drones may distract drivers, cyclists, pedestrians. We understand that there may have been discussions regarding a tortious action in negligence to the ACT Govt for having approved the use of the land for this commercial drone trial. Tenuous, perhaps, but that would not rule out a member of the public bringing such an action, or for instance, such findings or comments being made in a coronial inquest?	Reduced traffic safety.	CASA (geographical limitations) ACT Government

		This could be mitigated to some extent by establishing regulated flight paths.		
9	Safety – collision with people, infrastructure, other drones/planes.	The delivery drones may crash into something, for any number of reasons. This includes the potential for collision with people during the pick-up / drop-off point. CASA regulates the operational requirements (CASA Regs part 101)	Injury/damage to people/property.	CASA ACT Govt
10	Land use concerns. Delivery drones are not currently defined in the Territory Plan, thus not permitted except under a temporary use.	Property owners may not be happy to have a delivery drone site next door or nearby.	Criticism of the ACT Government around our planning controls, and why we are permitting delivery drones without first changing our planning legislation.	ACT Government
11	Trespass	Delivery drones may impact on a landholder's right to exclusive use of reasonable airspace above their own property.	Tort of trespass – legal liability	CASA ACT Government
12	ACT Government agency objections	Other Government Agencies may raise concerns about drone use near or above their sites (e.g. Alexander Maconochie Centre, schools, other institutions) Restricted flight paths.	Opposition from other ACT Government agencies Limited operational areas	ACT Government
13	Fire ignition	Delivery drone crash/malfunction causing fire (or bushfire)	Fire ignition	CASA ACT Govt
14	Negligence	Negligent operation of drones may cause injury, death, damage to persons	Tort of negligence – legal liability for allowing land use	ACT Government CASA
15	Reputational damage	If the project is not supported by the community, or there is an incident or accident, the ACT Government may be held responsible – or for instance face adverse public comment or	While legal liability may not rest with the ACT Government for a safety incident, reputational damage may	ACT Government

		adverse findings in the event of a coronial inquest etc. Not being aware of incidents occurring	be suffered as the ACT Government has allowed the project to take place	

Risk Register part 2 – risk assessment, risk evaluation and risk treatment (Continued from Risk Register Part1)

Risk Reference	Risk Controls which are currently in place *This field is for the risk controls that already exist and are currently managing the risk*	*Inherent* Risk Rating			Control Effectiveness Rating	Action to be taken *Can include further risk treatment strategies or a rationale behind no further action where rating is rated as "Room for Improvement" or" inadequate."* *Reference can be made to an attaching "cost / benefit analysis" or "risk treatment action plan" for relevant risks.*	Risk Treatment Owner	*Residual* Risk rating			Control Effectiveness rating	Monitoring and reviewing *Monitored by whom with the inclusion of details about frequency requirements of monitoring in addition to the final review to occur. Where appropriate can refer to a "risk treatment plan."*
		Consequence	Likelihood	Inherent Risk Rating				Consequence	Likelihood	Residual Risk Rating		
1	CASA regulation and approval The *Environment Protection Act 1997* and the *Environment Protection Regulation 2005* set noise standards, including for residential areas – although noise from aircraft may be exempt under the Act – compliance by the EPA.	Uncertain	Certain	Uncertain	Uncertain	Set out permitted operating hours for Project Wing.	ACT Govt	Uncertain	Certain	Uncertain	Uncertain	Seek feedback from the community about their views. Complaints process.

Risk Register part 2 – risk assessment, risk evaluation and risk treatment (Continued from Risk Register Part1)

Risk Reference	Risk Controls which are currently in place *This field is for the risk controls that already exist and are currently managing the risk*	*Inherent* Risk Rating			Control Effectiveness Rating	Action to be taken *Can include further risk treatment strategies or a rationale behind no further action where rating is rated as "Room for Improvement" or" inadequate."* *Reference can be made to an attaching "cost / benefit analysis" or "risk treatment action plan" for relevant risks.*	Risk Treatment Owner	*Residual* Risk rating			Control Effectiveness rating	Monitoring and reviewing *Monitored by whom with the inclusion of details about frequency requirements of monitoring in addition to the final review to occur. Where appropriate can refer to a "risk treatment plan."*
		Consequence	Likelihood	Inherent Risk Rating				Consequence	Likelihood	Residual Risk Rating		
2	Existing privacy legislation. (potentially PW not caught by either instrument – to be bound to the Cth Act by opt-in or contractually. The possibility of litigation and terminating the use agreement are the enforcements.	Major	Unlikely	High	Room impr.	CASA to scrutinise Project Wing's arrangements for data collection and use. ACT Government to require Project Wing to develop and make public a privacy policy which complies with either the Cth *Privacy Act* or the ACT's *Information Privacy Act*. Project Wing to be contractually bound to opt-in and comply with the *Privacy Act 1988* (Cth).	CASA	Major	Rare	Medium	Adequate	CASA – ongoing monitoring. ACT Govt – compliance with licence agreement
3	Nil.	Minor	Alm. cert.	High	Inadequate	ACT Government to require Project Wing to address this concern as part of the community engagement strategy.	ACT Govt	Minor	Likely	Medium	Adeaute	ACT Govt – monitor and seek feedback from the community.

Risk Register part 2 – risk assessment, risk evaluation and risk treatment (Continued from Risk Register Part1)

Risk Reference	Risk Controls which are currently in place *This field is for the risk controls that already exist and are currently managing the risk*	*Inherent* Risk Rating			Control Effectiveness Rating	Action to be taken *Can include further risk treatment strategies or a rationale behind no further action where rating is rated as "Room for Improvement" or" inadequate."* *Reference can be made to an attaching "cost / benefit analysis" or "risk treatment action plan" for relevant risks.*	Risk Treatment Owner	*Residual* Risk rating			Control Effectiveness rating	Monitoring and reviewing *Monitored by whom with the inclusion of details about frequency requirements of monitoring in addition to the final review to occur. Where appropriate can refer to a "risk treatment plan."*
		Consequence	Likelihood	Inherent Risk Rating				Consequence	Likelihood	Residual Risk Rating		
4	Nil. Parks and Conservation is currently considering greater restrictions for drones in Territory reserves.	Uncertain (minor?)	Uncertain	Uncertain	n/a	Nil. Project Wing's operations are going to be focused on residential areas. Consultation with Parks and Conservation Service and local environmental groups. Consultation with Canberra Ornithologists Group – possible bird study	n/a	Uncertain (minor?)	Uncertain	Uncertain	n/a	ACT Govt – monitor and seek feedback from the community. What is the complaints handling process?
5	Threat of litigation is a risk control. Restricted flight paths and hours of operation.	Uncertain	Certain	Uncertain	n/a	ACT Government to establish permitted operating hours and consider geographical limitations. Licence agreement.	ACT Govt	Uncertain	Certain	Uncertain	Uncertain	ACT Govt – monitor and seek feedback from the community. ACT Government to be involved in the complaints management process.

Risk Register part 2 – risk assessment, risk evaluation and risk treatment (Continued from Risk Register Part1)

Risk Reference	Risk Controls which are currently in place *This field is for the risk controls that already exist and are currently managing the risk*	*Inherent* Risk Rating			Control Effectiveness Rating	Action to be taken *Can include further risk treatment strategies or a rationale behind no further action where rating is rated as "Room for Improvement" or" inadequate."* *Reference can be made to an attaching "cost / benefit analysis" or "risk treatment action plan" for relevant risks.*	Risk Treatment Owner	*Residual* Risk rating			Control Effectiveness rating	Monitoring and reviewing *Monitored by whom with the inclusion of details about frequency requirements of monitoring in addition to the final review to occur. Where appropriate can refer to a "risk treatment plan."*
		Consequence	Likelihood	Inherent Risk Rating				Consequence	Likelihood	Residual Risk Rating		
6	Uncertain – this is primarily a risk that Project Wing needs to manage.	Uncertain	Uncertain	Uncertain	n/a	CASA to continue to monitor cyber-security safety standards, and ensure that they receive any cyber-security incident feedback from Project Wing.	CASA	Uncertain	Uncertain	Uncertain	Uncertain	CASA to monitor.
7	Existing CASA rules for off limit areas for drones (largely focusing on airports and helicopter landing pads).	Uncertain (moderate?)	Almost certain	Uncertain	n/a	Geographical limits in CASA approval. ACT Government to provide feedback to CASA on any sensitive locations that Project Wing need to avoid. Ongoing discussions between ACT Govt and CASA on adequacy of current arrangements.	ACT Govt, CASA	Uncertain (moderate?)	Rare	Uncertain	Uncertain	ACT Govt and CASA to monitor.
8	Driver licensing and education, aimed at promoting safe driving.	Moderate	Uncertain	Uncertain	Uncertain	ACT Government to require this element to be addressed in any community engagement strategy. In the longer term, ACT Govt to consider modifying driver licensing education programs.	ACT Govt	Moderate	Uncertain	Uncertain	Uncertain	ACT Government.

Risk Register part 2 – risk assessment, risk evaluation and risk treatment (Continued from Risk Register Part1)

Risk Reference	Risk Controls which are currently in place *This field is for the risk controls that already exist and are currently managing the risk*	*Inherent* Risk Rating			Control Effectiveness Rating	Action to be taken *Can include further risk treatment strategies or a rationale behind no further action where rating is rated as "Room for Improvement" or" inadequate."* *Reference can be made to an attaching "cost / benefit analysis" or "risk treatment action plan" for relevant risks.*	Risk Treatment Owner	*Residual* Risk rating			Control Effectiveness rating	Monitoring and reviewing *Monitored by whom with the inclusion of details about frequency requirements of monitoring in addition to the final review to occur. Where appropriate can refer to a "risk treatment plan."*
		Consequence	Likelihood	Inherent Risk Rating				Consequence	Likelihood	Residual Risk Rating		
9	CASA has an approval regime to consider and control for drone safety risks.	Major	Uncertain (rare?)	Uncertain	Adequate	CASA to take a staged and incremental approach to approvals. CASA to provide the ACT Government with assurance around safety (not guaranteeing there is no risk, but providing advice around their approach to managing risk).	CASA	Major	Uncertain (rare?)	Uncertain	Uncertain	CASA to monitor compliance with approvals.
10	Planning legislation and the Territory Plan. Project Wing required to consult with neighbours as part of their Development Application.	Moderate	Likely	High	Room for improvement	ACT Government to require a community engagement strategy, to include consultation with neighbours.	ACT Govt	Moderate	Possible	Medium	Adequate	ACT Govt – monitor and seek feedback from the community. Complaints handling / management process or policy.

Risk Register part 2 – risk assessment, risk evaluation and risk treatment (Continued from Risk Register Part1)

Risk Reference	Risk Controls which are currently in place *This field is for the risk controls that already exist and are currently managing the risk*	*Inherent* Risk Rating			Control Effectiveness Rating	Action to be taken *Can include further risk treatment strategies or a rationale behind no further action where rating is rated as "Room for Improvement" or" inadequate."* *Reference can be made to an attaching "cost / benefit analysis" or "risk treatment action plan" for relevant risks.*	Risk Treatment Owner	*Residual* Risk rating			Control Effectiveness rating	Monitoring and reviewing *Monitored by whom with the inclusion of details about frequency requirements of monitoring in addition to the final review to occur. Where appropriate can refer to a "risk treatment plan."*
		Consequence	Likelihood	Inherent Risk Rating				Consequence	Likelihood	Residual Risk Rating		
11	Tort of trespass	Moderate	unlikely	medium	Room for improvement	Project Wing to give assurances that relevant laws are complied with (ie: PW to comply with laws – issue is 'trespass' with respect to low flying aircraft (such as drones) is an evolution or extension of the existing laws of trespass: what is the relevant airspace with respect to 'reasonable use of the land' in the age of the drone? Restricted flight plaths – less / least populous areas. CASA to issue approval	ACT Govt	Moderate	unlikely	Medium	Adequate	CASA ACT Govt – monitor and seek feedback from the community.
12	Inter-agency consultation (through Land Request Advisory Committee)	Moderate	Possible	Medium	Adequate	Consult with key ACT Government agencies – limit geographical area of operations.	ACT Govt	Low	Unlikely	Low	Adequate	ACT Govt – monitor and consult with key agencies

Risk Register part 2 – risk assessment, risk evaluation and risk treatment (Continued from Risk Register Part1)

Risk Reference	Risk Controls which are currently in place *This field is for the risk controls that already exist and are currently managing the risk*	*Inherent* Risk Rating			Control Effectiveness Rating	Action to be taken *Can include further risk treatment strategies or a rationale behind no further action where rating is rated as "Room for Improvement" or" inadequate."* *Reference can be made to an attaching "cost / benefit analysis" or "risk treatment action plan" for relevant risks.*	Risk Treatment Owner	*Residual* Risk rating			Control Effectiveness rating	Monitoring and reviewing *Monitored by whom with the inclusion of details about frequency requirements of monitoring in addition to the final review to occur. Where appropriate can refer to a "risk treatment plan."*
		Consequence	Likelihood	Inherent Risk Rating				Consequence	Likelihood	Residual Risk Rating		
13	CASA assessment of safety risks and approval	Major/catastrophic	Unlikely	High	Adequate	Ensure compliance with CASA approval Implement Emergency Management Plan Restrict flight paths from infrastructure (power lines etc) and more flammable areas. Observe seasonal fire danger notification etc.	Project Wing/CASA	Major/catastrophic	Unlikely	High	Adequate	CASA
14	Tort of negligence	Major	Rare	Medium	Adequate	CASA assessment and approval Thorough consultation. Risk mitigation measures. Project Wing assurances of compliant operations	CASA/ ACT Govt	Major	Rare	Medium	Adequate	CASA ACT Govt – monitor and seek feedback from the community.

Risk Register part 2 – risk assessment, risk evaluation and risk treatment (Continued from Risk Register Part1)

Risk Reference	Risk Controls which are currently in place *This field is for the risk controls that already exist and are currently managing the risk*	*Inherent* Risk Rating			Control Effectiveness Rating	Action to be taken *Can include further risk treatment strategies or a rationale behind no further action where rating is rated as "Room for Improvement" or" inadequate."* *Reference can be made to an attaching "cost / benefit analysis" or "risk treatment action plan" for relevant risks.*	Risk Treatment Owner	*Residual* Risk rating			Control Effectiveness rating	Monitoring and reviewing *Monitored by whom with the inclusion of details about frequency requirements of monitoring in addition to the final review to occur. Where appropriate can refer to a "risk treatment plan."*
		Consequence	Likelihood	Inherent Risk Rating				Consequence	Likelihood	Residual Risk Rating		
15	Reputational damage	Major	Unlikely	Medium	Adequate	Clear messaging on delineation of responsibilities and ownership of project - Complaints management and appropriate notice to public of the project and its purposes. Role of ACT Government in approving the project and CASA as the regulatory body with authority to provide approval Community engagement strategy for both Project Wing and ACT Government	ACT Govt	Major	Unlikely	Medium	Adequate	ACT Govt – monitor and seek feedback from the community.

Gobbitt, David

From: Konovalov, Alexander <Alexander.Konovalov@act.gov.au>
Sent: Thursday, 11 January 2018 3:51 PM
To: Gumley, Luke; Bennett, JamesP; Denby, Simon
Subject: RE: ACT Government Draft Risk Assessment - Project Wing drone trial [DLM=For-Official-Use-Only]

Hi Luke, I'm back from holiday.

9:30 to 10:30 on Wednesday the 17th looks good.

I'll send an invite through.

Alex

From: Gumley, Luke [mailto:Luke.Gumley@casa.gov.au]
Sent: Thursday, 11 January 2018 3:33 PM
To: Bennett, JamesP ; Denby, Simon
Cc: Konovalov, Alexander
Subject: RE: ACT Government Draft Risk Assessment - Project Wing drone trial [DLM=For-Official-Use-Only]

For Official Use Only

Hi James

I could do anytime between 0900 – 1100 Wednesday 17 Jan, or 0900 – 1230 Thursday 18 Jan, or 0900 – 1600 Friday 19 Jan.

Please feel free to send through a meeting request.

Best regards

Luke Gumley
Branch Manager Remotely Piloted Aircraft Systems (RPAS)
RPAS Branch
National Operations & Standards
CASA\Aviation Group

p: +61 2 6217 **1772 m:** +61 413 300 166
Aviation House, 16 Furzer Street, Phillip ACT 2606
GPO Box 2005, Canberra ACT 2601

www.casa.gov.au

Can I fly there? *Drone safety app*
droneflyer.com.au *Rules, videos and short quiz for recreational drone operations*
casa.gov.au/drones *Information for all RPAS operators*

From: Bennett, JamesP [mailto:JamesP.Bennett@act.gov.au]
Sent: Wednesday, 10 January 2018 9:45 AM
To: Gumley, Luke; Denby, Simon
Cc: Konovalov, Alexander
Subject: RE: ACT Government Draft Risk Assessment - Project Wing drone trial [DLM=For-Official-Use-Only]

Hi Luke

Following up on our emails before the break, when is a convenient time for you to catch up in the next week or so?

Thanks
James

From: Bennett, JamesP
Sent: Friday, 22 December 2017 9:48 AM
To: 'Gumley, Luke' <Luke.Gumley@casa.gov.au>; Denby, Simon <SIMON.DENBY@casa.gov.au>
Cc: Konovalov, Alexander <Alexander.Konovalov@act.gov.au>
Subject: RE: ACT Government Draft Risk Assessment - Project Wing drone trial [DLM=For-Official-Use-Only]

Hi Luke

Thanks for getting back to me.

Alex and I are free on the afternoon of Thursday 11 January or anytime on Friday 12 January if there is a time there that suits?

We will come over to your office.

Thanks
James

From: Gumley, Luke [mailto:Luke.Gumley@casa.gov.au]
Sent: Friday, 22 December 2017 9:44 AM
To: Bennett, JamesP <JamesP.Bennett@act.gov.au>; Denby, Simon <SIMON.DENBY@casa.gov.au>
Cc: Konovalov, Alexander <Alexander.Konovalov@act.gov.au>
Subject: RE: ACT Government Draft Risk Assessment - Project Wing drone trial [DLM=For-Official-Use-Only]

For Official Use Only

Hi James

Thank you for your email and draft risk assessment. We would like to meet in the early new year to discuss the content, including CASA's responsibilities (there's a few risks that have been assigned to CASA that we would like to clarify).

What dates work for you from 8 Jan onwards?

Regards

Luke Gumley
Remotely Piloted Aircraft Systems (RPAS) Manager
RPAS Branch

CASA\Aviation Group

p: +61 2 6217 **1772 m:** +61 413 300 166
Aviation House, 16 Furzer Street, Phillip ACT 2606
GPO Box 2005, Canberra ACT 2601

www.casa.gov.au

Can I fly there? *Drone safety app*
droneflyer.com.au *Rules, videos and short quiz for recreational drone operations*
casa.gov.au/drones *Information for all RPAS operators*

From: Bennett, JamesP [mailto:JamesP.Bennett@act.gov.au]
Sent: Wednesday, 20 December 2017 1:46 PM
To: Denby, Simon; Gumley, Luke
Cc: Konovalov, Alexander
Subject: ACT Government Draft Risk Assessment - Project Wing drone trial [SEC=UNCLASSIFIED, DLM=For-Official-Use-Only]

Hi Simon and Luke

Please find attached the ACT Government's draft risk assessment on the Project Wing drone trial seeking approval for operations in Tuggeranong in early 2018. We have completed the risk assessment on the basis of which Govt agency has responsibility for regulatory oversight/approval, noting that the ultimate responsibility for a lot of these risks sits with the proponents themselves.

Could you please provide us with any feedback that you have on the document.

Some items we would like to discuss further with you once we have your feedback are:

- CASA providing a letter of assurance on the approval of this project to the ACT Government (addressing key areas of risk)
- CASA's ongoing monitoring and potential to feedback major incidents to ACT Govt.

Please give me call if you have any questions or need clarification.

Please note that Alex Konovalov is away until 10 January, so I will be your point of contact in ACT Government until that time.

Thanks
James

James Bennett I Law Reform
Phone: 6205 4877 I Email: JamesP.Bennett@act.gov.au
Environment, Planning and Sustainable Development Directorate I ACT Government
Dame Pattie Menzies House, 16 Challis Street Dickson I GPO Box 158 Canberra ACT 2601
www.environment.act.gov.au

Gobbitt, David

From: Konovalov, Alexander <Alexander.Konovalov@act.gov.au>
Sent: Friday, 19 January 2018 10:45 AM
To: Gumley, Luke
Cc: Bennett, JamesP; Deasey, Michael; Teo, Hong
Subject: Project Wing - ACT Govt risk assessment [SEC=UNCLASSIFIED]
Attachments: 20180117 - Project Wing - RISK ASSESSMENT - after review with CASA.docx

Good morning.

See attached for an updated version of our risk assessment following our meeting yesterday. Kept in track change mode.

I would appreciate any feedback.

Project Wing have indicated that they are happy to give their approval for you to provide us with their certification and notification in the case of any breach. James – how was this going to be implemented?

It would be good if we could touch base before too long regarding the CASA assurances to the ACT.

Regards,
Alex

Alexander Konovalov | Senior Manager, Land Release and Economics | Phone: 6205 2634 | alexander.konovalov@act.gov.au
Land Supply and Policy| Environment, Planning and Sustainable Development Directorate| **ACT Government**
Please consider the environment before printing this email. If printing is necessary, please print double-sided.

Gobbitt, David

From: Bennett, JamesP <JamesP.Bennett@act.gov.au>
Sent: Friday, 19 January 2018 1:38 PM
To: Konovalov, Alexander; Gumley, Luke
Cc: Deasey, Michael; Teo, Hong
Subject: RE: Project Wing - ACT Govt risk assessment [SEC=UNCLASSIFIED]

We are looking to include the authorisation to CASA to release information as a term of our operational agreement which they will agree to and sign.

We can then provide to CASA as evidence.

From: Konovalov, Alexander
Sent: Friday, 19 January 2018 10:45 AM
To: 'luke.gumley@casa.gov.au'
Cc: Bennett, JamesP ; Deasey, Michael ; Teo, Hong
Subject: Project Wing - ACT Govt risk assessment [SEC=UNCLASSIFIED]

Good morning.

See attached for an updated version of our risk assessment following our meeting yesterday. Kept in track change mode.

I would appreciate any feedback.

Project Wing have indicated that they are happy to give their approval for you to provide us with their certification and notification in the case of any breach. James – how was this going to be implemented?

It would be good if we could touch base before too long regarding the CASA assurances to the ACT.

Regards,
Alex

Alexander Konovalov | Senior Manager, Land Release and Economics | Phone: 6205 2634 | alexander.konovalov@act.gov.au
Land Supply and Policy| Environment, Planning and Sustainable Development Directorate| **ACT Government**
Please consider the environment before printing this email. If printing is necessary, please print double-sided.

Gobbitt, David

From: Konovalov, Alexander <Alexander.Konovalov@act.gov.au>
Sent: Thursday, 15 February 2018 4:27 PM
To: Gumley, Luke
Cc: Deasey, Michael
Subject: RE: Project Wing - ACT Govt risk assessment [SEC=UNCLASSIFIED]

Thank you for your comprehensive response.

Why don't I lead off with an example that shows what we were trying to achieve.

Let's say that Project Wing has an ongoing safety problem. Let's assume that this is a reasonably serious issue, not just a minor record keeping infraction. You may start your non-compliance activity with Project Wing (warnings, requests etc), however, this could take a fair period of time before it reaches the point where you make an adverse decision and remove their approval. We would like to know that this problem exists before their approval was removed, given that the ACT is providing Project Wing with the land and we share some of the risk posed by their operations (regardless of any contractual indemnifications).

We had structured the release to be reasonably broad based on the view that it was just a Project Wing release and it did not impose any obligations on CASA – and that you would naturally use judgement around what was appropriate to provide to us (not just minor record keeping infractions).

However, if you have decided that you are unable to provide us with notification in advance of an adverse decision – it is what it is.

I found your email below slightly unclear on one point – in your words you are able to advise us in the case of a safety event that results in CASA making an adverse decision on the permissions and approvals held by the operator, right?

So just to confirm, following this release CASA would be able to provide us with:

- key information that you provide us on Project Wing's certification (presumably including key elements such as their restricted flight areas);
- updated information if/when you extend their permission (to example broaden the area they can operate in); and
- notice of an adverse decision that restrict/revokes their approval.

Emergency management plan – yes, we can secure that directly from them.

Regards,
Alex

From: Gumley, Luke [mailto:Luke.Gumley@casa.gov.au]
Sent: Thursday, 15 February 2018 3:52 PM
To: Konovalov, Alexander
Cc: Deasey, Michael
Subject: RE: Project Wing - ACT Govt risk assessment [SEC=UNCLASSIFIED]

UNCLASSIFIED

Hi Alex

The revised document would be sufficient for CASA to release copies of approvals, licences and permissions that have been issued. It is noted that you are also requesting copies of all associated or relevant emergency management or response plans approved or endorsed by CASA. Please note that CASA does not specifically endorse or approve such plans – as such, under the terms of the release, we would not be able to provide them. Would this be something you could ask the entity to provide directly, including any updated versions?

Further to our correspondence below, it is noted that there appears to be an expectation for CASA to inform the ACT Government of any variations or amendments, even though the release document is between ACT Government and the entity. I note from your response below that ACT Government is seeking notification on a broad range of events/occurrences. I understand from your email below the reasons for asking for certain information – that ACT Government must remain satisfied that the operation is safe. The difficulty in the broad range of notifiable instances is that some, such as breaches, are routine and not representative of an adverse safety risk. This might be a terminology issue. For example, CASA often conducts surveillance/audit activity on an operator, for which we generate findings. Some of these findings are low risk, but for which we issue a non-compliance notice. An example of a regular occurrence with an operator is that they have not completed record keeping in accordance with a manual – this constitutes a technical breach, but may be relatively benign from a safety perspective. Where there is a finding or series of findings that do represent a risk or potential risk, CASA has an escalation process where we may commence an enforcement process. Procedural fairness requires that CASA provide an opportunity for the operator to respond, and if reasonable corrective action takes place, no adverse decision is taken. If corrective actions are not implemented or are unsuitable, CASA may make an adverse decision and vary or cancel the permissions and/or approvals of the operator. Where significant risk is found, CASA has the capability to immediately suspend the operator under the serious and imminent provisions of the Civil Aviation Act 1988.

Perhaps ACT Government might consider placing an enduring requirement on the operator/entity to provide you with the sorts of information required under the release document.

CASA would be able to provide you with any varied permissions and approvals. We would not be in a position to provide information about a breach that may be detected from time to time, or the commencement of an investigation. You could request these under Freedom of Information, however, given the complexity of this information, CASA may elect to charge a fee for the collation of such material if determined they were able to be released. I am hopeful that ACT Government is not seeking that depth of information, but rather, is looking to be informed if there is safety event that results in CASA making an adverse decision on the permissions and approvals held by the operator.

Please don't hesitate to telephone me should you wish to discuss further.

Regards,

Luke Gumley
Branch Manager Remotely Piloted Aircraft Systems (RPAS)
RPAS Branch
National Operations & Standards
CASA\Aviation Group

p: +61 2 6217 **1772 m:** +61 413 300 166
Aviation House, 16 Furzer Street, Phillip ACT 2606
GPO Box 2005, Canberra ACT 2601

www.casa.gov.au

Can I fly there? *Drone safety app*

From: Konovalov, Alexander [mailto:Alexander.Konovalov@act.gov.au]
Sent: Friday, 9 February 2018 5:24 PM
To: Gumley, Luke <Luke.Gumley@casa.gov.au>
Cc: Deasey, Michael <Michael.Deasey@act.gov.au>
Subject: RE: Project Wing - ACT Govt risk assessment [SEC=UNCLASSIFIED]

Thank you for the response.

Your clarification is correct, apologies that we lost this distinction in the letter we sent to you. Our intent is to confirm that CASA has appropriately certified Project Wing and that this certification addresses the risks that we identified in our risk management exercise. We were not after the technical information / content of the approvals. We would however like the emergency management plan for our own reference.

Yes, our expectation was that CASA would notify us in the case of any breaches. I would not have thought this would represent a significant additional burden (particularly given this is a world first trial) but will await your advice. We would very much prefer to avoid a scenario where we Project Wing behaves irresponsibly, is required to remedy various breaches, while from our perspective everything is fine. Or the remote scenario where you remove their approvals but they continue to operate on our site, without us knowing that they were doing so illegally.

Hopefully a relatively small edit to the letter will be acceptable – a change to 'information on any approvals...', as per the attached.

I also note that you have a potential concern regarding the enduring aspect. I would suggest that this represents Project Wing's consent to you providing us with information, it doesn't represent any sort of contract between the ACT Government and CASA.

Regards,
Alex

From: Gumley, Luke [mailto:Luke.Gumley@casa.gov.au]
Sent: Friday, 9 February 2018 4:52 PM
To: Konovalov, Alexander <Alexander.Konovalov@act.gov.au>
Cc: Deasey, Michael <Michael.Deasey@act.gov.au>
Subject: RE: Project Wing - ACT Govt risk assessment [SEC=UNCLASSIFIED]

UNCLASSIFIED

Hi Alex

Thank you for your email.

In reference to your email below, I wish to clarify certain points.

I understood from our meetings, ACT Government's desire to be satisfied that CASA will appropriately certify Unmanned Systems to operate the contemplate services in the Tuggeranong area, and that I indicated CASA could provide a letter outlining the certification process and copies of relevant instruments authorising such operations – on the understanding that the operator would need to sign a release. Your first dot below indicates a desire to review CASA's certification. Could you please confirm whether you are seeking a letter as I have outlined, or whether you are seeking copies of all documentation relevant to CASA's assessment process. The latter introduces a

significant body of work for CASA to collate information, and does not appear to be limited to those operations relevant to the Tuggeranong operation.

The attached document appears to place an enduring requirement on CASA to notify ACT Government of any changes to existing permissions and to notify of any breaches, non-compliances, and investigations. This may be problematic for CASA as we would need to instigate a specialised process to ensure that communications were sent to you at the same time as they were sent to the operator. Could you please confirm the expectations of CASA in this regard.

I have forwarded the attached document to our legal team to review. I imagine they will have some questions around the notification aspect I have raised above, as well as the potential enduring nature of the document.

I can confirm that the authorisation would need to come from Unmanned Systems.

Regards

Luke Gumley
Branch Manager Remotely Piloted Aircraft Systems (RPAS)
RPAS Branch
National Operations & Standards
CASA\Aviation Group

p: +61 2 6217 **1772 m:** +61 413 300 166
Aviation House, 16 Furzer Street, Phillip ACT 2606
GPO Box 2005, Canberra ACT 2601

www.casa.gov.au

Can I fly there? *Drone safety app*
droneflyer.com.au *Rules, videos and short quiz for recreational drone operations*
casa.gov.au/drones *Information for all RPAS operators*

From: Konovalov, Alexander [mailto:Alexander.Konovalov@act.gov.au]
Sent: Friday, 9 February 2018 2:43 PM
To: Gumley, Luke
Cc: Deasey, Michael
Subject: RE: Project Wing - ACT Govt risk assessment [SEC=UNCLASSIFIED]

Good afternoon.

You may recall our discussion from a few weeks ago regarding Project Wing's proposed drone trial in Tuggeranong – see below for further context.

We had previously highlighted:

- our desire to be able to review CASA's certification of Project Wing; and
- for CASA to be able to tell the ACT Government about any breach that may occur.

We have now agreed with Project Wing a letter to yourselves providing you with this authorisation. I would appreciate it if you could review and confirm that it meets your requirements. Could you also advise whether you would need this to come from Unmanned Systems?

Regards,
Alex

From: Bennett, JamesP
Sent: Friday, 19 January 2018 1:38 PM
To: Konovalov, Alexander <Alexander.Konovalov@act.gov.au>; 'luke.gumley@casa.gov.au' <luke.gumley@casa.gov.au>
Cc: Deasey, Michael <Michael.Deasey@act.gov.au>; Teo, Hong <Hong.Teo@act.gov.au>
Subject: RE: Project Wing - ACT Govt risk assessment [SEC=UNCLASSIFIED]

We are looking to include the authorisation to CASA to release information as a term of our operational agreement which they will agree to and sign.

We can then provide to CASA as evidence.

From: Konovalov, Alexander
Sent: Friday, 19 January 2018 10:45 AM
To: 'luke.gumley@casa.gov.au' <luke.gumley@casa.gov.au>
Cc: Bennett, JamesP <JamesP.Bennett@act.gov.au>; Deasey, Michael <Michael.Deasey@act.gov.au>; Teo, Hong <Hong.Teo@act.gov.au>
Subject: Project Wing - ACT Govt risk assessment [SEC=UNCLASSIFIED]

Good morning.

See attached for an updated version of our risk assessment following our meeting yesterday. Kept in track change mode.

I would appreciate any feedback.

Project Wing have indicated that they are happy to give their approval for you to provide us with their certification and notification in the case of any breach. James – how was this going to be implemented?

It would be good if we could touch base before too long regarding the CASA assurances to the ACT.

Regards,
Alex

Alexander Konovalov | Senior Manager, Land Release and Economics | Phone: 6205 2634 | alexander.konovalov@act.gov.au
Land Supply and Policy| Environment, Planning and Sustainable Development Directorate| **ACT Government**
Please consider the environment before printing this email. If printing is necessary, please print double-sided.

Gobbitt, David

From: Trevithick, Angela <Angela.Trevithick@act.gov.au>
Sent: Thursday, 1 March 2018 12:37 PM
To: Gumley, Luke
Cc: Offer, James
Subject: RE: Drone safety discussion [SEC=UNCLASSIFIED]

Hi Luke,

A phone call on Friday would be good. We're having internal ACT Gov discussions around who will take the lead on this area, so understanding what is happening federally will help guide that. I will also update you on my understanding of what is happening in the autonomous vehicle and connected autonomous vehicle world if you're interested, as I suspect the approach we are currently taking with AV regulation and policy will likely be the approach taken when it comes to getting national agreement on enabling borderless drone use across Australia.

I'll call you Friday at 3pm. Enjoy Brisbane in the meantime!

Kind regards,

Angela

Angela Trevithick | Transport Coordination Manager
Transport Planning & Active Travel | Transport Canberra and City Services Directorate | **ACT Government**
P 62072339 | 496 Northbourne Ave | GPO Box 158 Canberra ACT 2601
www.act.gov.au | www.tccs.act.gov.au | @tccs_act

From: Gumley, Luke [mailto:Luke.Gumley@casa.gov.au]
Sent: Wednesday, 28 February 2018 7:19 PM
To: Trevithick, Angela
Cc: Offer, James
Subject: RE: Drone safety discussion [SEC=UNCLASSIFIED]

UNCLASSIFIED

Hi Amanda

James Offer passed on your email to me.

I would welcome the opportunity to have a discussion on drone safety. I am currently in Brisbane but back in Canberra Thursday night. Would this Friday work for you? I could do 3pm if that works – either via telephone, videoconference or in person at Aviation House.

Best regards

Luke

Luke Gumley
Branch Manager Remotely Piloted Aircraft Systems (RPAS)
RPAS Branch
National Operations & Standards
CASA\Aviation Group

p: +61 2 6217 **1772 m:** +61 413 300 166

Aviation House, 16 Furzer Street, Phillip ACT 2606
GPO Box 2005, Canberra ACT 2601

www.casa.gov.au

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casa.gov.au/drones *Information for all RPAS operators*

From: Trevithick, Angela [mailto:Angela.Trevithick@act.gov.au]
Sent: Monday, 26 February 2018 10:29 AM
To: Offer, James <James.Offer@casa.gov.au>
Subject: Drone safety discussion [SEC=UNCLASSIFIED]

Hi James,

Thanks for offering to pass my details on to Luke. I'm keen to have a general chat around what is happening at a national level in terms of approval of drone use in urban environments and what we as ACT government might need to consider in terms of getting Canberra to act as the testbed for this technology, and also update Luke on what is happening around safety and autonomous vehicles. Although there are obviously differences in terms of operating environment, the similarities between drones and autonomous vehicles are worth noting especially as I expect that any decisions we make around AV safety assurance systems will be pointed to as a precedent for drones (for example, if a decision is made to have the safety of an AV self-certified by the industry, this may be held up as an expectation by the industry for drones so it would be helpful to know if CASA foresee any issues with this).

If Luke thinks it would be valuable to have a chat, even if just for half an hour, I'm happy to either have a conversation over the phone or have a meeting here/there.

Kind regards,

Angela

Angela Trevithick | Transport Coordination Manager
Transport Planning & Active Travel | Transport Canberra and City Services Directorate | **ACT Government**
P 62072339 | 496 Northbourne Ave | GPO Box 158 Canberra ACT 2601
www.act.gov.au | www.tccs.act.gov.au | @tccs_act

Gobbitt, David

From: Palmer, Amanda
Sent: Friday, 23 March 2018 4:42 PM
To: Jen.Faerber@act.gov.au
Cc: Barac, Dragica; Gumley, Luke
Subject: FW: FYI - ACT Gov response to queries about Project Wing [SEC=UNCLASSIFIED]

UNCLASSIFIED

Hi Jen

Thanks for the conversation a short time ago. As discussed, I've included some dot points below for your use as you see fit.

- The Civil Aviation Safety Authority is responsible for regulating and overseeing the safe operations of drones—also referred to as remotely piloted aircraft or model aircraft.
- As the aviation safety regulator, CASA's role is restricted to aviation safety regulation—privacy is not in its remit. CASA cannot enforce privacy related matters.
- If you are concerned about drones and your privacy, you can contact the Office of the Australian Information Commissioner for more information or phone 1300 363 992. However, the *Privacy Act 1988* does not regulate individual operators of drones, or small business operators.
- Some state and territory anti-stalking laws may apply to the operation of surveillance drones in some circumstances.
- To report a breach of the civil aviation safety regulators, such as unsafe drone operations, you can phone CASA on either 131 757 or go to www.casa.gov.au/dronecomplaint

My details are below if you need anything further.

Regards,
Amanda

Amanda Palmer
Stakeholder Communications Manager
Engagement, Communication and Safety Education Branch
CASA\Stakeholder Engagement Division
p: 02 6217 **1680 m:** 0439 922 830
GPO Box 2005, Canberra ACT 2601
www.casa.gov.au

From: Faerber, Jen <Jen.Faerber@act.gov.au>
Sent: Friday, 23 February 2018 10:40 AM
To: Gumley, Luke <Luke.Gumley@casa.gov.au>
Subject: FYI - ACT Gov response to queries about Project Wing [SEC=UNCLASSIFIED]

Hi Luke,

I just left you a phone message about Project Wing. I'm working with Alex Konovalov on this from the ACT Gov side.

We've prepared a set of information and talking points for both Ministers and our call-centre staff at Access Canberra, to address any enquiries from the community about drone activity.

I wanted to let you know that we have made mention of CASA, in the following sections below:

Limits to the ACT Government's involvement

- The safe operation of drones is regulated by the Commonwealth Aviation Safety Authority (CASA). CASA has provided Project Wing with approval for the trial.
- The objectives of the drone delivery trial in Tuggeranong have been set by Project Wing, and enquiries about engaging with the trial, the frequency of activity or any other details should be referred to Project Wing in the first instance.

How to contact Project Wing:

- More information about Project Wing's operation in Tuggeranong, including their privacy policy, is available on their website: http://www.x.company/wing/australia/
- Enquiries from Canberra residents should be directed to: wing-au@x.team
- Enquiries from media should be directed to: xpr@x.team

How to contact CASA

- Enquiries or complaints about the operation of drones should be directed to: 131 757.

Please let me know if you have any feedback – I'm happy to make amendments if you have any recommendations!

Cheers,
Jen

Jen Faerber | **Senior Communications Officer, Strategic Communications and Media**
Phone: 02 6207 8646
Communications & Engagement | Chief Minister, Treasury and Economic Development Directorate | **ACT Government**
Level 5, Canberra Nara Centre, 1 Constitution Avenue, Canberra City | GPO Box 158 Canberra City ACT 2601 | www.act.gov.au

Gobbitt, David

From: Ward, Andrew
Sent: Wednesday, 13 June 2018 4:40 PM
To: Geoffrey.Rutledge@act.gov.au; Adam.Stankevicius@act.gov.au; david.dunstan@act.gov.au
Cc: Aleck, Jonathan; Gumley, Luke
Subject: FW: Future Regulation of drones in the ACT [SEC=UNCLASSIFIED]

UNCLASSIFIED

Gents,

Thankyou for our meeting this morning.

Some of the more legal questions that you have relating to jurisdictional issues might better be put to Dr Jonathan Aleck CASA's Executive Manager Legal and Regulatory Affairs Division

Dr Aleck may be contacted direct on 2.2(a)(ii) or via email.

I have emailed Dr Aleck a precis of or conversations this morning.

Regards

Andrew

Andrew Ward
Manager – Remotely Piloted Aircraft Systems Policy and Regulation
Remotely Piloted Aircraft Systems (RPAS) Branch
CASA\Aviation Group
p: +61 2 6217 **1748 m:** +61 409 829 895
16 Furzer Street, Phillip ACT 2600
GPO Box 2005, Canberra ACT 2601 Australia

www.casa.gov.au

From:"Konovalov, Alexander" <Alexander.Konovalov@act.gov.au>
Sent:02/11/2018 2:50 PM
To:"Potter, Chantel" <Chantel.Potter@act.gov.au>
Subject:project wing [SEC=UNCLASSIFIED]
Attachments:2C - Attachment A - CISC National Principles for responding to and enabl....docx, Internal discussion paper - delivery drones.docx, Draft Code of Practice v2.docx

CW innovation principles – useful as guidance.

And the internal discussion paper I wrote a year ago. I think it still holds up reasonably well. (but if you want to use it /repurpose it would appreciate some credit)

And a draft code of practice that represented how I thought you could prepare an interim voluntary code of practice – halfway point to regulation. However Google is not thrilled at the idea of sub-national regulation – they strongly prefer national approaches, understandably.

Alex

Alexander Konovalov | Senior Manager, Land Release and Economics | Phone: 6205 2634 | alexander.konovalov@act.gov.au
Land Supply and Policy | Environment, Planning and Sustainable Development Directorate | ACT Government

National Regulatory Framework for responding to and enabling innovation

Introduction

The COAG Industry and Skills Council (CISC) is committed to proactive reform that supports, promotes and fosters a favourable innovation environment in Australia. As part of this work, CISC is committed to:

- Reducing business costs, while managing social, economic and environmental risks.
- A regulatory landscape that supports business innovation.
- Greater levels of business confidence and investment in innovative activities.

While regulatory practices in Australia are robust and well regarded globally, CISC recognises the importance of regulatory frameworks that effectively foster business innovation and leverage opportunities to improve Australia's global competitiveness.

CISC has developed this framework with overarching principles to help guide Australian governments, in particular regulators, respond to new technologies and business models that challenge existing systems of regulation. The framework is informed by the regulatory approaches by state governments and the Commonwealth to adapt to recent innovations. As such, the framework outlines the considerations of all Australian governments when adapting regulatory systems to new innovations.

Additional sub-principles, which are complimentary but target the regulation of specific economic sectors, will be attached to this framework where COAG decides it is appropriate. These principles should also be read in conjunction with the existing Principles of Best Practice Regulation agreed by COAG[1].

Defining innovation is helpful in identifying when these principles are most applicable and can provide the greatest benefits to policy makers. At its most basic innovation is *doing something differently or creating something new*, however the OECD provides the following more comprehensive definition in the Oslo Manual:

"the implementation of a new or significantly improved product (good or service) or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations".

[1] The COAG Best Practice Regulation Guide is available at: http://www.coag.gov.au/sites/default/files/coag_documents/COAG_best_practice_guide_2007.pdf

Goals

The CISC regulatory principles for responding to and enabling innovation aim to ensure that:

- Government action is targeted at achieving clear and relevant outcomes.
- Regulatory frameworks encourage innovation and are sufficiently flexible to adapt to innovation.
- Regulatory responses are coordinated across agencies and jurisdictions.
- Jurisdictions have a consistent approach to assessing the impact and consequences of innovation on: new entrants, existing businesses or industries, and consumers.

Achieving these objectives will result in:

- Reduced business costs and risk.
- A regulatory landscape that is more consistent across jurisdictions and supports business innovation.
- Increased levels of business confidence and investment in innovative activities.
- Greater business innovation.

Management of the Framework

The National Regulation Framework for responding to and enabling innovation was endorsed by the CISC Regulation and Innovation Working Group in February 2017 and the CISC in April 2017.

The Framework will be updated and published as new targeted principles are developed for individual sectors and agreed by CISC or another COAG body. The first set of sub-principles relating to the collaborative economy in the tourism sector are at Attachment A.

Principles

1. **Innovative – Examine a broad range of potential responses and new tools to achieve desired regulatory outcomes.**

   In achieving a desired outcome (e.g. public safety, health or environmental preservation), new approaches and/or technology should be considered (e.g. self-regulation or other technological solutions) to understand how these could help achieve outcomes in the most efficient and effective way. Technology may reduce the need to regulate, for example, by helping to reduce market failure, such as the cost and ability of regulators to access information on regulated parties, or by making existing regulation more efficient and effective.

2. **Adaptive and flexible – Regulatory approaches adapt to changing business models and technologies.**

   Regulatory approaches should be sufficiently flexible to accommodate evolving and emerging businesses models, markets and technologies by targeting desired outcomes and not a particular technology. The response should not rely on current industry characteristics (structure, size, location) or technology to be effective, and should be easily adaptable. The regulatory framework should be as simple and uniform as possible, such that new services, products or technologies are not regulated differently to existing ones, unless necessary.

3. **Pro-competitive – Consider both new and existing businesses.**

   When responding to innovation, regulations should be reviewed to ensure both established and new businesses can benefit from opportunities presented by new technologies or business models. Any review should focus on the net benefits to society as a whole (including not only incumbent and new businesses, but also consumers and individuals). Governments should also consider whether there are any market failures or substantial equity concerns arising from existing businesses having to adapt to new regulatory arrangements, and whether this warrants government action to facilitate their adjustment.

4. **Evidence-based – Robust data used to develop, monitor and evaluate regulations.**

   To further enable an outcome-focused regulatory approach that fosters innovation, improvements to data collection should be considered, on both the observed and potential effects of new technologies and business models. Better information to evaluate the effectiveness of government responses is particularly important where more flexible, less prescriptive regulatory approaches are taken. Governments should obtain evidence to assess risks, including by drawing on relevant expertise (e.g. Australian and international scientific agencies, and other subject matter experts). Responsibility for collecting data should be assigned to the parties that can do so most efficiently, whether that be a government or industry organisation. Monitoring and evaluation should be considered when designing and developing regulatory responses to help improve the quality and efficiency of the analysis.

Case study 1 – ACT ridesharing reform

The ACT was the first jurisdiction in Australia to legalise and regulate ridesharing services and Canberra was the first capital city in the world to regulate ridesharing before the service had begun. Leading up to the reform, Uber had signalled its intention to enter the ACT market. In response, the Government determined it would take a systematic and evidence-based approach to reform.

January 2015	September 2015	October 2015	August 2016	Late 2017
Government announced an Innovation Review into ridesharing and the taxi industry.	Government announced two phase reforms, along with a two year monitoring and review period.	Phase 1 – the Government legalised ridesharing via an interim regulatory approach.	Phase 2 – the new regulatory framework commenced.	Look-back evaluation of the reforms

Applying the principles:

1. **Innovative**

   The ridesharing business model addresses inherent risks differently from the traditional taxi industry. For example, the additional information available to drivers and passengers through the booking service reduces the risk involved with anonymous transactions, such as rank and hail work by taxis. The reputation rating system provides an incentive for drivers and customers to behave respectfully, and the integration of booking system and payments also takes care of payment risks (cash handling and non-payment). The ACT took into account the approach to risk from different business models as part of designing a new regulatory framework that would be adaptable to new technologies.

   The technologies of rideshare were also considered for their ability to provide additional on-demand travel choices to consumers, in terms of booking, evaluating drivers and payment processing, for example.

2. **Adaptive and flexible**

   As with the emergence of business models such as ridesharing and car sharing (e.g. GoGet), we can expect innovation to continue. For example, we may eventually see fleets of automated vehicles providing on-demand transport

   The ACT has designed the new regulatory framework to respond to defined behaviours around safety, consumer protection and payment, rather than regulate individual business models. This promotes a fair treatment of different business models, and makes the new framework more flexible and "future proof". However, it is also important to consider existing business models, and not just look to the future.

3. **Pro-competitive**

   The ACT reviewed existing regulations for traditional taxi and hire car operators when designing the new regulatory framework. As a result, the ACT chose to reduce barriers to entry and burdensome regulation – for example, lowering taxi license fees and removing requirements related to driver and vehicle presentation. These changes should allow existing industry participants to be better able to compete with emerging services.

4. **Evidence-based**

   The ACT committed to formally monitoring the outcomes of the new regulatory framework for the two years from October 2015. The ACT is collecting qualitative and quantitative data on industry changes, including consumer outcomes and impacts on various stakeholders. The ACT will use this data to analyse changes in supply and demand and in the quality of services delivered to consumers. This evaluation will be used to see if the industry is changing in line with modelled forecasts and determine is further actions are required.

5. **Appropriately resourced – Regulators have the appropriate skills and capabilities.**

   Regulators should have the capacity to assess risks posed by new technologies, business models and markets, and have the capability to be agile in responding appropriately and quickly to these risks. This may include being able to advise government on emerging risks and recommend action. Regulators should have the necessary structures, skills, culture, and resources to rapidly change their regulatory approach or posture, if necessary, while considering their own mandates and functions.

6. **Coordinated – Facilitate and promote collaboration and coordination to share best practice regulatory approaches to innovation**

   Coordination by agencies at all levels of government will ensure streamlined implementation and enforcement processes, particularly when regulating businesses or technologies operating across jurisdictions. Opportunities to share best practice regulatory approaches and jointly respond to emerging technologies and business models could help better identify the risks involved, and how to design the most effective and efficient policy response. Governments should also work with local and international industry, innovators and customers to obtain information on emerging technologies and business models, and their potential future impact.

7. **Responsive – Interim measures, trials, sandboxes and pilots used while longer term responses are developed.**

   In cases where new businesses or technologies do not pose an immediate regulatory risk, the adoption of interim measures ensures new businesses or technologies are not unnecessarily impeded while the existing regulatory approach is reviewed. Interim measures could also allow governments to obtain information that enable them to better

develop a long term regulatory response. Such measures could include allowing pilot or demonstration projects to be completed, or providing a regulatory exemption for a fixed period of time. The criteria and process for providing these interim measures should be transparent and clearly communicated to the public. Scenario or 'plausible future' analysis could be undertaken, and different regulatory enforcement hierarchies ready if needed. Consider the use of 'trajectories' to help provide a degree of certainty and direction.

8. **Forward-looking – Continual monitoring and scanning of the horizon.**

   Innovation spawns new ideas, products and systems which can quickly and fundamentally change the community's existing landscape. The speed of change narrows the window for preparing and adjusting to enable those innovations. Identifying potentially disruptive innovations as early as practicable will give Government more time to prepare for the effects of innovation. Continual scanning and monitoring for current and future innovations, combined with an ability to understand and respond to the significance of potential changes, is essential to the success of regulators addressing and enabling innovation.

Case study 2 – SA trials of automotive technologies

The automotive manufacturing sector has been central to South Australia's identity for over 60 years. As South Australia's economy responds to global changes, transitioning from a traditional manufacturing base towards higher value-added activities is vital for supporting future jobs and continued prosperity. Driverless vehicles and associated technologies provided an outstanding opportunity for South Australia to 'get in on the ground floor' of an emerging industry building on an existing base.

This new era in automotive technology has enormous potential to improve safety, reduce greenhouse gas emissions, improve freight productivity and transform personal mobility across the globe. It is predicted that the international driverless car industry will be worth $90 billion within the coming 15 years, and South Australia is now well positioned to be involved with this global innovation.

The South Australian Government recognised the significant opportunity in unlocking and attracting industry investment in driverless and connected vehicle technology to the State, and in early 2015, the Government announced the introduction of legislation to allow on-road trials of driverless cars and automotive technologies.

Applying the principles:

6. **Coordinated**

   A highly collaborative approach was taken in developing and introducing necessary legislation. The South Australian Government undertook extensive early engagement with a range of key industry stakeholders at the forefront of the

development of automotive technologies, including automotive manufacturers, automotive suppliers, telecommunications and connected technologies companies, and innovators such as Google, Uber and Tesla. During the development of the legislation, there was a strong recognition of the industry leadership required to drive the development of innovative technologies, and Government's role in enabling and encouraging this. Sharing draft legislation with industry in the early stages provided key feedback to further refine the proposed legislative framework.

Collaboration with world's best practice international partners also supported the development of legislation, including the US Department of Transportation, the California Department of Motor Vehicles and the United Kingdom's Transport Research Laboratory.

7. **Responsive**

The legislation was developed using a blank sheet approach, enabling the consideration of a wide range of technologies, business models and regulatory approaches beyond the tightly regulated current environment (principle 1). The resulting legislation is exemption-based, where entities simply submit plans for their proposed trials, and ensure they have sufficient insurances in place to protect the public, to apply for authorisation to conduct trials.

It is not limited to a particular technology, and permits exemptions from existing legislation for trials of any automotive technology that relates to advances in the design or construction of motor vehicles. The exemptions required may vary significantly depending on the technology being trialled; however this approach provides the flexibility to allow an almost limitless range of trials to take place, subject to the relevant conditions to ensure safety.

Enabling on-road trials provides entities with the opportunity to test and develop their technologies in 'real world' conditions, without requiring regulatory amendments, or while appropriate amendments are being developed.

Benefits of this Approach:

By responding proactively, South Australia was able to gain a first mover advantage and signal its openness to innovative business. Industry responded positively to this approach with South Australia's legislation being praised by Google as a benchmark for other countries to follow, due to its design and support of innovative technologies.

In addition, the approach adopted by South Australia has created opportunities for existing businesses. A number of local vehicle component businesses are now expected to expand despite the closure of automotive manufacturing in the State, including Cohda Wireless, who currently produce over 60% of the world's connected vehicle communications technology.

SUMMARY OF PRINCIPLES

COAG Industry & Skills Council (CISC)

Goal

Create a regulatory environment that attracts and enables innovation while balancing social, economic and environmental interests

Actions

- remove regulatory barriers to innovation
- design regulation that is flexible and adaptive to change
- promote consistency across jurisdictions

Outcomes

- reduced business costs and risk
- greater levels of business confidence and investment in innovative activities
- increased business innovation
- increased competitiveness

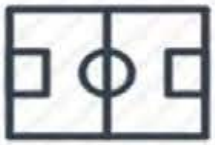
Principles for pro-innovation regulation

1. Innovative

Regulatory responses should be innovative themselves, and make use of new technologies where relevant. For example, self-regulation may be a regulatory option enabled by new technology.

2. Adaptable & flexible

Regulation should be technology neutral, and adaptable and flexible to future technological changes.



3. Pro-competition

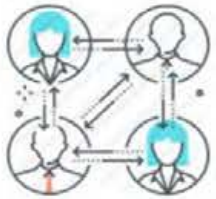
Regulation should encourage competition and maximise net benefits to society by levelling the playing field for market participants without favouring either new-entrants or incumbents.

4. Evidence-based

Robust data should be used to develop, monitor and evaluate the effectiveness and efficiency of reforms and assess the impact of disruption.

5. Well-resourced

Regulators should have the appropriate skills, capability and access to expert advice when developing and enforcing innovative regulation.



6. Coordinated

Regulation should be coordinated and regulators should collaborate to gather and share data, learning from and adapting the experiences of other jurisdictions.

7. Responsive

To remain agile, regulators should explore interim measures, such as experimental trials, pilots, demonstration projects and regulatory sandboxes, while longer term responses are developed.

8. Forward looking

Regulation should proactively consider horizon disruptions.

Attachment 1 – Principles for how jurisdictions engage with the collaborative economy

Tourism Ministers should encourage jurisdictions to apply a consistent whole-of-government approach (where possible) to engaging with the collaborative economy. This approach should aim to maximise the collaborative economy's contribution to the tourism industry to further *Tourism 2020* objectives and provide clarity and confidence to consumers, new and existing operators and governments (including local government). The following principles will guide this approach:

1. **Promote a consistent definition of the collaborative economy.**

   Economic model that uses online and mobile distribution platforms to facilitate peer-to-peer sharing or exchange of otherwise under-utilised assets or services. This may be for monetary or non-monetary benefit. Popular services which relate to the visitor economy include:

   - renting out a room or whole house or unit for a short-time basis
   - providing point-to-point transport for a fare using a personal vehicle or renting out a personal vehicle for a short-time basis
   - peer provision of experiences and services such as destination tours, walks and hikes.

2. **Focus on the long term interests of consumers and promote user choice, innovation, diversity, adaptability and entrepreneurship.**

   Regulation should be proportionate and not introduced for the purpose of restricting competition.

3. **Ensure consumers and workers are protected from unsafe, unfair or misleading practices, and that regulations are fit-for-purpose for existing providers and new entrants.**

   Consider how to enforce compliance with regulations to ensure operators meet their tax, workplace relations and consumer protection obligations.

4. **Continue to drive red tape reform for existing and new providers to remove any unnecessary regulatory burden and encourage growth, innovation and investment.**

   Regulation should be reviewed regularly to ensure it is still required, fit-for-purpose and not inhibiting the ability of businesses to operate competitively. Consideration should be given to non-regulatory methods to achieve behavioural change.

5. **Encourage providers to disclose information and data to help guide policy decisions.**

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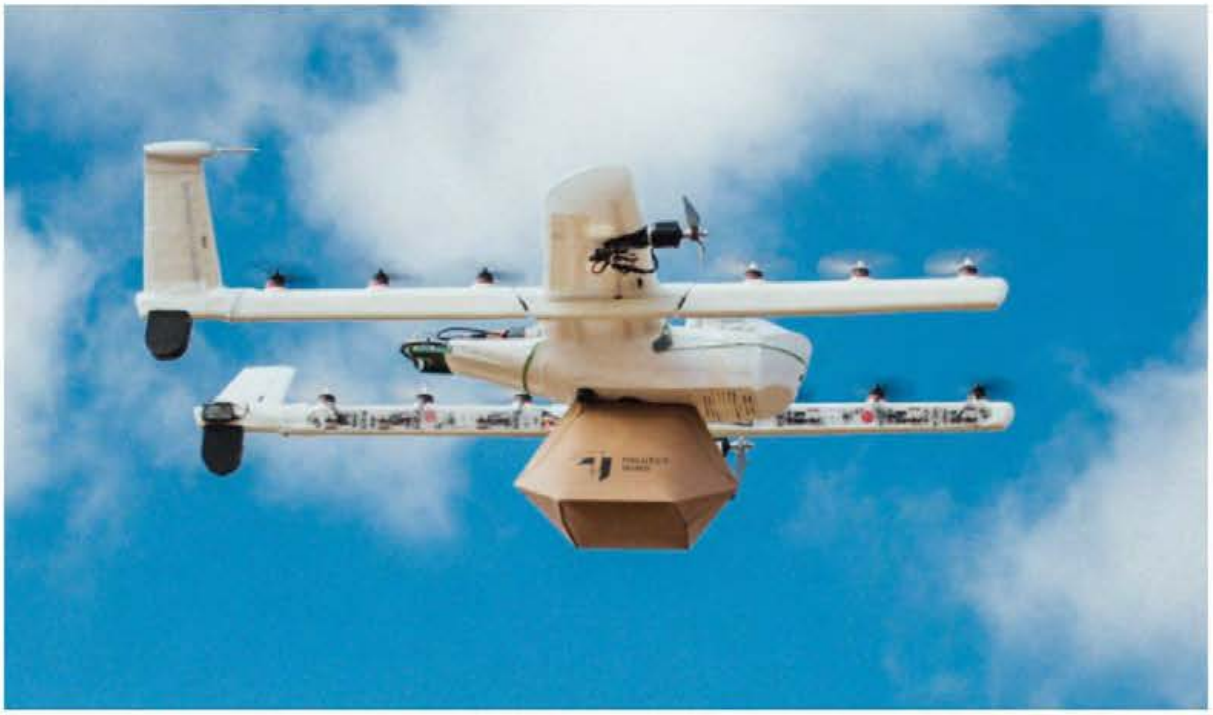
Responsible agency:		Austrade	
Agency contact:		Rachel.Roberts@austrade.gov.au, Assistant Manager Tourism Investment, Policy and Major Project Facilitation Tourism Division. Ph: 02 6272 6936	

The Future of Delivery Drones in the ACT

Internal Discussion Paper



Environment, Planning and Sustainable Development Directorate

Land Supply and Policy

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Contents

Contact information

Alexander Konovalov

Land Supply and Policy, Environment, Planning and Sustainable Development Directorate

alexander.konovalov@act.gov.au, 02 6205 2634

1. Executive Summary

On 27 September 2017, Project Wing announced that they would begin testing their drone delivery system with the residents of Royalla. Project Wing will be operating out of an ACT Government site – the Guises Creek Rural Fire Station.

The use of automated drones to pick up and deliver goods is an emerging business model that is largely unregulated. As a result of Project Wing's entrance, the ACT Government is now facing the opportunity to start thinking about how best to accommodate delivery drones in our city.

Project Wing's business model (although it may change over time) is to locate a drone delivery operation in a commercial area, and to use their drones as a delivery service to the surrounding areas. This has the potential for a range of benefits, including reduced traffic and environmental benefits.

Potential harms include: air safety; community impacts such as noise, privacy concerns and wildlife wellbeing; and zoning uncertainty. Of these harms, air safety is regulated by CASA, while zoning may be shelved and revisited in the future when we have a better understanding of the issues. This leaves us with questions around whether and how to regulate for the community impacts from an expanded Project Wing trial.

Best practice for regulating new business models is to use interim measures while a longer term response is developed. Automated vehicles provides us with a useful precedent in this regard.

Similar to the approach taken for automated vehicles, we suggest a sound way forward will be for the ACT Government to co-design a Code of Practice with Project Wing. This Code would provide a framework for Project Wing to operate within. We suggest that this would be preferable to either no regulation or introducing regulations at this stage.

A Code of Practice could also serve a strong purpose in terms of public consultation – we would be able to facilitate the expanded trial while also reassuring the community that we have oversight over this new business model.

"The ACT Government is pleased to welcome Project Wing to the ACT, and the innovation that it brings. Canberra is a dynamic, lively city that is open to new kinds of innovation. Project Wing's introduction to the ACT will allow us to understand community attitudes to this new technology, and will let us consider the best way to accommodate drone delivery in our city for the future."

- Minister for Planning and Land Management Mick Gentleman, 27 September 2017

2. Strategic context

The Civil Aviation Safety Authority (CASA) advises that, over the past 15 years, the market for drones has experienced enormous growth. This growth has been driven by advancements in technology that has provided easier access to increasingly sophisticated devices at relatively low cost.

As of August 2017, CASA estimated that there were more than 50,000 drones being operated in Australia, mostly for sport and recreational purposes. The use of drones for commercial purposes is a growing segment of the market, with aerial photography being the most common general use.

The use of drones for delivery is now emerging as a serious business model. Amazon, Google, DHL and UPS are all trialling drone delivery. Amazon are reported to be aiming to roll out drone delivery in the United Kingdom in 2018.

Jurisdictions are now starting to seriously consider the matter. For example, the City of London is undertaking a future transport inquiry to look into the potential for automated vehicles and drones to revolutionise transport.[1] The inquiry will consider how access to airspace for drones will be managed and what regulation is needed to ensure drones and droids are used safely.

With Project Wing's introduction, we are now being prompted to consider our own position on delivery drones. So far, we have been accommodating, and in response Project Wing has indicated an intention to invest in Canberra. As of early October 2017, they were advertising for a City Manager to expand their presence in the ACT, and have also reached out to the ACT Government for suitable land for expanding their operations. They are also potentially interested in establishing a testing facility in a remote area of the ACT.

Apart from the direct economic benefits from Project Wing's investment in Canberra, Project Wing's expansion in Canberra aligns with the ACT's business development strategy and has the potential to strengthen the ACT's reputation as an agile and innovative jurisdiction. There are also potential synergies with the aerospace technology cluster that we are seeking to develop.

However, we are also facing a need to strike a balance between promoting innovation and protecting the community's interests. We need to bring the community along with us – it would not be good for anyone if Project Wing were to start flying in Canberra, faced a backlash from elements of the community and we were then forced to over-react.

3. Project Wing's business model

Project Wing's intended business model (following their Royalla trial) is to locate a drone delivery operation in a commercial area, servicing local businesses and the surrounding areas as a delivery service.

1. A consumer would use an app to, for example, order takeaway Chinese from a restaurant in the local shops.
2. The app would alert the local shop and the drone site.

[1] https://www.london.gov.uk/current-investigations/future-transport#acc-i-48770

3. The Project Wing drone would then fly to the local restaurant and pick up the packaged takeaway from a designated location.
4. The drone would then fly to the consumer and lower the package to a designated spot.
5. The drone would return home.

Project Wing will be seeking to undertake this expanded trial in the lower density suburbs of Canberra. They are currently considering Tuggeranong.

Project Wing business model (source: Project Wing)

3.1 Benefits

Apart from the strategic benefits of promoting Project Wing's investment in Canberra, we suggest that delivery drones may offer the following benefits to the community.

- Consumer choice and convenience – delivery drones may provide a valued service to consumers and allow them access to a greater range of goods. Rural areas in particular may benefit from more convenient access to goods.
- Business productivity – businesses will have access to a greater catchment area which could promote competition. Delivery drones may also improve the efficiency of the logistics chain and hence reduce input costs.
- Reduced vehicle usage – delivery drones could potentially reduce the number of vehicles on the road. Consumers may not need to drive to a shop, and businesses may not need to use a vehicle to deliver a package. This could reduce congestion and hence emissions and help reduce impacts on the road network (and hence investment requirements).
- Innovation dividend – it is possible that drones could be used in new and unexpected ways. For example, Project Wing has suggested that a potential long term use could be the delivery of emergency medical supplies. Facilitating drones could help unlock these future innovations.

4. Potential harms

4.1 Air safety

The most immediately obvious potential harm from delivery drones is air safety. Delivery drones may fail and crash and could potentially threaten airplanes and helicopters.

The Civil Aviation Safety Authority regulates air safety for drones under the *Civil Aviation Safety Regulations 1998*.[2] Under this framework, drones are regulated as a remotely piloted aircraft and are subject to a range of restrictions. These restrictions are focused towards preventing drones from being operated over populous areas, close to airports or close to a fire or emergency operation.

One particular requirement is that drones must be operated within visual line of sight. This is intended to ensure that the operator of the drone is able to see any other planes or drones in the airspace and hence avoid any collisions.

Project Wing have advised that they are working with the Authority to demonstrate the safety of their drones and their proposed use, and that they have a reasonable expectation that they will receive the Authority's approval for beyond line of sight operation over a suburb.

Industry standards for collision avoidance

Project Wing have suggested that the growth of delivery drones also leads to a need for a solution to manage the increasing volume of drone traffic in the sky. Project Wing have developed an unmanned traffic system that allows their drones to avoid collisions with each other. They are advocating for this platform to become an industry standard.

4.2 Land use and zoning

Drones are not defined in the Territory Plan. Our zoning rules do not permit the type of operation that Project Wing are considering, but it also doesn't prohibit it.

As a general point – if we believe that Project Wing's business model has the potential to offer more benefits than harms to the community, we need to be prepared to allow drone operations in a commercial zoned area. For Project Wing to efficiently run their business they need to be co-located with small retail shops.

We suggest that this will be one of the most contentious issues around delivery drones. Will general commercial businesses be comfortable with having a delivery drone operation located next door? Will households be comfortable with having their drones delivering to their neighbour, and potentially startling their household pet?

However, we do not need to resolve this issue for the moment. Allowing Project Wing to conduct an expended trial will also leave us much better placed to understand the community's attitude towards delivery drones, and to come up with rules in the future that permit their use within suitable constraints.

[2] Part 101.f, at: https://www.legislation.gov.au/Details/F2017C00742/Html/Volume_3#_Toc493165511

Three dimensional zoning

Over the past few years there has been speculation that the increasing use of delivery drones will eventually lead to a requirement for three dimensional zoning to manage the resulting aerial traffic.[3] Fans of science fiction movies would recognise the concept of 'highways' in the sky. While these are interesting concepts, they are for the longer term.

In a more immediately practical sense, Governments may wish to carve out exclusion zones around particular buildings such as hospitals – that may permit drones to fly above them, but not too close.

4.3 General community impacts

We are not aware of any cases where delivery drones have been used in the scale that Project Wing are proposing for Canberra. It is even possible that Project Wing's current Royalla trial may represent the most advanced trial in the world. As a result, we cannot know how the community will respond to the expanded use of delivery drones and to what extent their wellbeing will be harmed by impacts such as noise.

Solely as an anecdote – while the Royalla trial is just starting, we can advise that the community has responded positively so far. At a community day on 8 October 2017, the most common concern from Royalla households was the potential impact on household pets, ie 'I'm not sure how my dog will react to one of these drones'.

We have identified the following main areas of potential community impacts.

- Noise – the delivery drones emit a high pitched buzzing noise, particularly when hovering in place. It is possible that some individuals will have a more negative reaction to the noise than others.
- Privacy – when flying, Project Wing's drones are constantly taking downward photos to help orient them. While Project Wing have advised that none of these photos are stored, this technology nevertheless raises significant privacy concerns.
    - It is worth noting that Amazon recently triggered significant privacy concerns.[4] In July 2017, Amazon secured a patent titled 'Trigger Agents in Video Streams From Drones' that described a system where a delivery drone could scan your home and property while delivering a package and then send that information back to Amazon. Amazon would then use this to help target their advertising.
- Impact on animals – scientists have suggested that drones have a negative impact on wildlife, although there is limited current research.[5] It is also possible that drones will have a negative impact on, for example, birds and household pets within the suburbs. However, it is also likely that many animals will become used to drones.
- Visual pollution – similar to how some people dislike wind farms, delivery drones may present 'visual pollution' that reduces the peace and tranquillity of the environment.

[3] http://www.archdaily.com/583398/the-three-dimensional-city-how-drones-will-impact-the-future-urban-landscape

[4] https://www.forbes.com/sites/retailwire/2017/08/28/amazons-drones-may-collect-valuable-data-on-their-fly-overs/#2024da8b6cbe

[5] https://theconversation.com/drones-and-wildlife-working-to-co-exist-83488

- Cyber security – the use of automated drones raises the fear that these drones may be hacked and either have their information stolen (with privacy concerns) or hijacked.[6]

Will animals really be this relaxed about drones? (Source: Project Wing)

5. Best practice for regulating new business models

The Council of Australian Governments (COAG) is committed to a regulatory landscape that supports, promotes and fosters a favourable innovation environment in Australia. Best practice principles (COAG Industry Council, currently unpublished) include:

- Adaptive and flexible – regulatory approaches should be adapt to changing business models and technologies.
- Pro-competitive – when responding to innovation, governments should ensure that government action is warranted and focus on the net benefits to society as a whole.
- Coordinated – Governments should work with local and international industry, innovators and customers to understand emerging technologies and their potential impacts.

In cases where new businesses or technologies do not pose an immediate regulatory risk, it is also best practice to use interim measures, trials, sandboxes and pilots while longer term responses are

[6] For fans of the Black Mirror tv series: https://futurism.com/japan-has-created-black-mirror-inspired-bee-drones/

developed. This allows government to obtain information that helps them develop a better response.

5.1 Automated vehicles

Automated vehicles are an interesting comparison to delivery drones. In the case of automated vehicles, regulators are facing a scenario where the emerging technology of vehicle automation has the potential to deliver significant benefits, but the regulatory framework does not allow their use.

- It is also worth noting that some business have started trialling delivery droids to deliver packages (currently food) – a technology that sits in-between delivery drones and automated vehicles.

Image sourced from the Guardian online newspaper

In response, jurisdictions have introduced a range of interim measures that allow industry and research bodies to conduct trials and pilots in a real world scenario, while the Commonwealth Government takes a measured and long term approach towards introducing legislation (expected to be in place by 2020).

In May 2017, the National Transport Commission and Austroads introduced *Guidelines for Trials of Automated Vehicles in Australia.*[7] These guidelines provide a framework for trials and experiments to take place.

[7] https://www.ntc.gov.au/current-projects/automated-vehicle-trial-guidelines/

6. Way forward

6.1 Code of Practice

Pending a longer term framework, an interim approach could be for the ACT Government to co-design a Code of Practice with Project Wing for them to operate within the ACT.

This Code of Practice could cover matters such as permitted hours of operation and response to safety incidents. The Code of Practice could outline the main identified risks such as cybersecurity and describe Project Wing's approach towards mitigating the risks.

Alternative options include: no action to regulate or otherwise control Project Wing; and banning delivery drones but with provision for exemptions.

We do not recommend taking no action. We consider that the community will hold the ACT Government accountable for the operation of delivery drones and would expect us to maintain at least some degree of oversight. Not taking any action risks a negative community response and also does not allow the Government to easily respond to any criticism.

Introducing a Code of Practice would also be a useful precedent for any future drone delivery companies that may wish to operate within the ACT.

Another more strict option could be for the Government to explicitly ban automated delivery drones, but with provision for exemptions. While this would allow the Government the highest degree of control over delivery drones and how they are introduced to the ACT, taking this approach may discourage innovation.

However, we do suggest that the ACT Government reserve the right to do so if necessary. It is possible the ACT could see the introduction of delivery drone companies who use poor business practices.

6.2 Public Consultation

The community's response to the use of delivery drones in Royalla will be important to guide the Government's approach to permitting their use. A further question is whether and how we should consult with the community.

As part of facilitating Project Wing's trial in Royalla, we took the position that the trial would serve as the consultation. Undergoing public consultation on a trial when the community was not familiar with the technology would risk poorly informed feedback. Public consultation also would have slowed down the process.

However, an expanded trial that involves Project Wing operating over the suburbs of Canberra is a more significant issue. We suggest that there are the following main options.

1. Inform only – we allow Project Wing to commence operations with some sort of public notice but no other arrangements for consultation.
2. Inform with the Code of Practice – we release the Code of Practice at the start of Project Wing's expanded trial, but make no other arrangements for consultation.

3. Inform with the Code of Practice and then consult – we release the Code of Practice at the start of Project Wing's expanded trial, and then make arrangements for consulting with the community and for receiving feedback over time.
4. Release the Code of Practice for consultation – we release the Code of Practice for public comment, before finalising the Code and giving Project Wing the green light to move forward.
5. Full public consultation – we prepare a discussion paper on a number of options for delivery drones, engage in public consultation and then potentially settle a Code of Practice.

We recommend option 3 – releasing the Code of Practice and then consulting with the community during the trial. Our Code of Practice will communicate that we are taking the potential risks seriously, while also facilitating a new technology.

We would introduce a continuous feedback mechanism and seek feedback from the community from a variety of sources during the expanded trial. The community feedback that we receive would be informed by actual experience with the delivery drones – hence we consider that this option is preferable to option 4.

However, this course of action presents a risk that the community will have a more negative response than we are expecting and that the community will criticise the Government for its permissive attitude.

We do not recommend more substantive consultation (option 5). Our advice to date is that facilitating Project Wing's expanded operations in the ACT has strategic benefits for the ACT. Should the Government as a whole share this view – it would be disingenuous for the Government to consult on whether we should permit them to operate in Canberra.

We also do not consider that options 1 and 2 are viable. We expect that the community will have a desire to provide feedback to Government on delivery drones and providing a structured approach to receiving this feedback is desirable.

Code of Practice for Project Wing

Operation of automated delivery drones in the Australian Capital Territory

GENERAL ISSUES

The introduction of automated delivery drones

Drones are becoming increasingly common in the Australian Capital Territory (ACT) and across the world. Governments use drones for military purposes, hobbyists purchase drones for fun and businesses use drones for purposes such as aerial photography.

- As of October 2017, the Civil Aviation Safety Authority advises that there are at least 50,000 drones being operated in Australia, mostly for sport and recreation purposes.[1]

The use of automated delivery drones to deliver small packages to consumers is now upon us.

Automated delivery drones offer the potential for consumer benefit and choice. It is also possible that automated delivery drones could reduce vehicle trips, with reduced congestion and environmental benefits.

In September 2017, Project Wing announced the start of a trial in Royalla, a community just across the ACT's border to the south-west. This trial would involve on-demand delivery of food and small convenience items to Royalla households.

The ACT Government's role

The ACT Government is prepared to support Project Wing's introduction of automated delivery drones into the suburbs the ACT. The introduction of this new business model to the ACT will allow us to evaluate the potential benefits and impacts from delivery drones.

However, we also need to represent the community's interests and ensure that delivery drones are operated in a responsible way. For example, we consider that the community would expect controls around matters such as privacy and noise.

Purpose of the Code of Practice

This Code of Practice is intended to introduce a preliminary framework for Project Wing to operate in a way that balances community interests and includes safeguards. This Code has been co-designed between the ACT Government and Project Wing.

In the longer term, automated delivery drones may introduce entirely new issues that we are not well placed to consider at the moment. For example, many people have speculated that delivery drones may eventually lead to a need for three dimensional zoning.

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[1] https://consultation.casa.gov.au/regulatory-program/dp1708os/

This Code is not seeking to cover these longer term questions. However, it is intended to support information sharing between the ACT Government and Project Wing to help us develop a better understanding of what a longer term regulatory framework could look like.

Current regulatory environment

Air Safety

The Civil Aviation Safety Authority (CASA) is the national regulator for drones. CASA licences commercial operators and maintains air safety standards.

In an August 2017 discussion paper[2] on appropriate safety standards around drones, CASA advised their regulatory authority 'extends exclusively to matters of aviation safety. So, although they are certainly important, there are a number of issues involving the use of drones that are not matters CASA can regulate. These include security, privacy, importation, insurance and the broader social and economic implications of RPA [drone] technology'.

CASA ensures that drones are used in a safe way and that they stay out of any airspace that may be dangerous, particularly regarding airports and the flight paths of planes.

Land use

A commercial delivery drone operation is a new type of business activity that is not currently considered in the *Territory Plan 2008* – the ACT's zoning framework.

The ACT Government is prepared to allow Project Wing to operate as a temporary use on our unleased Territory land. We will consider the zoning implications during the trial as a longer term issue.

General regulations

While delivery drones are not specifically regulated for, there are nevertheless a range of general business laws that businesses need to comply with in Australia.[3] These laws include:

- consumer laws that provide regulation on contract terms, consumer rights and product safety;
- product liability regulation to ensure product safety;
- privacy laws that regulate how businesses can collect, access and store personal information and communication; and
- work health and safety laws provide businesses (and individuals within businesses) with a duty to protect workers and other persons from harm.

[2] https://consultation.casa.gov.au/regulatory-program/dp1708os/. Page 6.
[3] https://www.austrade.gov.au/International/Invest/Guide-to-investing/Running-a-business/Understanding-Australian-business-regulation/Australian-business-and-environment-laws

CODE OF PRACTICE

Project Wing is a technology company that has a strong interest in maintaining the confidentiality of intellectual property. For that reason, this Code of Practice is separated into two parts:

1. a description of the framework that Project Wing will operate within; and
2. the identification of a number of areas of risk and potential community impact.

For this second section, the ACT Government will be describing the risk and articulating our broad expectations. Project Wing will then be separately providing us with their approach to managing these issues. This will be provided on a commercial in confidence basis and will not be made public.

The ACT Government is also only interested in receiving information that allows us to assess Project Wing's approach to risk management – we are not seeking access to detailed and proprietary information.

PART 1

Section 1: General operations

Description of the technology and business model

For Project Wing input.

Engagement with the public and other stakeholders

High level description – how Project Wing intends to engage with the public and other key stakeholders as part of the trial. For Project Wing input.

- Commitment to inform the nearby neighbours.
- Mechanism for taking and responding to complaints.

Safety arrangements for participating members of the public

Project Wing to describe the training and procedures they will use for participating businesses and consumers to promote safety around the point of pick up and drop off of packages.

Section 2: Land use, operating hours and noise impacts

- This section is to cover / control the general impacts on the community.

Location

Location of the drone delivery operation site.

Area of operation

Map showing the area of operation for the drones. Note: is there any sensitive infrastructure in the area that the drones will need to avoid?

Air space area of operation

Operating procedures around the height at which the delivery drones will operate.

Operating hours and noise

Permitted hours of operation. To fit within the ACT's noise regulations – 7:00am to 8:00pm weekdays, 8:00am to 8:00pm weekends.

https://www.accesscanberra.act.gov.au/app/answers/detail/a_id/61/~/noise#!tabs-2

Section 3: Incident procedures

Incident reporting procedures

This section is to identify a few tiers for the seriousness of any potential incidents, and what the arrangements are for each of the tiers. [note: for further development]

Tier 1 – safety incidents involving any personal injury or harm to a member of the public.

- Alert the police immediately.
- Alert the Government within 12 hours and provide a more detailed report within three days.

Tier 2 – any damage to property, whether public or private

- Alert the policy immediately.
- Alert the Government within 24 hours and provide a more detailed report within seven days.

Tier 3 – incidents that do not involve injury or damage to property, including any drone accidents with birds or other wildlife.

Crash recovery procedures

Right of access rules for recovering equipment?

What happens if the drone falls in the lake. Arrangements here?

Section 4: Reporting to Government

General reporting procedures

Project Wing will provide quarterly reporting to Government. This should cover the following areas.

- A general summary of the scale and volume of operations.
- The nature and volume of any complaints from the public or other stakeholders, and how they are dealt with.
- [anything else?]

PART 2 – SAFETY AND TECHNICAL INFORMATION

Section 3: Insurance

Statement that Project Wing will need to maintain appropriate insurance to protect against the risks associated with the delivery drone operations.

Section 4: Safety Management

Cyber security – Project Wing will need to have security measures used to ensure against hacking of the drone to interfere with take control of the drone or to otherwise access any of the information.

Systems failure – Project Wing will need to be prepared to manage any system failures including hardware failures, software failures and human errors. This may include redundancy features and contingency features in the case of failure.

Air traffic management – proposed arrangements around ensuring that the automated drones avoid each other.

Pre-operations testing – Project Wing should demonstrate that they have undertaken tests and trials as part of ensuring that their operations will be safe.

Section 5: Privacy

Data collection and privacy

Statement that Project Wing should not be using their drones to collect personal information from households.

Project Wing to provide information that will confirm that their drones will not have a privacy impact, including information around:

- the data that will be collected by the drones, how that data will be stored and for how long;
- the data that will be communicated between the drone and the central operations area; and
- provisions to maintain the security of this data.

From:"Clark, Rebecca" <RebeccaM.Clark@act.gov.au>
Sent:09/11/2018 9:09 AM
To:"Webster, Eddy" <Eddy.Webster@act.gov.au>
Subject:drones law and noise [SEC=UNCLASSIFIED]

FYI – legal research

ACT EPA – Section 8

8 Limitation of application in relation to certain people and things

(1) This Act does not apply in relation to noise made by or a pollutant emitted into the air by—

(b) a Commonwealth jurisdiction aircraft within the meaning of the Air Services Act 1995 (Cth);

"Commonwealth jurisdiction aircraft" means any aircraft that:

(a) is being operated:

(i) in the course of trade and commerce with other countries or among the States; or

(ii) in the course of, or for the purposes of, the provision of services by a trading corporation (within the meaning of paragraph 51(xx) of the Constitution); or

(iii) by a foreign corporation (within the meaning of that paragraph of the Constitution); or

(iv) in a Territory, between Territories or between a Territory and a State; or

(v) in journeys to or from places that have been acquired by the Commonwealth for public purposes; or

(b) is in the possession or under the control of the Commonwealth or an authority of the Commonwealth; or

(c) is being used wholly or principally for a purpose of the Commonwealth.

"aircraft" means any machine or craft that can derive support in the atmosphere from the reactions of the air, other than the reactions of the air against the earth's surface. – *Civil Aviation Act 1998* (Cth)

"aircraft" means any machine or craft that can derive support in the atmosphere from the reactions of the air and, in Division 4 of Part 5, includes an object that was designed or adapted for use as an aircraft but is incapable of being so used because:

(a) a part has, or parts have, been removed from it; or

(b) it is in a wrecked or damaged condition.

Air Services Act 1995 (Cth)

CASR Part 101 - Unmanned aircraft and rockets[i]

Part 101 consolidates the rules governing all unmanned aeronautical activities into one body of legislation. It prescribes the rules for the use of unmanned moored balloons and kites, unmanned free balloons, unmanned rockets, remotely piloted aircraft (RPA), model aircraft, and pyrotechnic displays.

Post-implementation review (PIR)

Project US 14/18 has been approved to:

- review the provisions in Part 101 covering both model and other remotely-piloted aircraft, for effectiveness in managing the emerging risks associated with use of unmanned aircraft
- publish the Part 101 MOS, including any requirements emerging from the reviewed regulations.

Noise

Aircraft noise is regulated under the Commonwealth Air Navigation Act 1920. Generally civil aircraft operating in Australia must comply with the Airports Act and meet noise standards specified in the Air Navigation (Aircraft Noise) Regulations 1984 (Cth). Concerns about aircraft noise are lodged with Airservices Australia.

Advisory Circular 101 – 10 v1.3

3.6.5 Noise abatement

3.6.5.1 RPA operators are subject to applicable local noise abatement requirements—such as operating hour limitations and flight path/altitude restrictions—in the area of operation. Details of noise abatement procedures, including 'Fly Neighbourly' areas, are published in ERSA.

Note: Local authorities may have additional noise abatement by-laws.

Surveillance[ii]

the new laws are focused on the technology (drones) not the harm (pervasive surveillance). In many cases, this technology centric approach creates perverse results, allowing the use of extremely sophisticated pervasive surveillance technologies from manned aircraft, while disallowing benign uses of drones for mundane tasks like accident and crime scene documentation, or monitoring of industrial pollution and other environmental harms.

[i] https://www.casa.gov.au/standard-page/casr-part-101-unmanned-aircraft-and-rocket-operations

[iii] https://www.brookings.edu/research/drones-and-aerial-surveillance-considerations-for-legislatures/

https://www.economist.com/technology-quarterly/2017/06/10/the-future-of-drones-depends-on-regulation-not-just-technology

https://www.straitstimes.com/asia/australianz/rise-of-the-drone-poses-regulation-headache-for-australia

Kind regards

Rebecca Clark | Policy Officer
☎+61 620 72107 | Email: rebeccam.clark@act.gov.au
Regulation and Productivity | Strategic Policy and Cabinet
Chief Minister, Treasury and Economic Development | ACT Government
Level 5, Canberra Nara Centre | GPO Box 158 CANBERRA ACT 2601 | www.act.gov.au

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I acknowledge the Ngunnawal nation as traditional custodians of the ACT and honour the Elders both past and present. I acknowledge and respect their continuing culture and the contribution they make to the life of this city and this region.

Please consider the environment before printing this email.

From:"Clark, Rebecca" <RebeccaM.Clark@act.gov.au>
Sent:12/11/2018 1:47 PM
To:"Potter, Chantel" <Chantel.Potter@act.gov.au>
Subject: Drones work plan [SEC=UNCLASSIFIED]
Attachments: Drones regulation plan.xlsx

Hi Chantel

Attached is my project plan. You will also find it here should you wish to amend.

Also, I haven't sent the working group any materials yet from last week's meeting – did you want me to go ahead of the cleared minutes, or would you like me to wait? We are waiting on GSO approval to share the legal advice, so with the minutes, those are the only outstanding docs.

Kind regards

Rebecca Clark | Policy Officer
☎+61 620 72107 | Email: rebeccam.clark@act.gov.au
Regulation and Productivity | Strategic Policy and Cabinet
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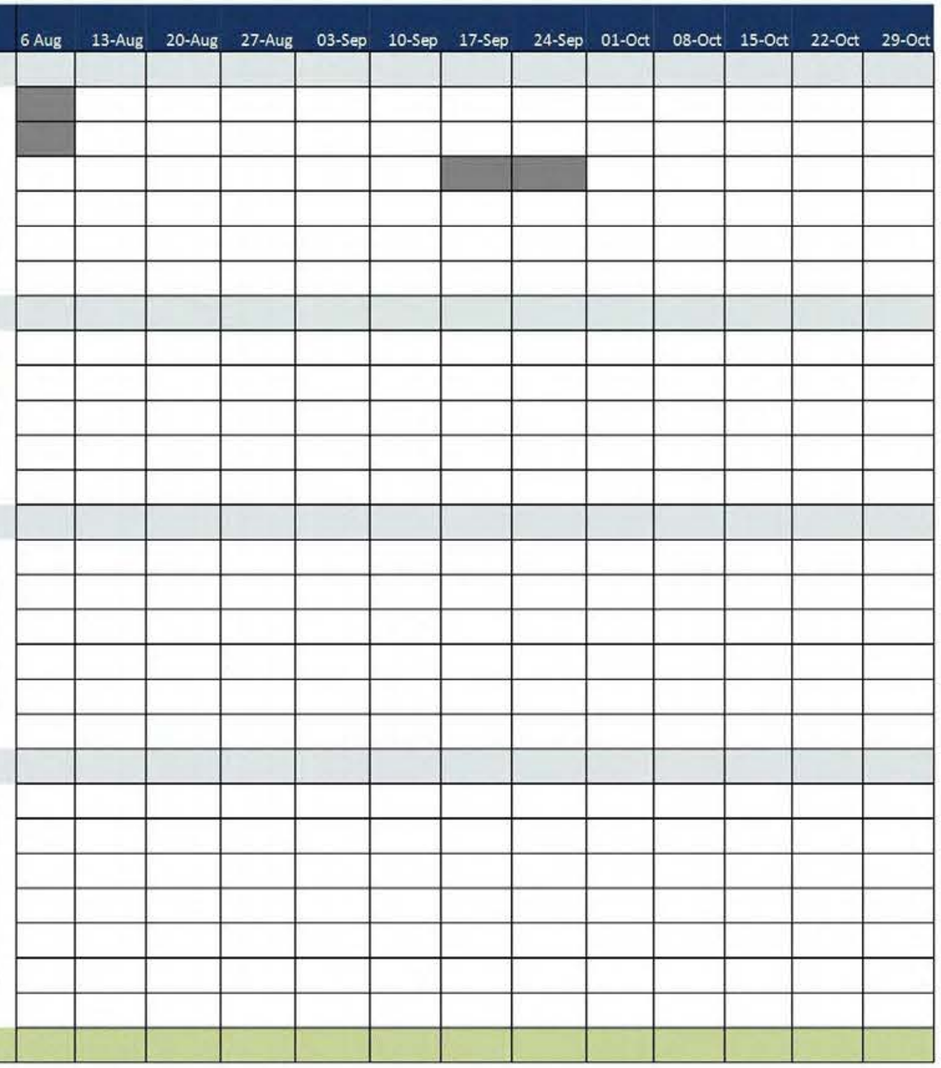
Project Name Regulatory Scan for Drones
Project Manager Rebecca Clark
Project Deliverable Discussion Paper/ACT Govt Submission to Inquiry

Start Date 07-Aug-18
End Date 29-Nov-19
Overall Progress 20%

Tasks	Responsible	Start	End	Days	Status
Project Governance					
Establish Working Group	Reg Reform	07-Aug	15-Aug	8	Complete
Convene WG meeting	Reg Reform	04-Sep	04-Sep	0	Complete
Identify issues	WG	18-Sep	24-Sep	6	Complete
Agree to the work program	WG				Not started
Briefing to, and approval from, Minister	Reg Reform				Not started
Community Engagement Program					
Establish comms subcommittee	CMTEDD Strategic Comms	09-Nov	09-Nov	0	In progress
Nominate representatives	WG	09-Nov	13-Dec	34	In progress
Develop program	Comms SC			0	Not started
Approve program	WG			0	Not started
Industry Forum					
Consultation plan developed and approved	Reg Reform			0	Not started
Procure third-party facilitator	Reg Reform			0	Not started
Arrange forum date and facility	Reg Reform			0	Not started
Delivery of forum	Reg Reform			0	Not started
Briefing to Minister	Reg Reform			0	Not started
Discussion Paper					
Consultation with community and industry, as applicable	Ref Reform			0	Not started
Briefing to, and approval from, Minister	Reg Reform			0	Not started
Draft Cabinet Submission	Reg Reform	07-Jan	15-Jan	8	Not started
Approve Cabinet Submission	CMTEDD executives	15-Jan	18-Jan	3	Not started
Approve Cabinet Submission	Minister	18-Jan	25-Jan	7	Not started
Circulate Cabinet Submission	Cabinet Office	25-Jan	05-Feb	11	Not started



05-Nov	12-Nov	19-Nov	26-Nov	03-Dec	10-Dec	17-Dec	24-Dec	07-Jan	14-Jan	21-Jan	28-Jan	04-Feb	11-Feb	18-Feb	25-Feb	25-Mar	22-Apr	20-May	17-Jun	15-Jul	12-Aug	09-Sep	07-Oct	04-Nov	09-Dec
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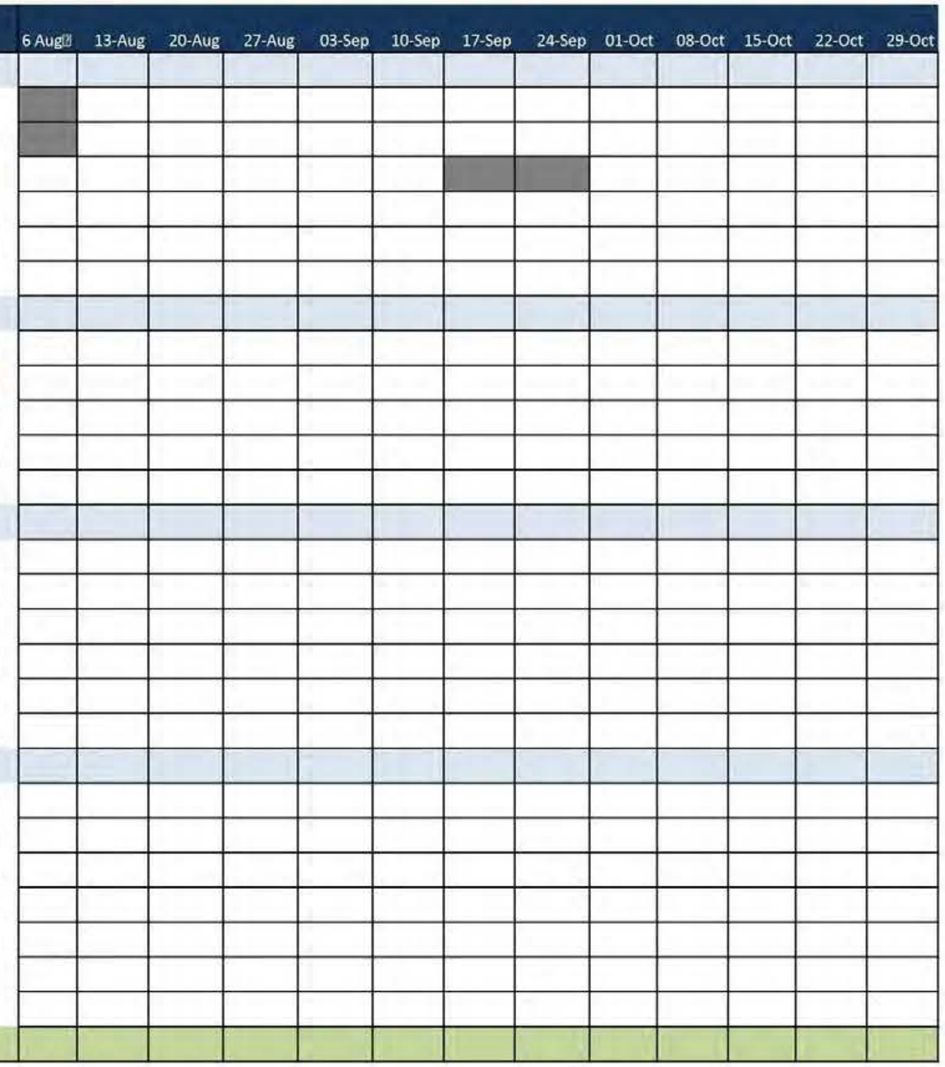

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■	■	■	■	■	■	■																			
■	■	■	■	■	■	■																			

From:"Clark, Rebecca" <RebeccaM.Clark@act.gov.au>
Sent:06/12/2018 4:12 PM
To:"Starick, Kate" <Kate.Starick@act.gov.au>
Cc:"Potter, Chantel" <Chantel.Potter@act.gov.au>
Subject: Actions arising from drone inquiry meeting with III and EPSDD [DLM=For-Official-Use-Only]
Attachments:18-144 Drone Wildlife Review.pdf, ACT Drone report FULL - Web single (2).pdf, AndrewBarr-Letterhead 18_29555 - SIGNED.PDF

Hi Kate

Following on from the meeting with III and EPSDD today regarding the drones trial, I have drafted the following email for follow up.

This covers off all the actions arising from the meeting except for the data question regarding implications for other disruptive technologies that may come from the On-Demand Transport Industry evaluation – I have discussed that with Chantel and will need further particulars from Glen to action that.

Could you look at the below text, with the view to sending out to Glen, Ellis, Andrew McCredie (who is also the III rep on the drones working group), and Kieran tomorrow.

Thanks Kate

Good afternoon all

Thank you for meeting with us today to discuss carriage of the drones delivery trial inquiry moving forward.

EPSDD have agreed to lead on drafting the submission, with input from directorates as outlined below.

Regulation and Productivity, Policy and Cabinet Division, have agreed to handle cabinet approvals and processes, and to drafting the covering letter for the submission to the inquiry.

Ref. No.	Terms of Reference – inquire and report on, with particular reference to:	Lead agency	Support agency
1(a)	the decision to base the trials of the technology in the ACT and surrounding region;	EPSDD	
1(b)	the economic impact of drone delivery technology being tested in the ACT including the: ○ (i) investment that has been brought in to the Territory; ○ (ii) number of jobs that have been created as part of the trial; and ○ (iii) extent of collaboration with local industry and academic institutions;	ED	EPSDD
1(c)	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, Worksafe and Access Canberra; and ○ (ii) Commonwealth agencies such as Air Services Australia and Civil Aviation Safety Authority;	CMTEDD	

1(d)	the extent of any environmental impact as a result of trialling drone delivery technology on: ○ (i) residents within the trial area; ○ (ii) native wildlife; ○ (iii) domestic animals; and ○ (iv) greenhouse gas emissions;	EPSDD	
1(e)	ways to improve the use of drone delivery technology within the ACT;	EPSDD	ED
1(f)	any other relevant matter;	EPSDD	
1(g)	information privacy	CMTEDD	JACS

Cabinet timeframes are as follows:

Due date to lodge for exposure circulation	Due date to lodge with Minister's Office	Due date to lodge with Cabinet Office for final lodgement	Scheduled Cabinet Date
8 Jan	22 Jan	29 Jan	5 Feb
14 Jan	**28 Jan**	**4 Feb**	**11 Feb**
21 Jan	4 Feb	11 Feb	18 Feb

The timeframes are in accordance with Cabinet processes – anything outside these timeframes will require approval.

The timeframe is less than ideal to prepare a submission; an extension may be sought from the Committee.

Glen – as this has been assigned to you in TRIM, the request should come from your team. Contact your DLO to test the Minister's appetite to seek an extension – it will be easier to get an extension than a waiver of cabinet process, it would be prudent to action the extension request ASAP.

We have agreement to go to Cabinet ahead of the deadline for submission on **22 Feb 2019**. Regulation and Productivity will file a cabinet number request form for the scheduled cabinet meeting of 11 February.

Policy and Cabinet Division will ask for advice on whether the submission to the inquiry should be signed by Minister Gentleman, Minister Ramsay, or both.

Attached for your information is the Wing-commissioned economic impact study by AlphaBeta, and the bird impact study by NGH Environmental. Please note, the economic impact study is embargoed and not for public release. I will update you when the document is publically available.

Also **attached** is the last ministerial correspondence that Regulation and Productivity handled prior to the devolution of responsibilities between Ministers Gentleman and Ramsay – Regulation and Productivity have not had further requests for mincos. Glen – this particular correspondence is the lead organiser of the Bonython Against Drones organisation, Mr Nev Sheather.

If you have any questions, please do not hesitate to contact me.

Kind regards

Rebecca Clark | Policy Officer
☎+61 620 72107 | Email: rebeccam.clark@act.gov.au
Regulation and Productivity | Strategic Policy and Cabinet
Chief Minister, Treasury and Economic Development | ACT Government

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Schedule 1 - 1.12 Information in possession of ombudsman

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FASTER, GREENER AND LESS EXPENSIVE

THE POTENTIAL IMPACT OF DELIVERY DRONES IN THE AUSTRALIAN CAPITAL TERRITORY

NOVEMBER 2018

Prepared by AlphaBeta for Wing

αlphaβeta
strategy x economics

Important Notice on Contents – Estimations and Reporting

This report has been prepared by AlphaBeta for Wing. All information in this report is derived or estimated by AlphaBeta analysis using both proprietary and publicly available information. Where information has been obtained from third party sources and proprietary research, this is clearly referenced in the footnotes.

The amounts in this report are estimated and specified in 2017 Australian dollars. Where conversion rates have been used, these are stated in the footnotes.

αlphaβeta

strategy x economics

AlphaBeta is a strategy and economic advisory business serving clients across Australia and Asia from offices in Singapore, Sydney, Melbourne and Canberra

Sydney
Level 7, 4 Martin Place
Sydney, NSW, 2000, Australia
Tel:+61 2 9221 5612
Sydney@alphabeta.com

Canberra
Level 1, 45 Novar Street
Yarralumla, ACT 2605, Australia
Canberra@alphabeta.com

Melbourne
Melbourne@alphabeta.com

Singapore
1 Upper Circular Road
#04-01
Singapore, 058400
Tel: +65 6443 6480
Singapore@alphabeta.com

CONTENTS

Drones will deliver benefits to ACT businesses, consumers and communities

BENEFITS FOR LOCAL BUSINESSES

Grow retail sales in the ACT by

$30-40 million

of which **$10-15 million** could accrue to **small businesses** in the ACT in 2030

Reduce delivery costs for businesses by up to

$12 million

per year by 2030.* Delivery costs for some items such as takeaway food could fall in the long term by up to

80-90%

Expand the reach of delivery businesses by up to

4x as many consumers

by bringing more households into range

BENEFITS FOR CONSUMERS

Save

3 million hours

for consumers in 2030 by replacing customer pick-up journeys, as well as **delivery times** that are

60-70% faster

than today's methods

Save consumers

$5 million

per year in **reduced delivery costs by 2030.*** Delivery costs for some items such as takeaway food could fall over the long term by up to

80-90%

Expand choice for consumers by giving them access to up to

4x as many merchants

by bringing more retailers within delivery range of their home or workplace

BENEFITS FOR SOCIETY

Reduce traffic congestion by replacing

35 million

vehicle kilometres

each year. This could also avoid up to **70 road accidents** each year

Reduce annual **CO_2 emissions** by

8,000 tonnes

due to fewer road vehicle deliveries. This is equivalent to the carbon storage of **250,000 trees**

* Assumes consumers receive a fee decrease that is proportional to the reduction in underlying costs

1

EXECUTIVE SUMMARY

Drones have the potential to transform retail around the world, and the ACT is at the forefront of this change, with regional trials demonstrating how delivery drones can bring a wider range of products within rural and suburban consumers' reach. Flying above the traffic, drones can quickly and cost-effectively deliver small packages of food, medicine and other household items, saving businesses and consumers time and money, while also helping to reduce congestion, greenhouse gas emissions and accidents on the road.

The ACT is at the forefront of global drone technology. As one of the first global delivery hubs for Wing, the ACT has had drones deliver thousands of food, drink, pharmaceutical and household items from local businesses to suburban homes, demonstrating the feasibility of and consumer appetite for drone delivery in Australia.

Drones are expected to have an important role to play in "last-mile" delivery – that is, the transport of products from the store to the home. Last-mile delivery is one of the most costly segments of the supply chain, accounting for 15 to 20% of the total cost of retail transactions in the form of delivery fees or the time spent by consumers picking up their goods. The ACT incurred a total of $1.1 billion of last-mile delivery costs in 2017.

Last-mile delivery is particularly challenging in Australia, where logistics providers face congested city roads at one extreme and sparsely populated countryside at the other. Consumers are doing more of their shopping online, but still face limited delivery options compared with those available overseas, where "same-day" delivery services are more common.[1]

The cost and time taken for items to be delivered in Australia not only limits the range of products available to consumers at home; local businesses are also limited in their ability to reach customers who either need or demand home delivery.

Drones could be a cost-effective solution for small items needing to travel distances of 1 to 10 km urgently. Based on these criteria, drones could deliver up to 4-6% of household purchases in 2030 in the ACT, helping to make local businesses more competitive, providing greater choice and convenience for customers, while also reducing the total number of motor vehicle journeys in the region.

Road transportation accounts for 69% of the ACT's greenhouse gas emissions (compared with only 16% nationally), and replacing some of those journeys with delivery drones could have a significant environmental impact. By using drones to deliver 4-6% of its household purchases, the ACT could reduce the number of accidents on its roads, as well as carbon emissions by about 8,000 tonnes a year – equivalent to the carbon absorbed by 250,000 trees.

[1] SmartCompany (2017), "The last mile: Why Australian shoppers won't see same-day delivery from Amazon for years to come"

EXHIBIT 1

The impact of drone delivery in the ACT was analysed across three areas

The nature and size of each of these types of benefits is explored below.

Benefits for local businesses

Drone delivery could result in several important benefits for ACT businesses:

- **Expanding market reach.** Drones travel faster than all existing forms of last-mile delivery, reaching a maximum speed of 120 km/h. For some types of transactions, this additional speed allows businesses to offer instant or same-day delivery to customers in a wider geographical area. The delivery radius for restaurants, for example, could increase from an average of 5 km currently to 10 km with 2030 drone technology.[2] For a restaurant located in central Canberra, this could bring an additional 50,000 households into range.[3]
- **Reducing delivery costs.** ACT businesses, including food outlets, incur costs as part of providing delivery to customers. These costs include fees to delivery service providers (e.g. Uber Eats or Australia Post), as well as the cost associated with performing deliveries themselves. These costs make it unprofitable for some businesses to offer last-mile delivery at all, despite a growing customer preference for online shopping and delivery. The lower cost of drone delivery could result in a saving of up to $12 million to businesses by 2030.[4]
- **Generating increased sales.** By reducing delivery costs and increasing convenience, drone delivery will make it easier and less costly for consumers to purchase items in the ACT. As a result, consumers will be able purchase more items, or switch to higher-value items. These effects combined are

[2] Current range of 5 km based on the current Uber Eats and Deliveroo delivery radius on 8 October 2018 in the ACT, estimated based on the furthest restaurant delivery destination available from Canberra central.
[3] Potential increase in households estimated by count of households within 5 km radius of Canberra central compared with count of households within 10 km radius. ABS Census (2016)
[4] Assumes retailers receive a delivery cost reduction that is proportional to the reduction in underlying costs due to drone delivery.

expected to generate up to an additional $12,000-$16,000 a year for a retail business or $30-40 million in additional sales for the whole of the ACT in 2030.[5] Of this, $10-15 million could accrue to small businesses in the ACT.

- **Enabling more businesses to deliver.** Drones could allow more local businesses to offer last-mile delivery, giving them a new way to reach customers. This could allow more specialised businesses to thrive, and encourage and enable new businesses to engage in e-commerce.

Importantly, the business benefits outlined in this report exclude the profits generated by any third-party drone delivery providers. Instead, we focus on the benefits for retailers that partake in drone delivery, whether they do so in-house or via an outsourced drone service provider.

Benefits for consumers

Drone delivery has the potential to generate significant benefits for consumers in the ACT. These include:

- **Improving quality of life for homebound people.** Drones could deliver a wider range of food, medicines and other products to elderly, disabled, or otherwise homebound people for whom visiting shops and restaurants may be difficult or impossible.
- **Saving time.** Drones travel faster than all other forms of last-mile delivery and have the potential to shorten delivery times by 60-70%. Further, for suitable transactions (which are described in Section 2), drone delivery reduces the need for consumers to travel to pick up their items. By eliminating an estimated 4-5 million 'pick-up' journeys in 2030, drone delivery has the potential to save consumers 3 million hours, which is worth $70 million if valued at today's average earnings.[6] Rapid drone delivery enables consumers to have greater control over their time, knowing for certain that a delivery will arrive within a short time interval.
- **Reducing delivery fees.** In 2017, ACT consumers paid an estimated $30 million in last-mile delivery fees on transactions within the ACT.[7] Because drones cost less to operate than current delivery methods, businesses will be able to charge lower delivery fees to consumers for certain types of deliveries. Delivery costs for some items, such as takeaway food, could fall by 80-90%. This could save ACT households a total of up to $5 million in 2030.[8]
- **Expanding product variety.** Because the speed of drones allows retailers to offer instant or same-day delivery to a larger geographical area, customers in the ACT would thus have a wider range of products to choose from. An ACT suburb that currently receives delivery from 50 restaurants could expand their reach to over 150 food outlets via drone – a three-fold increase.[9]

Benefits for society

By reducing the number of motor vehicle journeys taken in fulfilling last-mile deliveries in the ACT, drone delivery has the potential to reduce emissions and make ACT roads safer.

- **Reducing the number of motor vehicle journeys.** By replacing traditional forms of delivery for certain types of transactions, drone delivery can reduce the number of motor vehicle journeys on ACT roads. Preliminary estimates suggest that drone delivery could result in 35 million fewer motor vehicle kilometres on ACT roads in 2030.
- **Reducing greenhouse gas emissions.** Small drones produce fewer emissions per package delivered than today's road vehicle delivery options. Flying a drone emits the equivalent of about 25 grams of greenhouse gas when delivering a small package, compared with the 296-728 grams emitted by delivery trucks. Items that are personally picked-up by a purchaser via car emit 4,600 grams of greenhouse gas per

[5] Relevant businesses defined as food and store-based retailers, based on 2017 business counts from the ABS.
[6] Average earnings per person of $23 per hour, based on $34 average earnings for those employed in the ACT, adjusted for employment-to-adult-population ratio of 68%.
[7] Includes fees for last-mile transport only and does not include transactions sent from outside of the ACT.
[8] Assumes consumers receive a fee decrease that is proportional to the reduction in underlying costs.
[9] Restaurant count based on the number of restaurants available on Uber Eats and Deliveroo, accessed from Yarralumla on 8 October 2018. Potential increase in restaurants based on the number of restaurants and cafes currently delivering within a 10 km radius of Yarralumla.

package.[10] By replacing these more polluting methods, drone delivery could eliminate about 8,000 tonnes of greenhouse gas emissions by 2030, equivalent to the carbon storage of around 250,000 trees.[11]

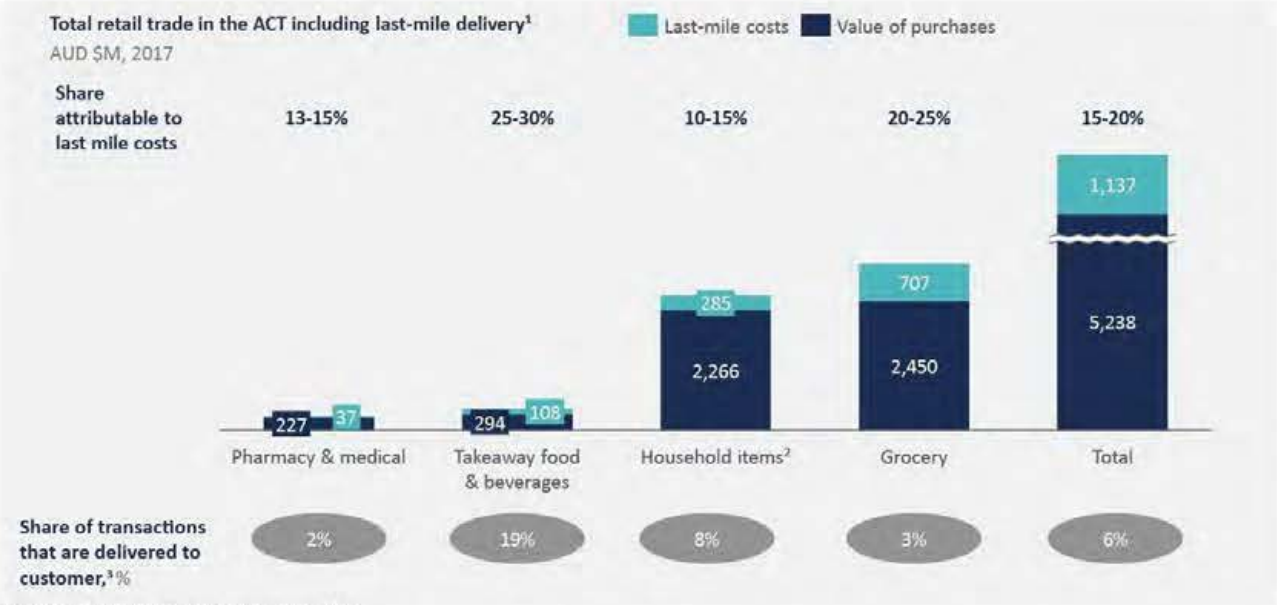
- **Reducing road accidents.** In 2016 there were 7,911 motor vehicle accident on ACT roads.[12] This represents two accidents for every million kilometres travelled by motor vehicles. If drone delivery is able to reduce the number of motor vehicle journeys by 0.6% by replacing road-based deliveries and pick-ups, this could result in 70 fewer accidents on ACT roads.

The last mile is a costly challenge

"Last-mile" delivery from the store to the home is one of the most costly segments of the retail supply chain. Most of the last mile is accounted for either by consumers taking the time to pick up their own goods (around 94% of all transactions) or by paid delivery services (around 6% of all transactions). Consumers who pick up their own goods incur costs of time as well as a range of other potential expenses such as fuel, parking and other vehicle costs. Products delivered by retailers or delivery services can incur both explicit fees (such as the additional cost of delivery paid by the consumer) as well as implicit delivery costs (such as costs that are absorbed by the retailer or passed onto the restaurant). The average cost of last-mile delivery can account for 15-20% of the total cost of the item, which comes either from delivery fees or the time of consumers picking up their goods.

EXHIBIT 2

The cost of last mile delivery (or pick-up) was ~$1.1bn in 2017, which represents 15-20% of the total value of retail trade in the ACT



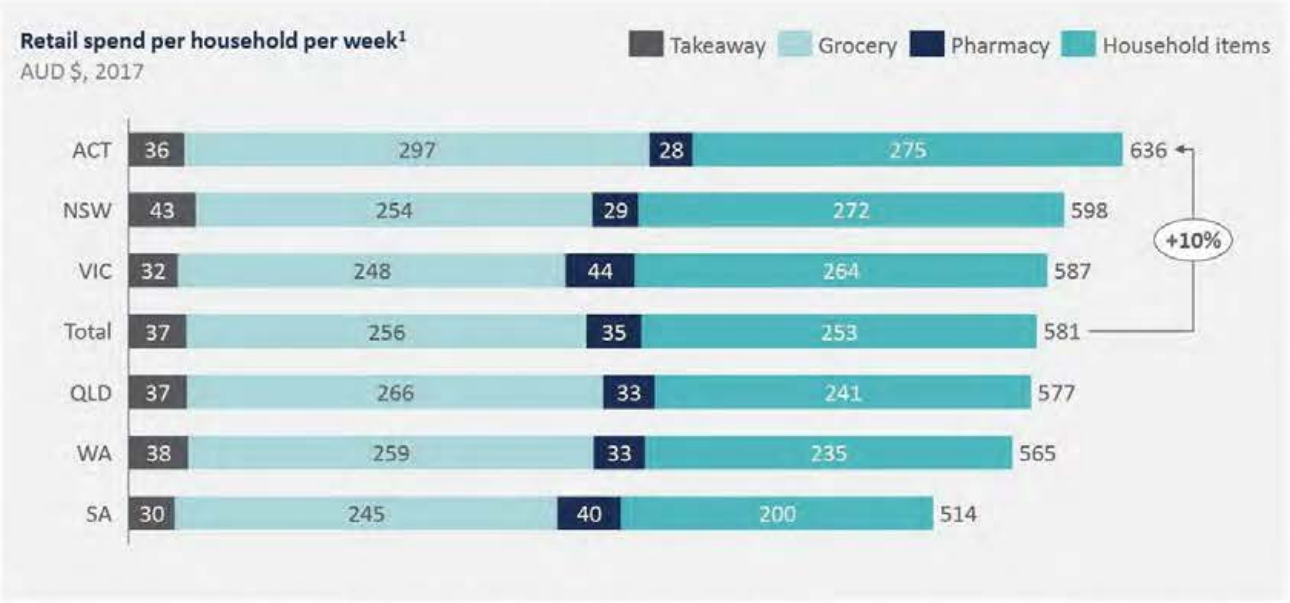
1 Excludes food consumed on-premise at restaurants/cafes
2 Includes household goods, clothing & footwear, department stores, newspapers/books, other recreational goods and other retailing
3 Other transactions are picked up instore by customers
SOURCE: ABS Retail Trade (2017), AlphaBeta Transport Cost Model

[10] Modelling of carbon emissions per delivery obtained from Stolaroff et al. (2018), "Energy use and life cycle greenhouse gas emissions of drones for commercial package delivery", Nature Communications 9: 409. The estimates used in this paper exclude the fixed warehousing component (we consider the marginal emissions per vehicle trip only)
[11] This is otherwise expressed as 8,000 MT CO_2e.
[12] ACT Government (2016), ACT Road Crash Report

The ACT has the largest retail spend per household in Australia. In the ACT last year delivery cost amounted to around $1.1 billion. By reducing delivery costs, drones have the potential to create massive value for both retailers and consumers.

EXHIBIT 3

ACT households spend more on retail than any other state, at $636 per household per week – 10% above the national average



1 Excludes food consumed on-premise at restaurants/cafes but includes takeaway. Number of households based on 2017 population and 2016 household sizes by state. Excludes NT and TAS due to their smaller populations and lower data quality. The NT also has a high retail spending per household, at $635.66 per week versus $635.73 for the ACT
SOURCE: ABS Retail Trade (2018), ABS Census (2016)

Drone delivery is gaining momentum globally

Investment in drone technology has grown exponentially, driven in part by retail and logistics giants seeking to improve their operations, and in part by technology companies hoping to provide third-party drone delivery services to other businesses. Enterprises globally purchased almost three million drones in 2017, up 39% from 2.15 million in 2016.[13] Further, the global market opportunity for commercial applications of drone technology is estimated at US$127 billion, with drone delivery being the third-largest component (see Exhibit 4).[14]

[13] Gartner (2016), *Forecast: Personal and Commercial Drones, Worldwide, 2016*
[14] PwC (2016), *Clarity from Above*

EXHIBIT 4

Delivery is predicted to be one of the top-three commercial applications of drone technology globally

SOURCE: PwC (2016) Clarity from above

The shift toward drone delivery is already underway. Global technology companies such as Alphabet's Wing, Amazon, and start-ups such as Flirtey, Zipline and Flytrex are either using drones for delivery today or conducting advanced trials of the technology. Here in the ACT, Wing has completed about 2,500 deliveries of beverages, food, pharmacy and household items to selected areas, with the approval and oversight of the ACT government and Civil Aviation Safety Authority (CASA).

Drones will have an important role to play in last-mile delivery

Drone technology has the potential to become an important part of Australia's delivery sector, particularly in fulfilling 'last-mile' deliveries.[15]

In this report, drones are assumed to replace current delivery methods where:

- **Item and location satisfy physical limitations.** Based on our analysis of external literature, we expect drones to carry a maximum weight of 2.5kg and travel at a maximum speed of 120 km/h for a total round-trip distance of 20 km in 2030.[16]
- **Delivery is time-sensitive in nature** (needed either instantly or on the same day), and
- **Drones are a cost-effective way of transporting the item,** given the physical limitations and required delivery time. For example, deliveries that not required until the next day (or later) can be transported more cheaply by traditional forms of delivery (e.g. parcel vans) due to the potential for economies of scale.

[15] 'Last-mile' deliveries include transporting an item to the customer's location from the retailer (if close) or local distribution centre

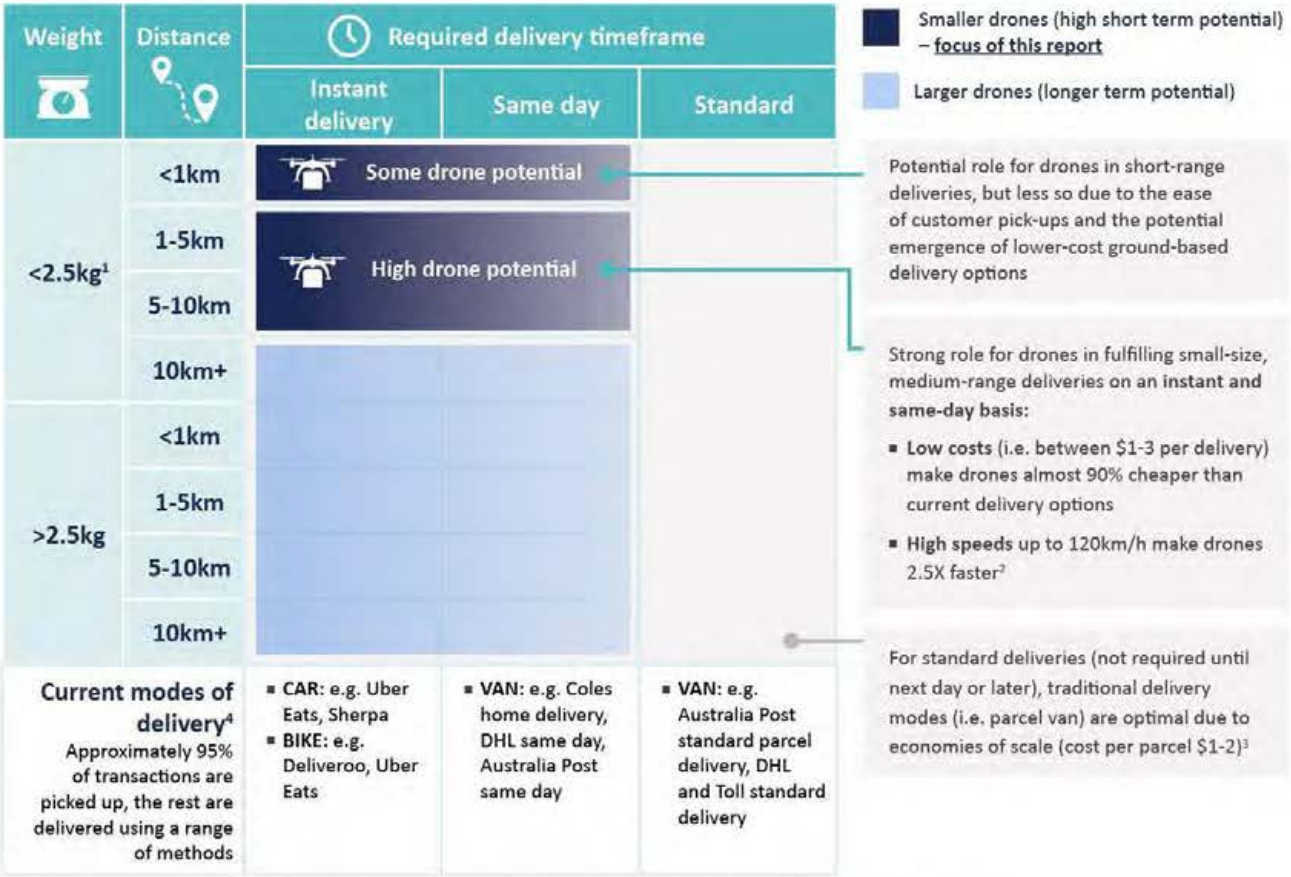
[16] The 20 km round-trip range allows drones to deliver packages at up to a 10 km radius but not beyond. While large drones could service larger distances and carry heavier packages, these aircraft were not considered as part of the study due to their different cost structure and the potential emergence of cheaper alternatives for longer-range delivery (e.g. autonomous road vehicles)

The result of applying these criteria (as shown in Exhibit 5) is that drones are most likely to be used for small item deliveries made on an instant or same-day basis. For these time-sensitive transactions such as food and medicine delivery, drones are significantly less expensive ($1-3 per delivery compared to $14-17)[17] and faster than other methods (more than twice as fast compared with current methods of instant delivery such as Uber Eats). Standard, less urgent deliveries will likely be fulfilled by road vehicles (including autonomous ones) by 2030. These vehicles can achieve a lower average estimated cost per delivery than drones when economies of scale can be achieved (i.e. when standard parcel deliveries are grouped together and delivered along a route).[18]

EXHIBIT 5

There is a strong role for drones in fulfilling small deliveries on an instant and same-day basis

Role for drones by transaction type



1 Assumes a maximum payload of 2.5kg and maximum range of 10km (20km round trip) for last-mile drone technology
2 Assumes a 10 km journey where a private car takes 20 minutes and a drone takes 8 minutes
3 Delivery costs refer to transport costs related to labour, fuel and depreciation. See appendix for details and assumptions
4 This list of example delivery modes is non-exhaustive.
Source: AlphaBeta analysis

[17] Cost for 1-5 km instant delivery compared with van, car and bike.
[18] McKinsey (2016), *Parcel delivery – the future of last mile*

It should be noted that larger drone technology has the potential to serve greater distances and heavier packages in the future. However the focus of this study is small drones due to greater certainty around the feasibility and economics of small-drone delivery.

Drones could deliver more than one in four take-away food orders, and up to 4-6% of all purchases in the ACT by 2030

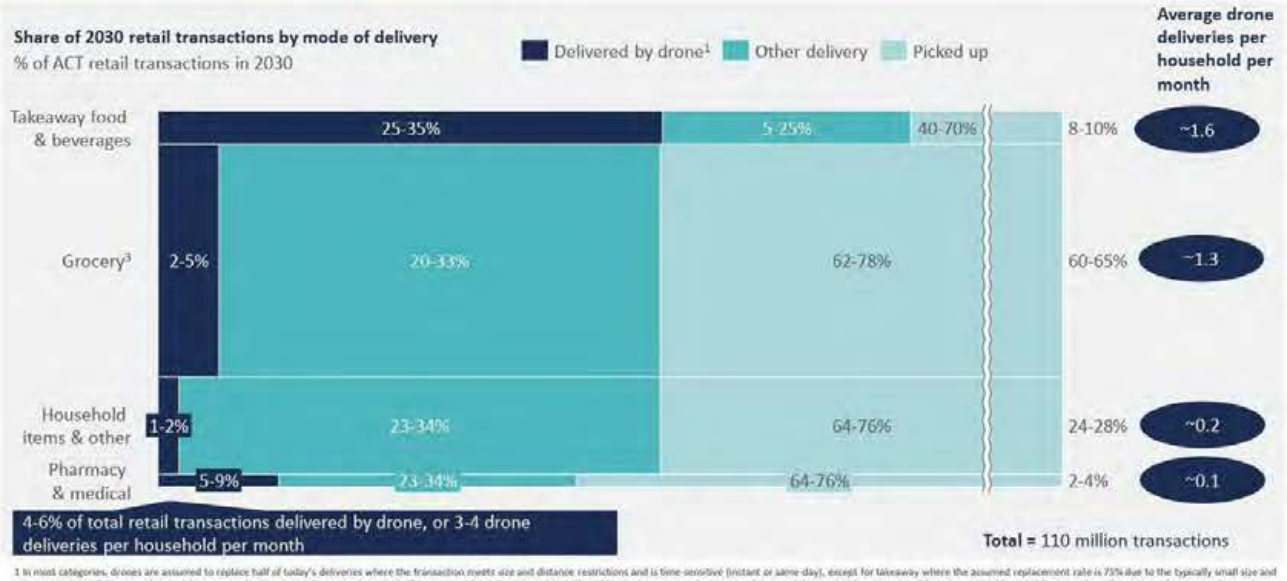
In 2017, ACT households made an estimated 90 million retail transactions, including groceries, pharmacy goods, takeaway food and other household items. Around 6% of those purchases were delivered to customers, while the remainder were picked up by customers travelling to the retailer's outlet.

The delivery landscape in 2030 will be different. Based on recent economic growth, ACT households will make an estimated 110 million transactions, and a greater share of these will be delivered.[19] Takeaway delivery could reach 40-50% of total takeaway sales by 2030, with external estimates for online deliveries in other product categories ranging from 20-35%.[20]

Drones will play an important role in this shift toward online delivery. It is estimated that drones could deliver up to 4-6% of household purchases in 2030 (Exhibit 6). There is significant variation by product category, with the greatest contribution of drones coming from takeaway food and beverages (due to the time-sensitive nature of takeaway food and small package sizes) and grocery (due to the high overall volume of purchases by ACT households).

EXHIBIT 6

In 2030, drones could deliver up to 4-6% of retail transactions, and up to 25-35% in some categories (e.g. takeaway)



1 In most categories, drones are assumed to replace half of today's deliveries where the transaction meets size and distance restrictions and is time-sensitive (instant or same-day), except for takeaway where the assumed replacement rate is 75% due to the typically small size and instant nature of these purchases. A lower rate of replacement (by approximately half) is assumed for deliveries within 1-5km of home due to ease of customer pickup and the potential emergence of low-cost ground-based delivery options. Drones are also assumed to replace ~20-30% of pickups that meet size, distance and time-sensitivity criteria. These are assumptions only and the above represents an example scenario rather than a prediction of future uptake
2 A higher share of deliveries in pharmacy & medical serviced by drone because the transactions are more likely to satisfy drone weight restrictions than grocery or household items
3 Includes convenience stores, which have a smaller average purchase weight than supermarkets
SOURCE: ABS Retail Trade, AlphaBeta analysis

[19] Based on a conservative forecast GSP growth rate for the ACT of 2% p.a. from 2017-30 (which is assumed to be lower than recent growth since 2009 of 3.0% p.a. due to the rising share of services in Australia's GDP)
[20] Based on various sources including Morgan Stanley, Bankwest, Australia Post. See Appendix for details.

2

BENEFITS FOR LOCAL BUSINESSES

Expanding market reach

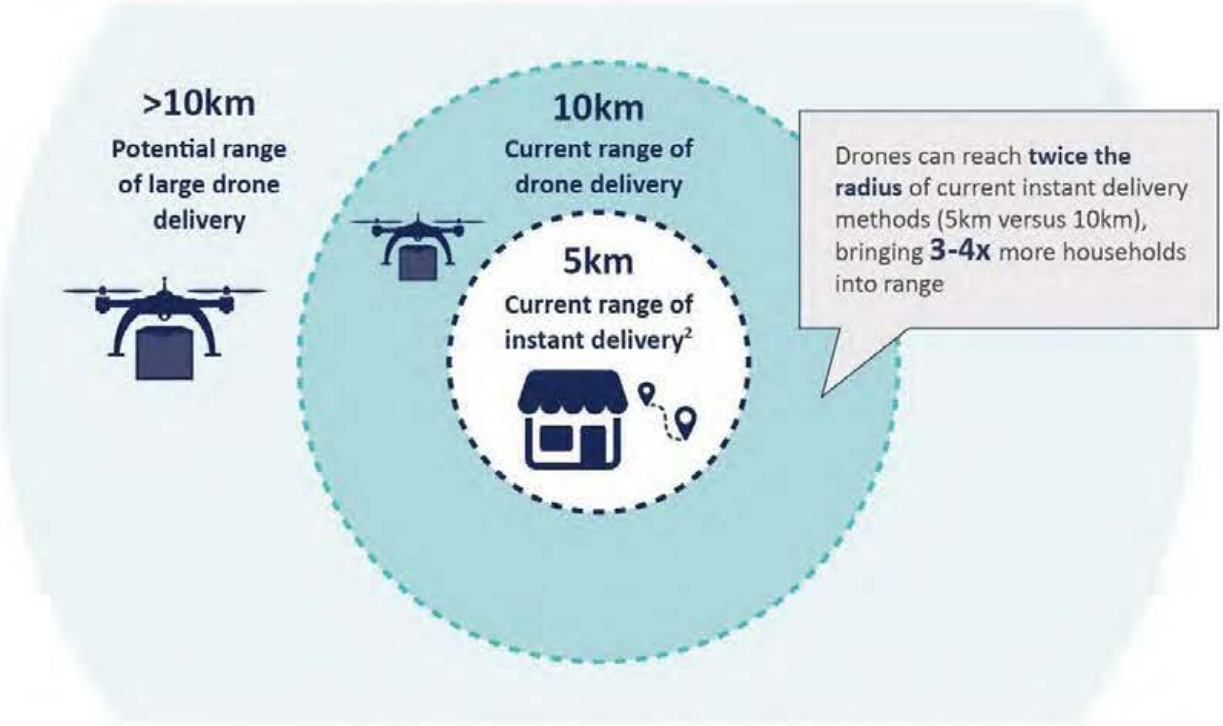
Drones can help ACT businesses reach more customers. The current radius of food delivery in Canberra, for example, is only about 4 or 5 km.[21] Road delivery vehicles are too slow to get food in good condition to customers much further than that, so businesses focus just on nearby customers.

But drones can deliver a package 10 km in less time than it takes a car to drive 5 km, so the effective range doubles. Doubling the range can more than double the market each business can reach. For example, doubling the range to 10 km triples the number of households within range of a restaurant based in central Canberra, from 25,000 households to 75,000 households.[22]

EXHIBIT 7

Drones can double the reach of instant delivery relative to current methods, bringing 3-4x more households into range

Range of current and future instant delivery methods[1]



1 Current range of 4-5 km based on the current UberEATS and Deliveroo delivery radius in the ACT, estimated based on the furthest restaurant displayed on the on 8 October 2018 from Canberra Central
2 Based on Uber Eats and Deliveroo
Source: AlphaBeta analysis

Even within today's delivery range, drones can help businesses better serve their customers where speed matters, such as food and pharmaceuticals. Today an 'instant' delivery van takes about 15 minutes to complete a 10km trip. A drone can cover the same distance in less than 6 minutes, or more than 60% faster.[23]

[21] Current range of 4-5 km based on the Uber Eats and Deliveroo delivery radius on the 8th of October (2018) in the ACT, estimated based on the further restaurant delivery destination available from Canberra Central.
[22] Household estimate based on population in relevant SA3 areas.
[23] Average van speed 40 km/h, average drone speed 100 km/h.

Reducing delivery costs

Delivery costs represent a significant expense for ACT businesses, especially in cases where delivery is time-sensitive. Restaurants currently pay around 30% of each order value to online delivery service providers.[24] Further, for other items, same-day parcel delivery alone can cost over $30 (with a share of these costs borne by the retailer in some cases).[25] These costs make it unprofitable for some businesses to offer last-mile delivery at all, despite a growing customer preference for online shopping and delivery.

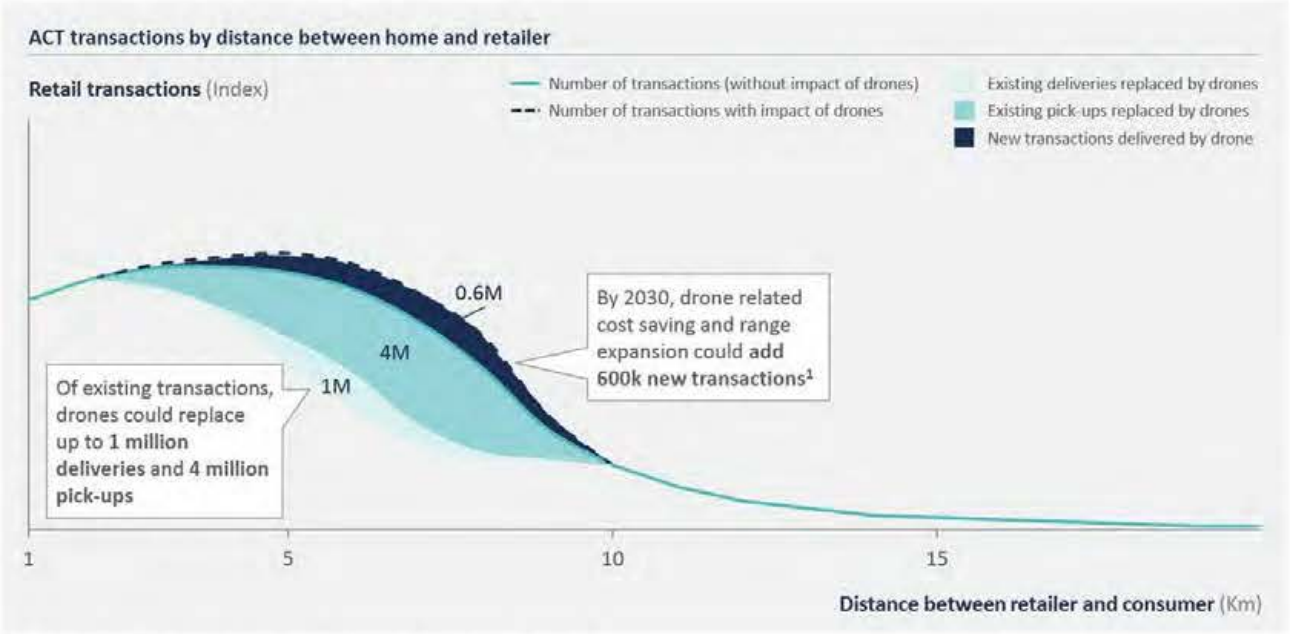
Drone delivery costs are likely to be up to 90% less expensive than existing methods of instant and same-day delivery. Even after factoring in the likely savings for delivery customers in the ACT, businesses there could save more than $12 million in 2030.[26]

Generating increased sales

As explored in Section 4 (Consumer Benefits), drones will save customers time and money. That cuts the effective cost of retail purchases, so consumers will make additional or higher-value purchases. While the value is hard to estimate precisely, drone delivery could generate an additional 600,000 annual retail transactions in the ACT in 2030, worth around $30-40 million in revenue. This benefit could be as high as $12,000-$16,000 per relevant retail business.[27] About $10-15 million, or just over one third of these benefits, is likely to be accrued by small businesses in the ACT.[28]

EXHIBIT 8

Lower cost, greater range, and the increased convenience of drones could grow transactions in the ACT by 600,000



NOTE: Illustrative axis, retail transactions and distance between retailer and consumer are indicative
SOURCE: AlphaBeta analysis

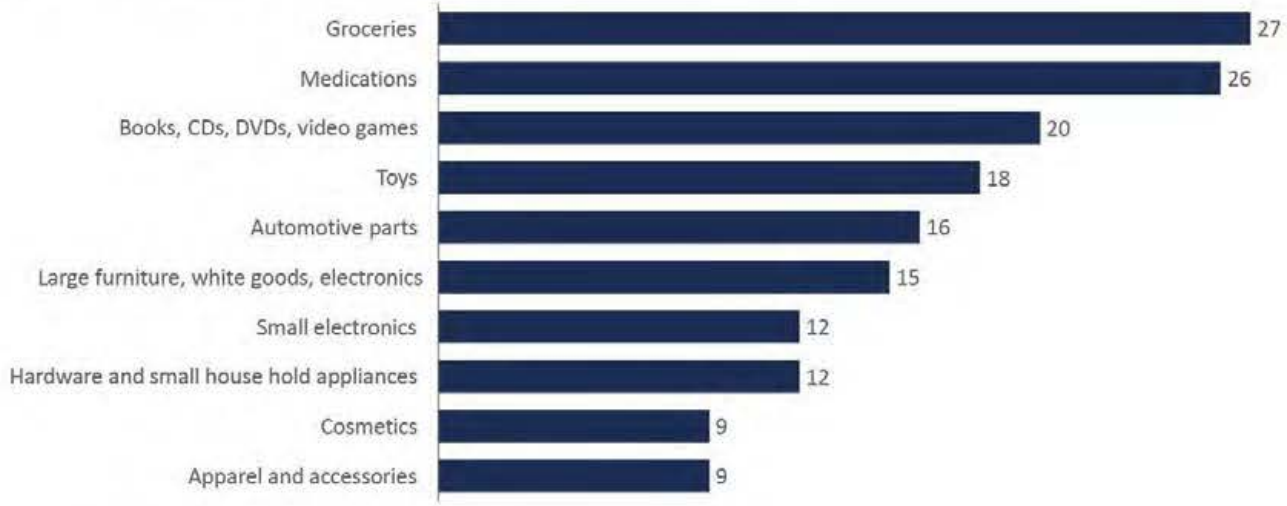
[24] Based on the 2018 pricing model of Uber Eats.
[25] Based on 2018 pricing of Australia Post and Copenhagen Economics (2016), *Principles of e-commerce delivery prices*
[26] Assumes retailers receive a reduction in delivery costs proportional to the reduction in the underlying cost of delivery due to drones.
[27] Relevant businesses defined as food and store-based retailers, based on 2017 business counts from the ABS.
[28] Small businesses are estimated to contribute 34% of value added to the economy. Australian Small Business and Family Enterprise Ombudsman (2016), *Small Business Counts: Small Business in the Australian Economy.*

Many consumers say they do not buy online because delivery takes too long. In a recent survey, more than a quarter of respondents reported not buying groceries and medical items online because of delivery delays.[29] Delays also deter consumers from ordering online for small electronics, cosmetics and other items that could be delivered faster by drone.

EXHIBIT 9

Faster delivery could lead to more purchases, particularly for grocery and medical items

Share of respondents who did not purchase an item online due to long delivery times[1]
Percent of respondents



1 Survey of 4,700 consumers in China, Germany, and the US
Source: McKinsey (2016) Parcel delivery – the future of last mile

[29] McKinsey (2016) Parcel delivery – the future of last mile.Takeaway food did not feature in the report as it was focused on parcel delivery

Enabling more businesses to deliver

When a business can reach more customers, it can serve smaller customer groups that are not well served today. For example, an outstanding take-away restaurant that specialises in some regional cuisine could thrive when it can access a larger market. While the benefit is difficult to quantify, some ACT businesses will be able to cut costs and increase profits by scaling up to serve such niches.

As discussed earlier in this section, some ACT businesses may be unable to offer last-mile delivery due to the cost of delivery methods available today. This is less of a problem for larger brands that typically have access to lower-cost delivery due to their scale. Drones could be a convenient, affordable option for new local businesses to participate in last-mile delivery and engage in e-commerce. This would facilitate a more productive, competitive business environment in the ACT.

CASE STUDY:
Kickstart Expresso

Paul and Liat Davis opened Kickstart Expresso in 2014 with a mission: to serve quality coffee to busy parents like themselves who might otherwise struggle with the logistics of getting young children in and out of the car. The family now runs a cafe in Dickson and a busy drive-through outlet in Fyshwick, offering wholesome, country-style food and premium Toby's Estate coffee.

Drive-through coffee is 95% of Kickstart's Fyshwick business, with the Davis family serving up to 400 drive-through orders each day to a loyal, predominantly local customer base of parents with kids in the car, tradespeople, and workers from local business.

Kickstart plans to open new drive-through outlets in the coming months both in the Canberra region and Sydney's western suburbs and is also looking into a drone delivery service that could deliver coffee directly to its customers, whether they be at home, at work, or outdoors. "It's all about improving the distribution and making it more convenient for people," Paul Davis explains.

In a drone delivery trial with Wing, Kickstart has been delivering a limited menu of coffee and breakfast items to 150 potential customers in the Bonython region. It makes up to 40 deliveries in a three-hour session, averaging 6 to 8 minutes from order to delivery.

According to the Davis family, premium coffee needs to be delivered within a certain timeframe for it to retain optimum quality and taste. Coffee should reach a customer within 10 minutes of them placing an order, and within 4 minutes of it being poured, they say.

Kickstart briefly considered delivering coffee by road through more traditional distribution sources but didn't trust current delivery methods to reliably deliver within its delivery timeframe due to traffic, congestion and a range of other factors.

Drones are faster and more reliable. Travelling above the traffic at speeds of up to 120 km/h, they could deliver hot coffee from a single location to 6,000 households. To put this into perspective, Kickstart currently serves 250 to 400 drive-through customers each day. While not all 6,000 households will purchase Kickstart's coffee, drone delivery has the potential to increase sales by making it more accessible.

3

BENEFITS FOR CONSUMERS

Reaching underserved populations

Delivery drones could have a significant effect on disabled, elderly, or otherwise homebound people in the ACT. While delivery does not replace the need for more inclusive public spaces and services, drones could provide an additional way for homebound people to independently purchase items from the comfort and safety of their homes.

As of 2015, there were more than 13,000 disabled and 6,700 elderly people living in the ACT who needed assistance with mobility, according to statistics from the ABS.[30] Drone delivery could play a role in serving these populations and improving their quality of life.

Saving time

Drones travel faster than all other forms of last-mile delivery, at a top speed of around 120 km/h based on current small-drone technology. Drones are also not impacted by traffic and can thus deliver products much faster than other ground vehicles. As a result, drones could reduce delivery times for instant deliveries by around 60-70% in 2030.

Further, drone delivery can save people time by replacing 4-5 million customer pick-up journeys. As noted earlier, the last mile accounts for around 25% of the total cost of retail purchases when we factor in the time taken for customers to drive to the shops, make their transactions and bring their purchases home. By replacing customer pick-ups, drones could save ACT consumers 3 million hours in 2030. This is equivalent to $70 million if valued at today's average earnings.[31] Additionally, drone deliveries give consumers greater control of their deliveries. The traditional experience of ordering a product and being uncertain of its arrival time will be replaced with live tracking that is accurate to a matter of seconds.

Reducing delivery fees

Current delivery fees paid by consumers on instant and same-day delivery can be very high, ranging from $5 for a food delivery to more than $30 for a courier delivery.[32] In many cases where delivery is not an option, such as a trip to the grocery store to pick up an extra onion, the time cost of picking up an item is also significant. Drones provide an option for consumers who want affordable instant or same-day delivery. Drones can be up to 80-90% less expensive than current methods of instant delivery. Even if only half of those savings are passed onto consumers, drones could save ACT households a total of $5 million in delivery fees in 2030.[33] Using drones to reduce the cost of delivery can enable consumers to spend less on delivery and more on the products they want.

Expanding product variety

Drones can increase the variety and range of instant products available to consumers. Consumers in the ACT could access three to four times the number of retailers that are currently available to them. The potential increase in range and choice is most salient in the case of food delivery, where time is sensitive and current delivery ranges are restricted.

In Canberra, consumers can only order food to be delivered from a maximum of 5 km away.[34] This restricts the options available to them. For example, some consumers can currently only receive food from 30-50 restaurants.[35] Meanwhile, there are over 150 restaurants within a 10 km radius that offer delivery services. Doubling restaurants' delivery range can thus give consumers access to three times the number of restaurants currently available to them.

In addition to increasing the physical range of products currently available for delivery, consumers are likely to benefit from further product diversity. Drones are likely to encourage new retailers to engage in delivery services and enable existing retailers to further specialise their products.

[30] ABS (2016), *Disability, Ageing and Carers, Australia: Summary of Findings, 2015*

[31] Average earnings per person of $23 per hour based on $34 average earnings for those employed in the ACT, adjusted for employment-to-adult-population ratio of 68%.

[32] Uber Eats, Deliveroo and Australia Post (2018) pricing

[33] Assumes consumers receive a fee decrease that is proportional to the reduction in underlying costs

[34] Current range of 4-5 km based on the Uber Eats and Deliveroo delivery radius on the 8th of October (2018) in the ACT, estimated based on the furthest restaurant available to deliver to Yarralumla.

[35] Restaurant count based on the number of restaurants available on Uber Eats and Deliveroo, accessed from Yarralumla on 8 October 2018. Potential increase in restaurants based on the number of restaurants and cafes currently delivering within a 10km radius of Yarralumla.

4

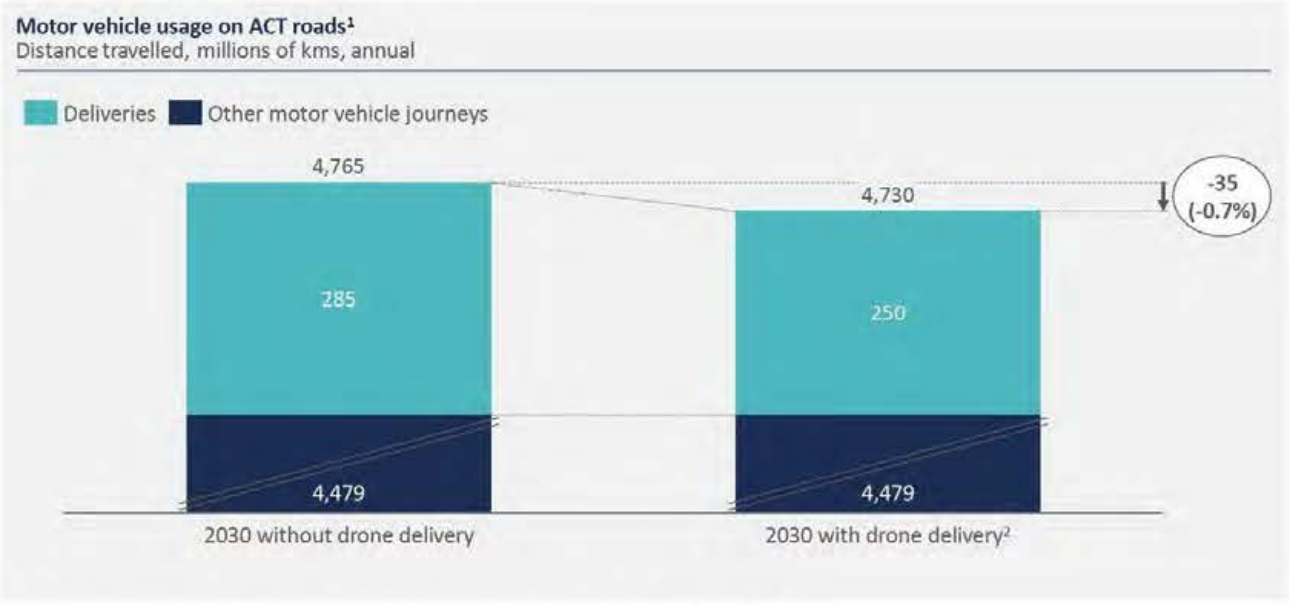
BENEFITS FOR SOCIETY

Reducing congestion

By reducing 35 million kilometres of delivery-related road travel, drones have the potential to reduce ACT road congestion. By 2030, it is estimated that delivery vehicles could be responsible for 6% of the kilometres travelled on ACT roads. Delivery vehicles are large, heavy and can disproportionately disrupt other road users. Parking and access to loading areas often delay and inconvenience other commuters and pedestrians. Delivery-related congestion in high-density areas has only increased in the era of ride-sharing and food delivery. By delivering up to 4-6% of transactions, drones could materially reduce the number of unnecessary vehicles on the road, reducing congestion and the associated greenhouse gas emissions.

EXHIBIT 10

Drone delivery could reduce vehicle road travel in the ACT by 35 million kilometers in 2030



1 2030 forecasts project 2017 results at 1.6% CAGR using historical CAGR on distance travelled by motor vehicles from 2010-16
2 Does not include drone deliveries that replace bike deliveries
SOURCE: ABS Survey of Motor Vehicle Use (2016), ABS Retail Trade (2017), ACT Treasury, AlphaBeta analysis

Reducing emissions

There is an urgent need for countries to lower their greenhouse gas emissions, which, if left at current levels, could have devastating effects on the world. The United Nations' Intergovernmental Panel on Climate Change has warned that several hundred million more people could face climate-related risks and poverty unless annual carbon emissions are halved by 2030.[36]

The ACT emits 1.7 million tonnes of greenhouse gas each year, or 4 tonnes per capita.[37] While overall emissions are relatively low relative to Australia as a whole (due to the lack of heavy industry), a high share (69%) of the ACT's emissions are derived from road transportation, versus 16% nationally. In particular, cars account for 44% of the ACT's emissions, versus only 8.3% nationally. This share is second only to Tasmania, and suggests that drones can play a significant role in reducing the ACT's emissions by replacing car journeys.

Drones are more environmentally friendly than today's transportation methods – which in the ACT, consist primarily of motor vehicle trips. A 2018 study (results shown in Exhibit 11) found that small drones cause the emission of 25 grams of greenhouse gas per last-mile delivery, versus 296-728 grams for delivery trucks or vans, after accounting for the economies of scale that these trucks can achieve by delivering multiple packages along their route. Personal pick-ups via car – which account for about 75% of transactions in the ACT in 2030 – are the worst polluters, emitting an average of 4,600 grams of greenhouse gas per trip.[38]

By using drones to fulfil 4-6% of its deliveries, the ACT could lower its greenhouse gas emissions by about 8,000 tonnes or the equivalent of carbon storage of almost 250,000 trees in 2030.[39]

[36] IPCC (2018), *Global Warming of 1.5°C*

[37] 2016 data, obtained from the Department of the Environment and Energy's National Greenhouse Gas Inventory

[38] While a shift to renewable energy would reduce these costs, it would also reduce emissions from drones. Modelling of carbon emissions per delivery obtained from Stolaroff et al. (2018), "Energy use and life cycle greenhouse gas emissions of drones for commercial package delivery", Nature Communications 9: 409. The estimates used in this paper exclude the fixed warehousing component (we consider the marginal emissions per vehicle trip only). The authors argue that a drone network requires more warehousing than other delivery modes.

[39] Greenhouse gas to carbon storage using EPA equivalency calculator (2018). Available at: https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator, Assumes 20-30 trees per acre.

EXHIBIT 11

Drones create ~99% lower emissions than deliveries by car and are cleaner than other delivery options

1 Example is based on a small quadcopter drone. Large drones exert more CO_2 per km, however small drones are the focus of this analysis
2 Excludes fixed emissions (such as those associated with warehousing) – it should be noted that a drone network may require more warehousing than a traditional delivery network (as argued by Stolaroff et al, 2018). Battery production is included as the battery incurs wear with each delivery
SOURCE: Stolaroff et al. (2018). Energy use and life cycle greenhouse gas emissions of drones for commercial package delivery. Nature Communications 9: 409

Reducing road accidents

There are almost 8,000 motor vehicle accidents a year on ACT roads.[40] Replacing 35 million vehicle-kilometres of road-based deliveries and pick-ups could result in 70 fewer accidents, including a small number that injure or kill native animals. Fortunately, ACT roads are relatively safe and have the nation's lowest road fatality rate.[41] Despite this, the potential injuries, time, inconvenience and economic cost of vehicle accidents is significant and should not be neglected.

[40] ACT Government (2016) ACT Road Crash Report
[41] BITRE (2016), Road Trauma Australia

5

APPENDIX – Detailed methodology

Constructing a scenario for the future role of drone delivery

The first step in estimating the benefits of drone delivery is understanding the number and types of deliveries that might be undertaken by drones in 2030. This was done by sizing last-mile delivery in 2017, growing it to 2030, and dividing it up into transactions of different characteristics based on a range of assumptions and data inputs. These transactions were further broken into those which are delivered today (versus picked up by customers), how that might change by 2030. Assumptions were then made about the potential uptake of drones in 2030.

Sizing the last-mile delivery sector

The first step in sizing last mile delivery was understanding the number of transactions today and how those might grow by 2030. For each retail category (see Exhibit 12), we began with total retail sales for the ACT from the Australian Bureau of Statistics. To obtain the number of transactions, the average order value for each retail category was applied. The number of transactions was then grown to 2030 volumes using a real GDP growth rate forecast.

EXHIBIT 12

Estimating the number of transactions in 2030

	2017 retail sales[1], $M	Average transaction size	Source	Number of transactions in 2017, M	Grown to 2030 at real GDP growth of ~2.0% p.a.[2]	Number of transactions in 2030
Takeaway food and beverages	420	37.5	• Finder.com.au (average order size on food delivery services)	8		10
Grocery	2,450	45	• Torchmedia (2007) Supermarket Insights, Woolworths Shopper Behaviour; inflated to 2017 currency using CPI	55		70
Pharmacy and medical	227	80	• Australia Post (2018) eCommerce Industry Paper	2.8		3.6
Household items	2,270	99	• Vend (2018) Retail Data 2018: 30 Retailer Statistics You Need to Know; average transaction size for relevant items[3]	23		30
						Total of ~110 million transactions in 2030

NOTE: Rows and columns may not sum to totals due to rounding
1 From ABS Retail Trade (2017)
2 Moderated down slightly from the average real GDP growth in the ACT since 2009 of 3.0% p.a. to be conservative and to reflect the rising share of services in Australia's economy. Data from ABS State Accounts (2016-17)

The number of transactions was then divided across three axes:

- Distance between merchant and customer
- Time sensitivity of the purchase (how quickly the item is required, i.e. instant, same day or standard)
- Size distribution of the transactions

The assumptions and inputs used to disaggregate the transactions are given in Exhibit 13.

EXHIBIT 13

Distance, time sensitivity and size assumptions for transactions

Distance assumptions

Distance from outlet	% of households
<1KM	10%
1-5KM	60%
5-10KM	25%
10+KM	5%

Required delivery timeframe assumptions (% of households)

Product category	Instant	Same day	Standard
Takeaway food & beverages	100%	N/A	N/A
Grocery	20%	60%	20%
Pharmacy and medical	33%	33%	33%
Household items[1]	2%	20%	78%

Size distribution of transactions

			Notes
Takeaway food and beverages	Small (<2.5kg)	85%	• 2.5kg payload assumed to capture 80-90% of today's food delivery
	Medium (2.5-6kg)	10%	
	Large (>6kg)	5%	
	Total	**100%**	
Grocery	Small (<2.5kg)	40%	• 2.5 supermarket visits per week (from Torchmedia, 2007) – assume one is weekly shop and other 1.5 are top-ups (distributed evenly between small and medium) • Convenience stores included in this category, and have smaller purchase sizes, so share of small transactions increased slightly to 40%
	Medium (2.5-6kg)	30%	
	Large (>6kg)	30%	
	Total	**100%**	
Pharmacy and medical	Small (<2.5kg)	80%	• 80% of items assumed to be small
	Medium (2.5-6kg)	15%	
	Large (>6kg)	5%	
	Total	**100%**	
Household items	Small (<2.5kg)	45%	• Based on distribution of transactions between different subcategories within household items (e.g. furniture, electrical, hardware, etc.), and the share of each that is likely to be heavy, medium or light
	Medium (2.5-6kg)	45%	
	Large (>6kg)	10%	
	Total	**100%**	

1 Shares from McKinsey (2016) Parcel delivery – The future of last mile
SOURCE: ABS Retail Trade (2018), Torchmedia (2007) Supermarket Insights, interviews with Wing, Google maps analysis

Once estimates were obtained for the number and types of transactions, it was necessary to break these down further into those that are delivered versus those that are picked up. For this we used a range of external inputs, as shown in Exhibit 14.

EXHIBIT 14

Estimating the share of transactions that are delivered

	2017		2030	
Takeaway food and beverages	19%	Average Australian online takeaway delivery market shares from finder.com.au and Morgan Stanley, expressed as share of total takeaway sales in Australia	40-50%	Existing growth and market estimates of online takeaway and delivery (Morgan Stanley 2018)
Grocery	3%	Share of transactions that are delivered (from Woolworths 2018 Annual Report)	25-35%	Engagement is industry sector experts. Market estimate and historic growth (Bankwest 2018). Delivery market estimate using predicted growth (Nielson 2018, Woolworths 2018, Livewire 2018)
Pharmacy and medical	2%	Ratio of online to total pharmacy sales in Australia (both obtained from IBIS world)	20-30%	Current market and anticipated growth (ABS 2017, Pharmafile 2016). Estimated delivery and growth (Australia Post 2018)
Household items	8%	E-commerce as a share of total retail in Australia, obtained from Australia Post (2018) E-commerce Industry Paper	25-35%	Current market and historic growth (Australia Post 2018). Current online sales and expected growth (Australia Post 2018, UBS 2018)

The resulting dataset is a rich breakdown of transactions – for both today and 2030 – by weight, distance, time-sensitivity, and current mode (delivery versus pickup). That is, for each cell in the matrix in Exhibit 15, we know the number of transactions that are delivered versus picked up (and an educated guess of what this might be in 2030).

EXHIBIT 15

A dataset was constructed that provides a detailed breakdown of current and future retail transactions

Number of transactions by type

#

Weight	Distance	Required delivery timeframe		
		Instant delivery	Same day	Standard
<2.5kg	<1km			
	1-5km			
	5-10km			
	10km+			
>2.5kg	<1km			
	1-5km			
	5-10km			
	10km+			

For each cell, the dataset contains the number of transactions, split by:

- Retail product category
- Whether the transactions are delivered or picked up by the customer

These figures are estimated both 2017 and for 2030 based on a range of data sources and assumptions

SOURCE: AlphaBeta analysis

Establishing a reasonable scenario for drone uptake

For each cell in Exhibit 15, it was necessary to form a view on the potential uptake of drone delivery by 2030. Educated assumptions were made about the share of current deliveries and pickups that could be migrated to drone delivery.

Different assumptions were made for each retail category to reflect their different suitability for drone delivery (for example, uptake is assumed to be higher for takeaway given it is currently the primary use case for drone delivery in the Wing ACT trials).

The result of these assumptions is provided in Exhibit 16. Note that the assumptions were made at a more detailed level and aggregated to this level for presentation.

EXHIBIT 16

Assumptions were made about the potential uptake of drone delivery for the relevant transaction types

Assumed share of transactions delivered by drone in 2030

%

Weight	Distance	Required delivery timeframe		
		Instant delivery	Same day	Standard
<2.5kg	<1km	10-15%	4-6%	
	1-5km	30-35%	8-12%	
	5-10km	24-28%	8-12%	
	10km+			
>2.5kg	<1km			
	1-5km			
	5-10km			
	10km+			

Factors influencing the share of deliveries undertaken by drone include:

- **Distance:** Very close transactions are less likely to be delivered due to ease of pickup
- **Time sensitivity:** Drone uptake is higher for instant transactions due to the higher speed and lower cost of drones versus other methods of instant delivery
- **Mix of current delivery modes:** Delivered transactions are more likely to be replaced by drone than pickups as the latter requires a bigger behaviour change from consumers

SOURCE: AlphaBeta analysis

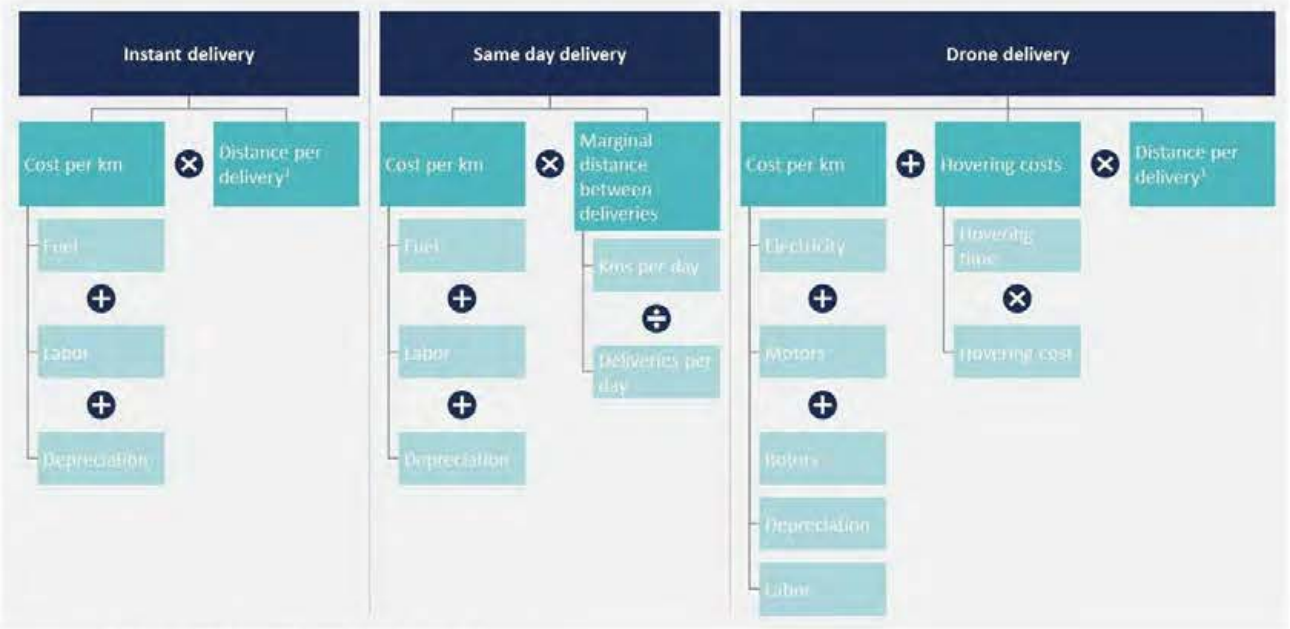
Estimating the change in delivery costs

Estimating the cost of current and future delivery modes

Delivery costs of vans, cars, bikes and drones were considered in this report and defined as the marginal cost related to the transportation of products. For current modes of delivery, this includes labour, depreciation and fuel expenses. For drone delivery, a bottom up view of drone costs was estimated to consider component costs such as the motor, rotor, batteries, labour and electricity (see Exhibit 17). The marginal delivery cost was calculated for all four modes across each distance category and three delivery periods (instant, same day and next day). AlphaBeta's cost saving estimates are consistent with other external views (see Exhibit 18).

EXHIBIT 17

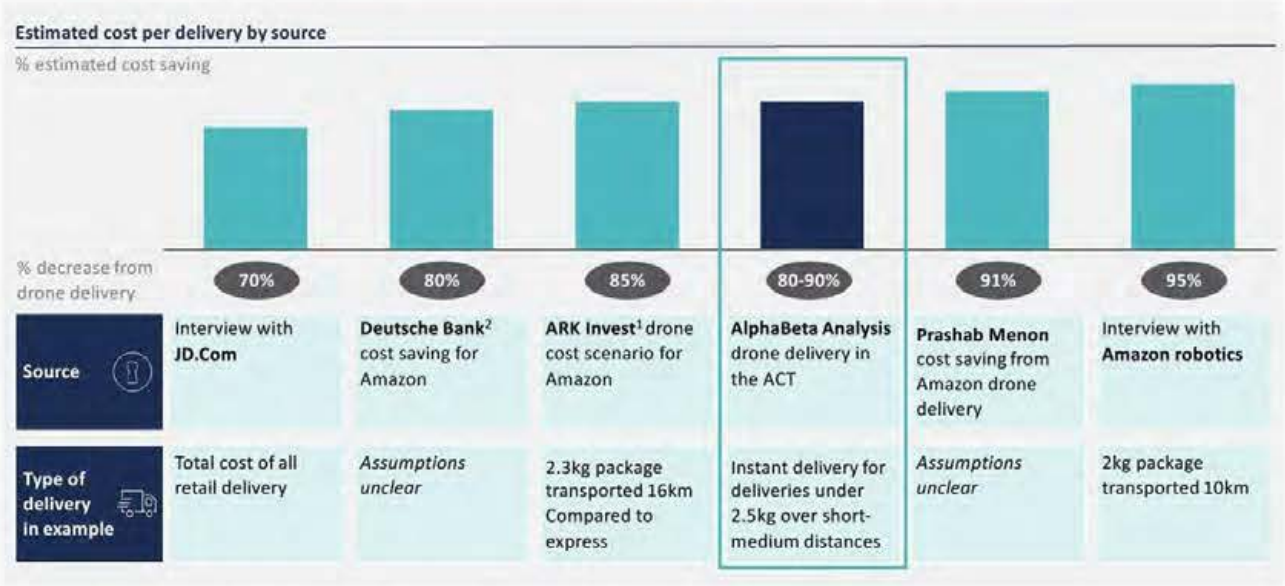
Estimating the cost of instant, same day and drone delivery



Distances were calculated for each distance category: <1km, 1-5km, 5-10km.
1. Estimated delivery distance equal to return of each distance category.

EXHIBIT 18

The estimated drone cost savings are consistent with external views



NOTE: Cost saving estimates have been collected from desktop research. Assumptions are not always clear and vary by source of analysis. 1 Labour costs are a high share of potential drone delivery costs, 60%
2 Cost saving from a combination of delivery automation, drones and robots
SOURCE: Desktop research, ARK Invest, Business Insider, University of California Berkeley, Ivey Business Review

Estimating the cost of instant delivery

Cost modelling for instant delivery used a different method to same-day and next-day delivery. Instant delivery calculations assumed that food delivery and private couriers only deliver one parcel at a time. These deliveries are often point to point and the estimated marginal cost is the distance between the point of origin and destination. Thus, the distance travelled per delivery is similar to drones, making the cost comparison straightforward. To account for road design and traffic, a discounted average delivery speed was assumed for current methods of delivery. Assumptions related to speed, distance and route activities were tested with industry experts. The high-cost nature of point-to-point delivery meant that instant delivery costs were significantly higher than same-day and next-day deliveries. This is consistent with market price estimates from Uber Eats, Zoom2u and Australia Post.

Estimating the cost of same-day and standard delivery

To ensure an accurate cost comparison with drone delivery, same-day and next-day delivery cost calculations considered economies of scale and optimised delivery routes. Modes that use route delivery have a different marginal cost structure to instant, point-to-point deliveries, where the marginal cost per delivery is the cost between the previous drop and the next drop, as opposed to the cost from point of origin to point of destination.

Given the scale and efficiency of the standard parcel delivery sector, conservative assumptions were made to factor in high economies of scale. This was done by varying the marginal distance per delivery across each different distance length. The further the delivery destination was from the point of origin (i.e. shop or parcel depot), the greater the additional distance per parcel.

Table 1: Inputs and sources for calculating current delivery costs

Area	Metric	Source
Marginal cost of delivery	Fuel costs	▪ Australian petrol prices (2018) ▪ Carsales: Mercedes Sprinter and Toyota Corolla (2016)
	Labour costs	▪ Stats Monkey (2014)
	Labour (pick up) costs	▪ ABS (2018) Average hourly national wage
	Depreciation costs	▪ Carsales: Mercedes Sprinter and Toyota Corolla (2016) ▪ ATO (2018) Depreciation of vehicles
	Trip speed	▪ Industry expert interviews
Distance of marginal trip	Distance travelled per trip by vehicle	▪ Roy Morgan (2013) Australian motorists drive an average 15,530km per year ▪ Industry expert interviews
	Parcels delivered per day	▪ AlphaBeta analysis ▪ Industry expert interviews

Estimating the cost of drone delivery

The novel nature of drone delivery has made it relatively difficult to determine potential costs. To solve for the dearth of available information, drone costs referenced in this report represent a bottom up approximation of the individual components of a drone. To ensure the potential of drones is realistic, conservative estimates of package load, range speed and overall cost were used to calculate the potential marginal cost of drone delivery across different distances.

Table 2: Inputs and sources for calculating drone delivery costs

Area	Metric	Source
Marginal cost of delivery	Electricity and battery costs	▪ Jenkins et.al (2017) Forecast of commercial UAS package delivery market ▪ Industry expert interviews
	Motor costs	
	Rotor costs	
	Depreciation costs	
	Labour costs	▪ Indeed (2018). Average salary of commercial pilot
Operating trip assumptions	Hovering time	▪ Jenkins et.al (2017) Forecast of commercial UAS package delivery market ▪ Industry expert interviews
	Speed	
	Flight time	
	Trips per day	

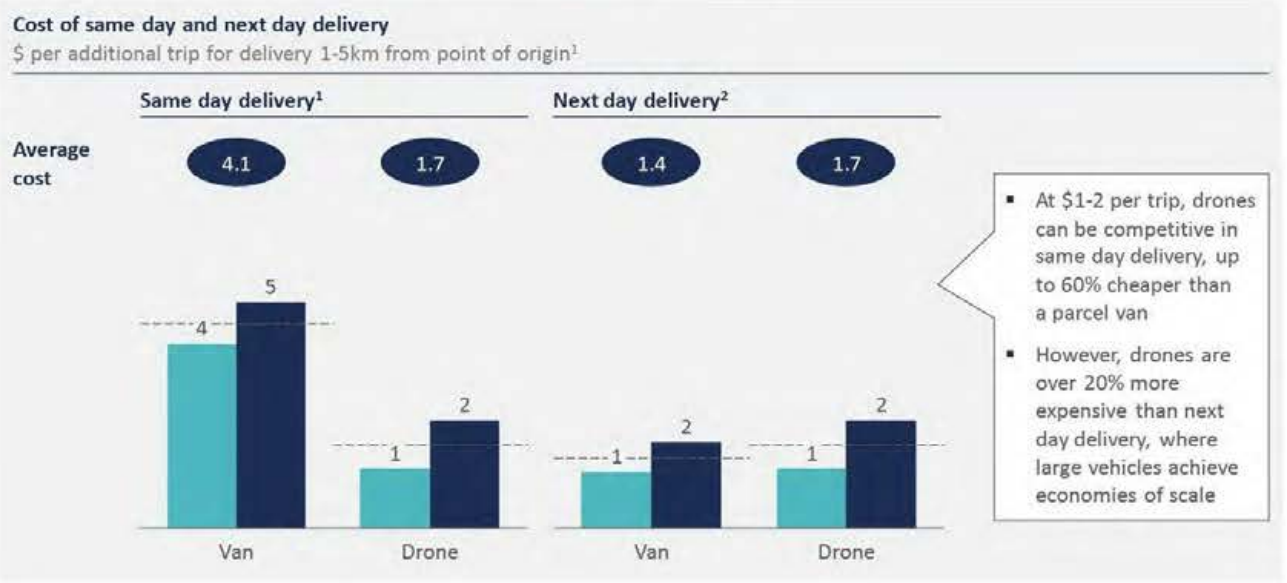
EXHIBIT 19

At $1-2 per trip, drones could be 89% cheaper than current instant delivery

1 Assumes an instant delivery return trip of 3-10 km
SOURCE: AlphaBeta analysis

EXHIBIT 20

Drones become less affordable when competing with large vehicles that gain economies of scale from delivering multiple parcels



1 Assumes additional delivery distance on existing route is 0.9-1.1 km per delivery
2 Assumes additional delivery distance on existing route is 0.4-0.6 km per delivery
SOURCE: AlphaBeta analysis

Estimating benefits for local businesses

Reducing delivery costs

Using the cost estimation derived earlier for drones versus current modes of delivery, the potential reduction in delivery costs to businesses was estimated as shown in Exhibit 21.

EXHIBIT 21

Calculating the reduction in last-mile delivery costs for ACT businesses

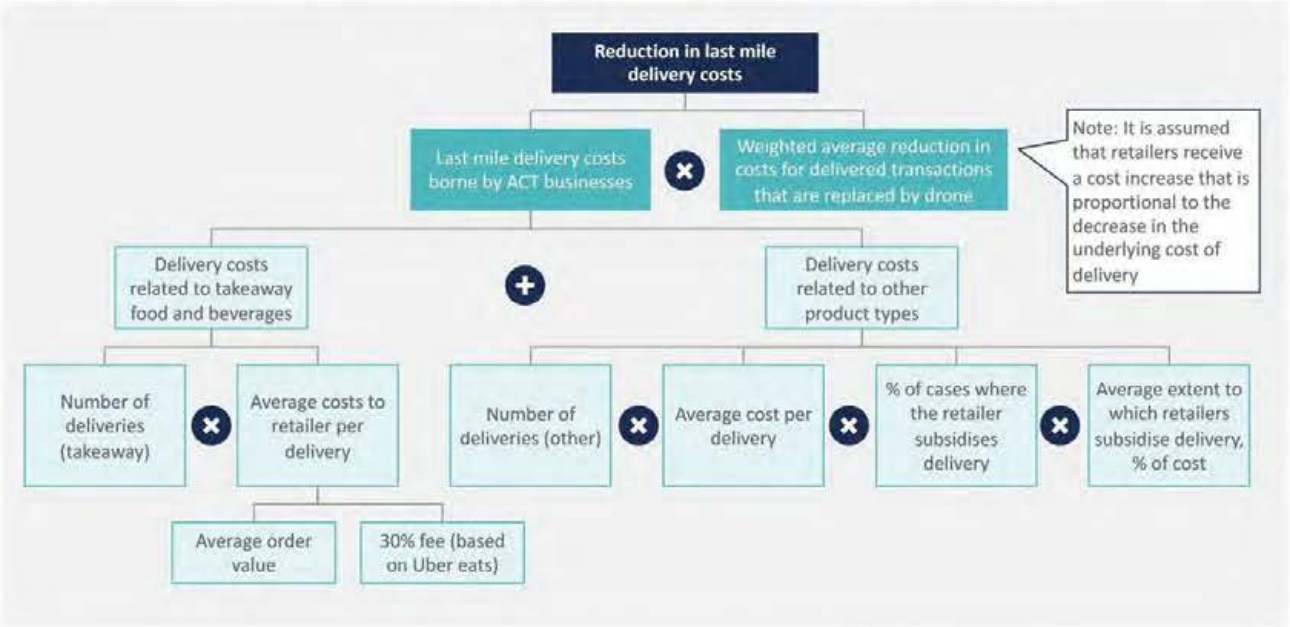


Table 3: Inputs and sources for calculating reduction in delivery costs

Area	Metric	Source
Weighted average reduction in costs for delivered transactions that are replaced by drone	Weighted average cost reduction (%)	▪ Estimated using the results obtained in earlier sections of this appendix (cost of drones, cost of current methods of delivery and current mix of transaction types
Last mile delivery costs borne by ACT consumers	Number of deliveries (takeaway)	▪ Obtained from earlier analysis (sizing the last mile sector in 2030)
	Number of deliveries (other)	▪ As above, but for non-takeaway transactions
	Average cost per delivery	▪ Obtained from earlier analysis of the cost of delivery for each mode of transport, combined with the current mix of transaction types
	% of cases where the retailer subsidises delivery, and amount of subsidisation	▪ Analysis of mystery shopping data presented in Copenhagen Economics (2016), Principles of e-commerce delivery prices

Generating more sales

Reducing costs to consumers (via lower delivery fees and pick-up travel costs) has the potential to generate more transactions in the ACT that would otherwise not have occurred. This effect was estimated as in Exhibit 22.

EXHIBIT 22

Calculating the increase in total ACT sales due to less expensive and more convenient delivery

1 Includes takeaway but excludes meals consumed at restaurants

Table 4: Inputs and sources for calculating the increase in sales

Area	Metric	Source
2017 total retail trade	Total retail trade in the ACT in 2017 ($M)	▪ ABS Retail Trade (2018)
Per cent increase in sales	Cost of purchases	▪ ABS Retail Trade (2018)
	Delivery fees and customer pickup costs with drones	▪ Obtained from earlier analysis (see "Estimating the change in delivery costs" in this appendix)
	Delivery fees and customer pickup costs without drones	▪ Obtained from earlier analysis (see "Estimating the change in delivery costs" in this appendix)
	Price elasticity of demand	▪ Elasticity of 0.7, based on: - Supermarkets elasticity of 0.6, obtained from Andreyeva (2010) The Impact of Food Prices on Consumption: A Systematic Review of Research on the Price Elasticity of Demand for Food. American Journal of Public Health (AJPH) - Adjusted upwards slightly to reflect other product categories (takeaway and household items) that are likely to be more price-elastic than groceries This elasticity was considered conservative, because we do not measure the intangible value placed on increased convenience and greater choice, which would also have a positive impact on transaction activity.

Expanding market reach

A key benefit of drones for both retailers and consumers is the expansion of delivery range. To quantify this benefit, this report investigated how an increase in delivery range could impact ACT retailers and consumers.

To understand the retailer benefit, one Canberra central restaurant was selected, and its current delivery range was observed using online food delivery websites. This analysis indicated that the average maximum distance of food delivery was approximately 5 km. Using ABS data, it was possible to estimate the number of households within the current delivery radius and the potential increase if the delivery radius was expanded to 10 km.

Table 5: Inputs and sources for calculating expansion of market reach

Area	Metric	Source
Households available in delivery range for a Canberra central restaurant	Current range of restaurant delivery	▪ Delivery radius of Uber Eats and Deliveroo for a specific restaurant (2018)
	Number of current and potential households in range	▪ Census population in relevant SA3 locations, ABS Census (2016)

Estimating benefits for consumers

Reducing delivery fees

The potential reduction in delivery fees to consumers was estimated using the approach shown in Exhibit 23.

EXHIBIT 23

Calculating the reduction in last mile delivery fees for consumers

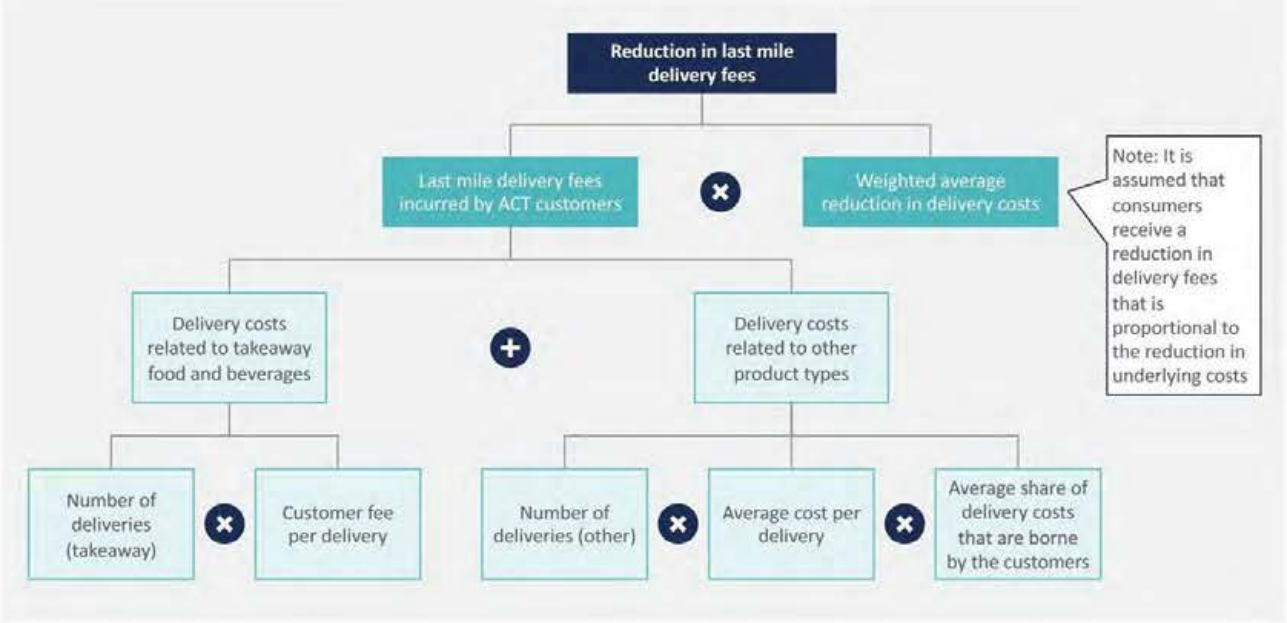


Table 6: Inputs and sources for calculating consumer delivery fee savings

Area	Metric	Source
Weighted average reduction in costs for delivered transactions that are replaced by drone	Weighted average cost reduction (%)	▪ Estimated using the results obtained in earlier sections of this appendix (cost of drones, cost of current methods of delivery and current mix of transaction types
Last mile delivery costs borne by ACT consumers	Number of deliveries (takeaway)	▪ Obtained from earlier analysis (sizing the last mile sector in 2030)
	Number of deliveries (other)	▪ As above, but for non-takeaway transactions
	Average cost per delivery	▪ Obtained from earlier analysis of the cost of delivery for each mode of transport, combined with the current mix of transaction types
	% of cases where the retailer subsidises delivery	▪ Analysis of mystery shopping data presented in Copenhagen Economics (2016), Principles of e-commerce delivery prices
	Average share of delivery costs that are borne by the customer (% of cost)	▪ Analysis of mystery shopping data presented in Copenhagen Economics (2016), Principles of e-commerce delivery prices

Saving time

The potential reduction in delivery fees to consumers was estimated using the approach shown in Exhibit 23.

Estimating delivery times for each mode of transportation

This paper estimated and compared delivery times across delivery modes (van, car, bike, drone) and periods (instant, same day and next day). This analysis focused on last-mile instant delivery. Delivery distances were matched to four typical categories (less than 1 km, between 1-5 km, between 5-10 km, and over 10 km). The speed assumptions necessary to calculate time taken per delivery were estimated for each mode of delivery using research and industry expert interviews.

Table 7: Inputs and sources for calculating delivery times

Area	Metric	Source
Current vehicle speeds	Average speed of instant delivery	▪ Industry expert interview ▪ AlphaBeta analysis
	Average speed of same day delivery	▪ Australia Post, Zoom2u, Coles, Local flower delivery (2018) ▪ Industry expert interview
Drone delivery speeds	Average speed of trip by deliver distance	▪ Industry expert interview ▪ AlphaBeta analysis

Estimating the reduction in delivery times for consumers

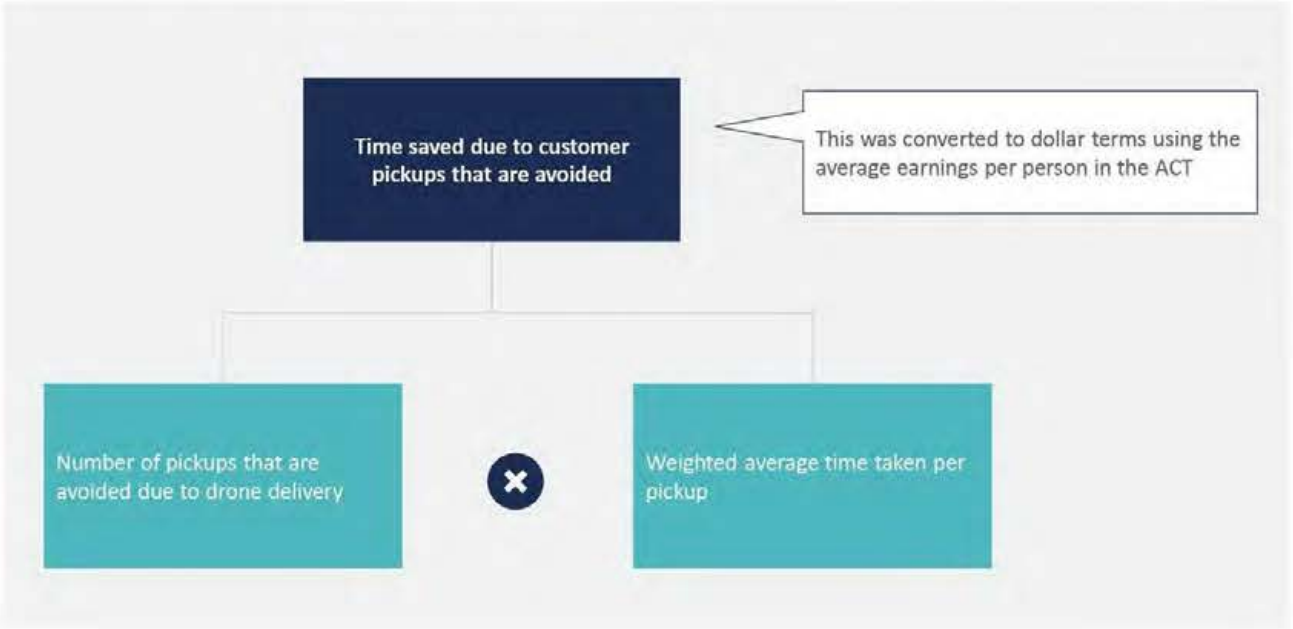
The reduction in delivery times was calculated as the weighted average difference in delivery times between drones and current delivery modes for relevant transaction types (see above for sources). For example, for instant deliveries (which are currently delivered using ground transportation, e.g. by Uber Eats), the weighted average delivery time reduction is 60-70%.

Estimating the time savings due to replacing customer pick-ups

The time saved by replacing customer pick-up journeys was estimated using the approach shown in Exhibit 24.

EXHIBIT 24

Calculating time saved due to pickups that are avoided due to drone delivery



Expanding product variety

See earlier section on "Expanding market reach". A similar method was used to estimate the potential range expansion benefits to consumers. This involved selecting a test delivery destination and observing the furthest restaurants available for delivery. Yarralumla was selected as the test location due to it currently being well serviced by food delivery. The maximum average delivery distance was also 5 km. Using online food delivery websites, it was possible to map restaurants that offer delivery in Canberra and observe the number within 5 km and 10 km of Yarralumula. The difference indicated the potential expansion in food delivery choice available to consumers.

Table 8: Inputs and sources for calculating expansion in product delivery

Area	Metric	Source
Restaurants available for a consumer	Current range of restaurant delivery	▪ Delivery radius of Uber Eats and Deliveroo for a specific address in Yarralumla (2018)
	Number of current and potential restaurants in range	▪ Delivery radius of Uber Eats and Deliveroo from a specific restaurant (2018)

Estimating benefits for society

Societal benefits encompass a broad range of benefits, including some indicators that are difficult to measure or attribute directly to drone delivery such as lives saved by emergency medical delivery and boosts in innovation. As such, this report estimates the environmental and safety benefits from drone delivery that directly result from having fewer motor vehicles on the road. While other benefits are often not conducive to comprehensive quantitative measurement, they are important contributions to the ACT that can be observed and described.

Emissions reduction from drone delivery

The potential emissions reduction from drone delivery is the difference between the emissions avoided by reducing the number of motor vehicles on the road and the additional emissions produced by drones. Emissions avoided was estimated by calculating the total last-mile distance travelled by motor vehicles that would be replaced by drone delivery, multiplied by the emissions per km by vehicle type (namely cars and light commercial vehicles). Additional emissions produced by drones was estimated in the same way, by using the rate of emissions per trip from drone delivery. The average emissions per trip for drone delivery versus other methods were modelled by Stolaroff et al. (2018).

Accidents avoided from drone delivery

The potential number of accidents avoided by drone delivery as a result of fewer vehicles on roads is calculated by using the current rate of accidents per km multiplied by the reduction in distance travelled by road vehicles including bicycles. This estimate is likely to be conservative as road accidents and crashes have proven to be underreported in official data.

Table 9: Inputs and sources for calculating societal benefits

Area	Metric	Source
Emissions reduction from drone delivery	Total emissions from motor vehicles by vehicle type	▪ Department of Environment and Energy
	Total distance travelled by motor vehicles by vehicle type	▪ ABS Survey of Motor Vehicle Use (2016)
	Emissions per trip for drone delivery and other methods	▪ Stolaroff et al. (2018) Energy use and life cycle greenhouse gas emissions of drones for commercial package delivery
Road accidents prevented from drone delivery	Total number of road crashes	▪ ACT Government (2016) Road Crash Report
	Total distance travelled by vehicle type	▪ ABS Survey of Motor Vehicle Use (2016)
Road vehicles avoided from drone delivery in distance travelled	Primary mode of transport for delivery and pick-up by consumer type (distance from retailer, package size, timeliness of delivery)	▪ AlphaBeta analysis ▪ Industry expert interviews
	Average distance travelled per trip by consumer and vehicle type	▪ AlphaBeta analysis ▪ Google maps (2018) ▪ Refer to cost of delivery analysis in this appendix
	Average number of trips replaced by drone delivery by consumer type	▪ ABS Retail Trade (2017) ▪ ACT Treasury
	Compound annual growth rate of motor vehicle kilometres travelled	▪ ABS Survey of Motor Vehicle Use (2010-2016)

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strategy x economics

ACT Government

Andrew Barr MLA

Chief Minister
Treasurer
Minister for Social Inclusion and Equality
Minister for Tourism and Special Events
Minister for Trade, Industry and Investment
Member for Kurrajong

EMAILED

18/29555

2.2(a)(ii)

Thank you for your letters of 30 September, 5 October and 10 October 2018 about the Project Wing Bonython drone delivery trial. I am also responding on behalf of Minister Gentleman and the Government.

Project Wing are trialling an entirely new business model that utilises drones that are functionally different from most recreation drones that the community are familiar with. This trial provides an opportunity for the ACT and national regulators (including the Civil Aviation Safety Authority (CASA) and Australian Privacy Commissioner) to learn about challenges and opportunities presented by emerging delivery drone technology, including community concerns about noise, privacy and safety.

The ACT Government's role in the trial has been to facilitate a temporary licence for the use of a site in Greenway for the take-off and storage of drones. CASA, the entity responsible for regulating the safe operation of drones throughout Australia, has also provided Project Wing approval for the trial in Bonython.

The ACT Government licence for the trial is subject to Project Wing complying with the Australian *Privacy Act 1988*. The Privacy Principles under the Act impose strict conditions on both the security and permitted use of personal information.

The licence also limits the operating hours of the trial to 7am to 8pm Monday to Saturday and 8am to 8pm on Sunday. This is similar to restrictions placed on other activities that create noise in suburban areas like lawn mowing. I understand feedback from residents has led Project Wing to consider changing their hours of operation. In addition to this I am informed by Project Wing that they have modified delivery routes as well as slowed down their drones, to reduce the noise impact further. Data from the trial has also helped improve the drones, making them quieter. These drone will be demonstrated in the coming weeks.

As a condition of CASA's approval and the ACT Government licence, Project Wing have kept CASA and the ACT Government informed about potential safety incidents. From the start of the service in

ACT Legislative Assembly
London Circuit, Canberra ACT 2601, Australia GPO Box 1020, Canberra ACT 2601, Australia
Phone +61 2 6205 0011 **Fax** +61 2 6205 0157 **Email** barr@act.gov.au
@ABarrMLA AndrewBarrMLA actchiefminister
CANBERRA

Bonython in July 2018 to September 2018, there have been no safety incidents. While a number of aircraft have landed away from the take-off site while making deliveries, Project Wing have indicated that these were controlled landings initiated by safety systems. These safety systems are a precautionary measure that trigger slow and controlled landings and mitigate risks to people and property.

Following community concerns about noise, privacy and safety relating to drone use in the ACT, the Government has commenced considerations on the appropriateness of a specific ACT regulatory framework for the use of drones. The Project Wing's monthly reports on the status of the trial and community commentary on the operation of drones in the ACT (not just the Bonython drone delivery services) are informing this work. Your feedback about the Project Wing trial will be considered as part of this body of work.

I also note your specific questions on the status of the Project Wing Bonython trial and the company's intention to seek another site from which to operate in the ACT.

Project Wing were granted a temporary licence for a Greenway site in February 2018, this licence expires on 15 February 2019. The licence may be extended further subject to a Development Application, although Project Wing have indicated that for their future plans they may prefer to relocate to an industrial area and deliver to more locations.

Further, Project Wing are able to purchase or lease premises suitable for its needs, like any other business. It is a business decision of Project Wing's to relocate and provide its services to other destinations. Bodies such as CASA will need to provide approvals for the operation of their service from any new locations under current Commonwealth regulations. In relation to your question about whether other companies may be able to operate in the ACT, this would be subject to receiving appropriate approvals and demonstrating capacity to comply with Commonwealth safety regulations administered by relevant authorities including CASA.

Project Wing have undertaken a range of community engagement activities prior to and during the trial. How Project Wing wish to present the outcomes of the Bonython trial and its engagements with community is their business decision. The ACT Government has not, and does not, intend on undertaking community engagement on behalf of Project Wing. It is not usual for the ACT Government to undertake community engagement on behalf of a private company.

Project Wing have indicated that feedback like yours is important to informing the outcomes of the trial. More information on how to contact Project Wing can be found on their website: https://x.company/intl/en_au/wing/australia/.

I understand that EPSDD is currently processing a Freedom of Information request for information relating to any agreement that relate to Project Wing trials in Bonython and Royalla. I hope that this process provides you confidence in the ACT Government's commitment to the principles of transparency.

Thank you again for contacting me with your concerns. I trust this information is of assistance.

Yours sincerely

Andrew Barr

Andrew Barr MLA
Chief Minister

09 NOV 2018

Schedule 1 - 1.2 LPP

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From:"McCredie, Andrew" <Andrew.McCredie@act.gov.au>
Sent:21/02/2019 10:39 AM
To:"Campbell, Morgan" <Morgan.Campbell@act.gov.au>;"Potter, Chantel" <Chantel.Potter@act.gov.au>
Cc:"Starick, Kate" <Kate.Starick@act.gov.au>;"Webster, Eddy" <Eddy.Webster@act.gov.au>;"Ives, Kieran" <Kieran.Ives@act.gov.au>;"Hassett, Glen" <Glen.Hassett@act.gov.au>;"Harrison, Craig" <Craig.Harrison@act.gov.au>
Subject:RE: HPE Content Manager CMTEDD - CM - Content : CM18/91446 : Chief Ministers Talkback Drone Regulation - 2019 [SEC=UNCLASSIFIED]

Hi Chantel

Looks good. Morgan is the expert on internal clearance so I won't add to what he has said.

On the content itself, I think there should be a high level talking point for the Chief saying something like: Project Wing understands that the drone service will only be a success if it can win community acceptance. To address community concerns the drone is equipped with a low resolution camera just used for navigation in response to privacy concerns, the drone's propulsion system has been adjusted to lower noise irritation and smart routing has been introduced to lower the flight time over residences. Of course perhaps these measures taken by Wing may not satisfy everyone, and perhaps there are other concerns residents have, but overall I have been impressed by Wing's willingness to listen and respond appropriately to community concerns.

Andrew

-----Original Message-----
From: Campbell, Morgan
Sent: Wednesday, 20 February 2019 4:37 PM
To: Potter, Chantel <Chantel.Potter@act.gov.au>; McCredie, Andrew <Andrew.McCredie@act.gov.au>
Cc: Starick, Kate <Kate.Starick@act.gov.au>; Webster, Eddy <Eddy.Webster@act.gov.au>; Ives, Kieran <Kieran.Ives@act.gov.au>
Subject: RE: HPE Content Manager CMTEDD - CM - Content : CM18/91446 : Chief Ministers Talkback Drone Regulation - 2019 [SEC=UNCLASSIFIED]

From an ED perspective, on internal clearance, I usually provide CM talkback briefs to Kareena for noting and they go on the dir/exec dir clearance. If it's all cleared from your end I don't think it matters whether it goes to Steph or Max.

Re. Minister Gentleman's office - Kieran might have a perspective on whether they would prefer to pre-clear? Giving he is Min assisting the CM, you wouldn't think they would want to clear in advance... And now that I think of it, I don't think we've ever had any of our other Ministers pre-clear briefs in their portfolio for CM talkback.

-----Original Message-----
From: Potter, Chantel
Sent: Wednesday, 20 February 2019 4:31 PM
To: McCredie, Andrew <Andrew.McCredie@act.gov.au>
Cc: Campbell, Morgan <Morgan.Campbell@act.gov.au>; Starick, Kate <Kate.Starick@act.gov.au>; Webster, Eddy <Eddy.Webster@act.gov.au>; Ives, Kieran <Kieran.Ives@act.gov.au>
Subject: HPE Content Manager CMTEDD - CM - Content : CM18/91446 : Chief Ministers Talkback Drone Regulation - 2019 [SEC=UNCLASSIFIED]

Hi,

We have put together this brief but thought it might better come throough ED with clearance from minister assisting the CM? How should we manage the clearance, and do you think it is needed? Closing date for submissions to the inquiry are 22 Feb - which is the same date so might be picked up.

Thanks,
Chantel

------< HPE Content Manager record Information >------

Record Number : CM18/91446
Title : Chief Ministers Talkback Drone Regulation - 2019

From:"Clark, Rebecca" <RebeccaM.Clark@act.gov.au>
Sent:07/03/2019 2:30 AM
To:"Webster, Eddy" <Eddy.Webster@act.gov.au>
Subject:RE: Regulation of noise levels for unmanned aerial vehicles for Drones [SEC=UNCLASSIFIED]
Attachments:RE: Drone Noise Complaint [SEC=UNCLASSIFIED]

Hi Eddy

Sorry for the late reply – yesterday was my fortnight Wed off.

Yes – I am somewhat bemused by Air Services submission – it seems everything is outside their purview unless they want it, and then it is inside their purview. However, technically, they are correct.

Having said that, the Chicago Convention anticipates UAVs, so at some future point, the Chicago Convention schedules and annexs may be amended to allow for the full integration of RPAS into controlled air space – it's a 'watch this space' type outcome.

It could be dealt with by a super duper quick amendment to the EPA to remove the exclusion, or to clarify the exclusion of Cth aircraft DOES NOT include RPAS.

Hope that gives you a starting point for further research.

From: Webster, Eddy
Sent: Wednesday, 6 March 2019 2:22 PM
To: Clark, Rebecca <RebeccaM.Clark@act.gov.au>
Cc: Potter, Chantel <Chantel.Potter@act.gov.au>
Subject: Regulation of noise levels for unmanned aerial vehicles for Drones [SEC=UNCLASSIFIED]
Importance: High

Hi Rebecca,

I'm just wondering if I could pick your brain in relation to if you remember any national regulations that pertain to the noise of unmanned aerial vehicles or any government commitments made in relation to this?
As Airservices Australia have provided a submission to the Inquiry into drone delivery systems which states that only noise levels in regards to manned aerial vehicles are regulated, not unmanned aerial vehicles.
As this is time critical, I would require this information by Friday this week the 8th if possible and if you have any further input on this matter.

Thanks in advance,

Eddy Webster | Policy Officer
Regulation and Productivity Team | Economic and Regional Policy Branch | Policy and Cabinet Division
Chief Minister, Treasury & Economic Development | ACT Government
Phone: 6207 5975| Email: eddy.webster@act.gov.au
Level 4, Canberra Nara Centre | GPO Box 158 CANBERRA ACT 2601| www.act.gov.au

ACT Government
Chief Minister, Treasury and Economic Development

I acknowledge the Ngunnawal nation as traditional custodians of the ACT and honour the Elders both past and present. I acknowledge and respect their continuing culture and the contribution they make to the life of this city and this region.

From:"Clark, Rebecca"
Sent:25/09/2018 4:22 AM
To:"Webster, Eddy" <Eddy.Webster@act.gov.au>
Cc:"Stankevicius, Adam" <Adam.Stankevicius@act.gov.au>;"Potter, Chantel" <Chantel.Potter@act.gov.au>;"Ives, Kieran" <Kieran.Ives@act.gov.au>
Subject:RE: Drone Noise Complaint [SEC=UNCLASSIFIED]

Hi Eddy

I have had a brief look at the legislation concerning drone noise.

The *Air Navigation (Aircraft Noise) Regulations 2018* (Cth) requires noise certification for certain aircraft – that is, subsonic jet planes, propeller-driven planes over 5,700 kg, supersonic planes and helicopters. For those aircraft not specified in the Schedule, if standards for aircraft noise for aircraft of that class exist in the Annex (Annex 16) to the Chicago Convention (*Convention on International Civil Aviation*), they would also require a certificate. Unmanned aerial vehicles do not seem to be captured by the Schedule or the Annex.

However, CASA released an Advisory Circular on 7 August 2018 which states:

3.6.5 Noise abatement
3.6.5.1 RPA operators are subject to applicable local noise abatement requirements—such as operating hour limitations and flight path/altitude restrictions—in the area of operation. Details of noise abatement procedures, including 'Fly Neighbourly' areas, are published in ERSA.
Note: Local authorities may have additional noise abatement by-laws.

So, we're back where we started. However, it is important to note here that *Civil Aviation Safety Regulation* Part 101 - Unmanned aircraft and rockets, which consolidates the rules governing UAVs, is currently subject to a post-implementation review. CASA is currently out on consultation on this project.

This appears to be a gap in ACT regulations, which may be addressed through the Reg Reform project.

Kind regards

Rebecca Clark | Policy Officer
☎+61 620 72107 | Email: rebeccam.clark@act.gov.au
Strategic Policy and Cabinet | Chief Minister, Treasury and Economic Development | ACT Government
Level 4, Canberra Nara Centre | GPO Box 158 CANBERRA ACT 2601 | www.act.gov.au

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Please consider the environment before printing this email.

From: Webster, Eddy
Sent: Monday, 24 September 2018 4:48 PM
To: Clark, Rebecca <RebeccaM.Clark@act.gov.au>
Subject: Drone Noise Complaint [SEC=UNCLASSIFIED]
Importance: High

Hi Rebecca,

I have spoken to EPA in Access Canberra, and I have incorporated the required adjustments into the Ministerial reply for your review. There seems to be a misinterpretation over if the *Environment Protection Act 1997* and *Environment Protection Regulation 2005* really do cover drone noise, particularly as Section 8 of the Act specifies that aircraft are excluded, and according to EPA, drones do qualify as an aircraft and are excluded.

Please let me know your thoughts?

Thanks,

Eddy Webster | Policy Officer
Government & Regulatory Reform | Policy & Cabinet
Chief Minister, Treasury & Economic Development | ACT Government
Phone: 75975| Email: eddy.webster@act.gov.au
Level 4, Canberra Nara Centre | GPO Box 158 CANBERRA ACT 2601| www.act.gov.au

Act	Essential to 'light' regulation	Medium regulation	Essential to 'heavy/extensive/future' regulation
Animal Welfare Act 1992			Part 2 Section 13 - Transport and Containment Part 6 Animal Trespass
ACT Planning and Land Management 1988			
Australian Consumer Law (ACT)			
Building Act 2004			Allow building inspectors to take photographs using drones Section 134A.
Common Boundaries Act 1981			
Corrections Management Act 2007			There is currently a no-fly zone established around the Alexander Maconochie Centre because it has a helipad. There is not a restricted fly zone around Bimberi Youth Detention Centre but it is within 'controlled' airspace meaning there are height restrictions. Establishing a no-fly zone around prisons, remand centres, police stations and juvenile detention centres could be a legislative option but given we are looking at commercial drone regulation, it is likely that the fly zone of each license would come under a zone by zone evaluation to be validated anyway. If regulations were expanded to recreational drone users, establishing no-fly zones around prisons, embassies and hospitals may become relevant.
Crimes Act 1900	**Section 61B** Intimate observations or capturing visual data etc (1) A person (the offender) commits an offence if— (a) the offender— (i) observes another person with the aid of a device; or (ii) captures visual data of another person; and (b) a reasonable person would, in all the circumstances, consider the observing or capturing of visual data to be— (i) an invasion of privacy; and (ii) indecent.		**Section 35** Stalking (1) A person must not stalk someone with intent— (a) to cause apprehension or fear of harm, in the person stalked or someone else; or (b) to cause harm to the person stalked or someone else; or (c) to harass the person stalked. (2) For this section, a person stalks someone else (the stalked person) if, on at least 2 occasions, the person does 1 or more of the following: (a) follows or approaches the stalked person; (b) loiters near, watches, approaches or enters a place where the stalked person resides, works or visits; (c) keeps the stalked person under surveillance;
Crimes (Invasion of Privacy) Amendment Bill 2017	**Section 72C** Non-consensual intimate observations etc (1) A person (the offender) commits an offence if— (a) the offender observes with the aid of a device, or captures an intimate image or document of, another person (the affected person); and (b) a reasonable person would, in all the circumstances, consider the observation or capture to be an invasion of the affected person's privacy. Maximum penalty: 200 penalty units, imprisonment for 2 years or both Examples—par (a) 1 using binoculars 2 using a remotely-controlled drone 3 using a ladder 4 using a mobile phone to photograph a woman's underwear under her skirt or down the front of her blouse This is the only piece of ACT legislation that deliberately mentions the use of drones. The difficult issue in this instance is tracing the drone to its owner in the event an offence has been committed.		It would be possible for a drone to be listed under the definition of a surveillance device. (a) a data surveillance device, a listening device, an optical surveillance device or a tracking device; or (b) a device that is a combination of any 2 or more of the devices mentioned in paragraph (a); or (c) a device of a kind prescribed by regulation.
Crimes (Surveillance Devices) Act 2010			
Criminal Code 2002			
Dangerous Goods (Road Transport) Act 2009			CASA have existing regulations for the transport of dangerous goods by air. Part 92 - *Civil Aviation Safety Regulations 1988*
Discrimination Act 1991			
Domestic Animals Act 2000			
Duties Act 1999			
Electricity Safety Act 1971			
Emergencies Act 1997			
Environmental Protection Act 1997	**Section 28** Noise—exception if allowed by approval Under section 25 (1), noise is not taken to cause environmental harm in an affected place if the noise is emitted in the course of conducting an activity for which an approval is in force. approval, for an activity, means a licence, lease, permit or other authority (however described) under a territory law that authorises or allows the conduct of the activity on stated public land. **Section 29** Noise—other exceptions Under section 25 (1), noise is not taken to cause environmental harm in an affected place if it is noise mentioned in schedule 2, table 2.3, column 1 and the conditions (if any) mentioned in column 3 for the noise are met. Noise mentioned in Table 2.3 include: noise emitted in the course of primary production (a) the noise is emitted— (i) between 7 am and 10 pm on Monday to Saturday; or (ii) between 8 am and 10 pm on Sunday or a public holiday; and (b) the equipment used is maintained and operated in accordance with the manufacturer's instructions Activities such as mowing the lawn come under item 3 in Table 2.3: noise emitted in the course of maintaining or repairing ownership (a) the noise is emitted— (i) between 7 am and 8 pm on Monday to Saturday; or (ii) between 8 am and 6 pm on Sunday or a public holiday; and (b) any noise exceeding a zone noise standard is emitted for periods totalling not more than 48 hours in any 8-week period; and		
Environment Protection Regulation 2005			
Environment Protection (Noise) Notifiable Instrument NI2012-323			
Fair Trading (Australian Consumer Law) Act 1992			
Firearms Act 1996			Drones that are modified with firearms
Fisheries Act 2000			Drones could be classified as fishing gear, as declared by the Minister under **Section 17** **Division 8.3**. Offences in relation to fishing gear Current fishing requirements state that a person be within 10m of their fishing gear and that the person can see the gear at all times: **Section 48** For subsection (1), an authorised officer may stop and detain a vehicle that the officer believes, on reasonable grounds, is— (a) a fixed transport vehicle; or (b) a vehicle where there are documents relating to the handling of food intended for sale, the sale of food or equipment.
Food Act 2001			
Forfeiture Act 1991			
Health Act 1993	Perhaps a risk assessment should be implemented, where commercial drone operators are asked to show how they would mitigate the risk of injury to bystanders. This would mean specifying an acceptable level of risk and then require dronemakers to show that their vehicles meet that standard. This might involve adding cushioning or parachutes to drones, or ensuring that they can still operate if some parts fail, or making them so small and light that they would cause little injury if they fell on someone.		
Heavy Vehicle National Law (ACT) Act 2013			
Information Privacy Act 2014		Ensuring that the use of commercial drones complies with the Territory Privacy Principles.	
Interstate Road Transport Act 1985			
Listening Devices Act 1992			Drones could be classified as listening devices **Section 4** Use of listening devices (1) A person must not use a listening device with the intention of— (a) listening to or recording a private conversation to which the person is not a party; or (b) recording a private conversation to which the person is a party.
Litter Act 2004			**Section 9C & Section 11** Incorporate drones and their cargo within Section 9C concerning commercial waste and section 11, securing a vehicle load. Current definitions of vehicles under the Act relate to *Road Transport (General) Act 1999* definitions and do not cover aerial vehicles. **Section 12 & Section 7 (2)** Identifying drones as a prohibited item in section 12 if it could be used to interfere with the event, or be a risk to public safety as relevant to section 7 (2). Eg. flying drones through fireworks or above stadiums. More relevant to recreational users
Major Events Act 2014			
Mutual Recognition (ACT) Act 1992			
Nature Conservation Act 2014			
Ombudsman Act 1989			
Planning and Development Act 2007			
Prohibited Weapons Act 1996			**Part 1.4 Other Prohibited Weapons** Identify drones' modified with weapons as a prohibitive weapon or prohibitive article as relevant.
Public Health Act 1997			
Public Roads Act 1902			
Public Unleased Land Act 2013			
Racing Act 1999	Licences are currently administered by CASA: If the drone is >2kg, the pilot requires a licence/certification to fly. A remote pilot licence (RePL) is an individual permission to fly. If a pilot holds a RePL, they still need to be employed by someone who holds a certificate to fly. These operators hold a remotely piloted aircraft (RPA) operators certificate, or ReOC.		Racing Drones
Road Transport (Driver Licensing) Act 1999			
Road Transport (Public Passenger Services) Act 2001			
Road Transport (Safety and Traffic Management) Act 1999	CASA enforces the regulation of safe flying Currently, drones do not need to be registered. If a commercial drone weighs between 100g and 2kg it can fly in CASA's 'excluded category'. If the drone is >2kg, the pilot requires a licence/certification to fly but the drone does not need to be registered.		
Road Transport (Vehicle Registration) Act 1999			

The key planning and administering barrier for commercial drone operations - the territory plan, has no designation on drone activities incl. drone airports and delivery services. Fitting them in the legislation would require either, tethering them to the same licences as given to SHOPS allowing for a broad and generic geographical designation or designating them under a new and specific licence that would require zoning and commercial approval on a case by case basis.
Under the Regulation, the ACT is divided into noise zones based on land use policies defined by the Territory Plan. Noise standards apply to each zone. Except where otherwise permitted under the Regulation, an activity causes environmental harm if that noise exceeds the noise standard at the outer most area set either by the Regulator, an environmental authorisation or an approval.
The main planning zones in the Territory Plan that would be affected by incorporating commercial drone operations would be:
TSZ5 - Transport Zone - Makes provisions for a transport network that can provide for the effective, safe and convenient movement of people and goods;
IZ1 - General Industrial Zone

Territory Plan 2008
Uncollected Goods Act 1996

Unlawful Gambling Act 2009

Relevant depending on whether betting on drone racing/competition is considered unlawful gambling

Possibly clarify the flying of a drone around a power plant/infrastructure as potential interference.
Section 33
A person commits an offence if the person— (a) does something that interferes with a regulated utility network, or a network facility; and (b) is reckless about whether doing the thing would interfere with the regulated utility network, or a network facility. Maximum penalty: 200 penalty units, imprisonment for 2 years or both.

Section 28A
Throwing objects at vehicles

Utilities (Technical Regulation) Act 2014

Victims of Crime Act 1994

Work Health and Safety Act 2011

Notifiable instrument NI2015-533 details the management of electrical risks in the Workplace Code of Practice. It would be prudent to include the use of drones, particularly concerning their use within areas with power lines and transformers.

Drones capable of being classified as an industrial robot?
Section 223
Industrial robots
(1) This section applies to a person with management or control of an industrial robot or other remotely or automatically energised plant at a workplace.
(2) The person must not direct or allow a worker to work in the immediate vicinity of the plant if it could start without warning and cause a hazard, unless suitable control measures are in place to control the risks to health and safety.
Maximum penalty:
(a) in the case of an individual—10 000; or
(b) in the case of a body corporate—50 000.
Note Strict liability applies to each physical element of each offence under this regulation, unless otherwise stated (see s 44).
(3) If the remote or automatic energising of the plant could lead to risks to health and safety, the person must ensure that access to the area in the immediate vicinity of the plant is controlled at all times—
(a) by isolating the area; or
(b) by—
(i) providing interlocked guards; or
(ii) if a risk remains, providing presence-sensing devices; or

Work Health and Safety Regulation 2011

Drones capable of being classified as optical surveillance devices?
Section 33
optical surveillance device—
(a) means a device capable of being used to record visually or observe an activity; but
(b) does not include spectacles, contact lenses or a similar device used by a person with impaired sight to overcome that impairment
and surveillance devices
surveillance device means—
(a) a data surveillance device, an optical surveillance device or a tracking device; or
(b) a device that is a combination of any 2 or more of the devices mentioned in paragraph (a); or
(c) a device of a kind prescribed by regulation

optical surveillance device includes a camera casing or other equipment that generally indicates the presence of an optical surveillance device.

Workplace Privacy Act 2011

DRONE ISSUES [FOR INPUT]

A future ACT regulatory framework covering the operation of commercial drones has multiple directorate concerns relating to the following operational and governance issues:

Issues	Ministerial Office	Directorate	Legislation
○ Technology/innovation initiatives as well as future investment prospects for a drone-delivery market in the Territory. ○ Skills, trade and economic development guidelines. ○ Economic	Economic Development	Chief Minister, Treasury and Economic Development	
○ Public land and lease regulation. ○ Access Canberra's jurisdiction over fair trading and registration, inspection and regulatory services (including transport regulation and licensing).	Regulatory Services		
○ Community perceptions (Communications)			

○ Data to government
  ○ Use – Geospatial (CDO); Transport (TCCS); Land planning
  ○ Privacy
			Privacy
			• *Human Rights Act 2004* - any law that allows data to be gathered/stored/shared must be compatible with the right to privacy (s 17)
			• *Information Privacy Act 2014* – where a drone operated by a public sector agency collects personal information (Territory Privacy Principles #11 is particularly relevant)
			• *Health Records (Privacy and Access) Act* – where a drone collects personal health information

Issues	Ministerial Office	Directorate	Legislation
○ Environmental protection policy ○ In relation to public lands ○ Noise (new background)	Environment and Heritage	Environment, Planning and Sustainable Development	
○ Licencing around planning and development of drone base sites. ○ Strategic land use. ○ Prohibited and prescribed areas. ○ Longer term urban planning.	Planning and Land Management		
○ Transportation reform policy including defining drones as a class of commercial transport and issues relating to safe practice and compliance. ○ Responding to community complaints and concerns (e.g. driver distraction)	Transport and City Services	Transport Canberra and City Services	
○ Sensitive sites - gaol, schools, monuments, Legislative Assembly. ○ Protection/anti-drone systems – jamming, guns, hawks, fired netting. ○ Incident reporting. ○ Emergencies ○ Use of drones by police and emergency services for security or other purposes. ○ Private use of drones during emergency.	Police and Emergency Services	Justice and Community Safety	*Emergencies Act 2004* *Crimes Act*
○ Possible licensing of commercial operations as a business. ○ Policy relating to security and privacy including the Crimes Act and the Invasion of Privacy Amendment 2017. ○ Responding to community complaints and concerns.	Attorney General		***Privacy:*** • *Human Rights Act 2004* - any law about drones must be compatible with the right to privacy (s 17) • *Information Privacy Act 2014* – where a drone operated by a public sector agency collects personal information (Territory Privacy Principles #3 and #6 are particularly relevant) • *Health Records (Privacy and Access) Act* – where a drone collects personal health information

Issues	Ministerial Office	Directorate	Legislation
			• *Workplace Privacy Act 2011* – s 11 would apply to restrict use of drones in workplace investigations • *Listening Devices Act* 1992 – s 4 would restrict use of drones with listening capabilities *Civil Law (Wrongs) Act 2002* – s 141 defence to tort of trespass (if drone flies over private land)
○ ACT legislative boundaries (viz Commonwealth/CASA)	GSO (Regulatory Reform request)		*Civil Aviation Act 1988* (Cth) - Commonwealth has exclusive power to legislate with respect to safety standards for air navigation and air operations. *Civilian Aviation Safety Regulations*, Part 101 – regulations could be relied upon to report a person to the Commonwealth regulator for a breach, and one could expect that there would be few instances in which noise, privacy, security or safety concerns are likely to arise where a person is operating a drone in accordance with the rules. A drone is considered to be a Commonwealth jurisdiction aircraft. As civil aviation law is concerned with air navigation and safety, laws directed towards unrelated ends such as ensuring privacy or noise abatement may be characterised as laws dealing with topics outside the Commonwealth's exclusive power. There may be scope for further regulation in these areas if desired. Care should be taken to ensure that any proposed laws do not attempt to achieve those unrelated ends by regulating the operation of drones directly.

From:"Stankevicius, Adam" <Adam.Stankevicius@act.gov.au>
Sent:04/10/2018 3:07 AM
To:"Clark, Rebecca" <RebeccaM.Clark@act.gov.au>
Cc:"Potter, Chantel" <Chantel.Potter@act.gov.au>
Subject:RE: Industry Forum [SEC=UNCLASSIFIED]

I don't think we have to wait for the Forum, in order to draft the Sub-Ctte paper, as the industry view will be a valuable contribution, but not the entirety of the discussion. We should get to drafting this one as soon as possible and leave space for the industry view to be dropped in after the Forum.
I'll email the working group and ask for industry nominees.
Thanks
Adam
Adam Stankevicius
Director, Economic and Regional Policy
Policy and Cabinet
Chief Minister, Treasury and Economic Development Directorate | ACT Government
P: 02 6205 0468

From: Clark, Rebecca
Sent: Thursday, 4 October 2018 11:36 AM
To: Stankevicius, Adam <Adam.Stankevicius@act.gov.au>
Cc: Potter, Chantel <Chantel.Potter@act.gov.au>
Subject: RE: Industry Forum [SEC=UNCLASSIFIED]
That's a great idea – we should consider calling a working group for next week or the week after. I will liaise with SEMB in the meantime, so the WG can act as backup for any participants we may have missed.
Dates of course will depend on when the Forum will be – 3 weeks prior to HSSIC puts us at 18 October – we absolutely cannot go beyond that for a forum date because it will eat into clearance timeframes, assuming the discussion paper will need to be at the Minister's office one week prior to final lodgement.
Proposed approach –
WG meeting – schedule for either Thu 11 of Fri 12 Oct (invites will need to go out today/tomorrow)
Industry Forum – schedule for week beginning 15th Oct
The only problem with that is that there will be little to no time to test the appetite of stakeholders to attend the forum, which will be within the next week.
We could bring the WG forward to the beginning of the week, to provide additional time to get invites out for the forum.
Happy for a steer.
I should hear back from Brent today re CBRIN hosting and I'll pass that info on.
Kind regards
Rebecca Clark | Policy Officer
☎+61 620 72107 | Email: rebeccam.clark@act.gov.au
Strategic Policy and Cabinet | Chief Minister, Treasury and Economic Development | ACT Government
Level 4, Canberra Nara Centre | GPO Box 158 CANBERRA ACT 2601 | www.act.gov.au

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Please consider the environment before printing this email.

From: Stankevicius, Adam
Sent: Thursday, 4 October 2018 11:10 AM
To: Clark, Rebecca <RebeccaM.Clark@act.gov.au>
Cc: Potter, Chantel <Chantel.Potter@act.gov.au>
Subject: RE: Industry Forum [SEC=UNCLASSIFIED]
Sure, I'm happy for you to reach out to SEMB for some ideas, or we could ask the whole Drones working group (which includes SEMB) for any ideas regarding participants?? What do you think? Adam
Adam Stankevicius

Director, Economic and Regional Policy
Policy and Cabinet
Chief Minister, Treasury and Economic Development Directorate | ACT Government
P: 02 6205 0468

From: Clark, Rebecca
Sent: Thursday, 4 October 2018 10:36 AM
To: Stankevicius, Adam <Adam.Stankevicius@act.gov.au>
Cc: Potter, Chantel <Chantel.Potter@act.gov.au>
Subject: Industry Forum [SEC=UNCLASSIFIED]

Hi Adam

Just doing some additional thinking re stakeholders. We seem to have a good sweep of commercial industry and defence related companies; may I suggest that I engage with SEMB (David and Bren) to get some additional names of commercial players in the enforcement/emergency services space (not necessarily the law enforcement bodies themselves as they would have different requirements to commercial players).

Cheers

Kind regards

Rebecca Clark | Policy Officer
☎+61 620 72107 | Email: rebeccam.clark@act.gov.au
Strategic Policy and Cabinet | Chief Minister, Treasury and Economic Development | ACT Government
Level 4, Canberra Nara Centre | GPO Box 158 CANBERRA ACT 2601 | www.act.gov.au

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From:"Stankevicius, Adam" <Adam.Stankevicius@act.gov.au>
Sent:07/08/2018 9:34 AM
To:"Wilesmith, Brett" <Brett.Wilesmith@act.gov.au>
Subject:HPE CM: FW: Cross-Government Drones Working Group [SEC=UNCLASSIFIED]

First nominee!

Adam Stankevicius
Director, Government and Regulatory Reform
Policy and Cabinet
Chief Minister, Treasury and Economic Development Directorate | ACT Government
P: 02 6205 0468

From: Croke, Leesa
Sent: Monday, 6 August 2018 9:03 PM
To: Peffer, Dave <Dave.Peffer@act.gov.au>; Stankevicius, Adam <Adam.Stankevicius@act.gov.au>
Cc: Snowden, David <David.Snowden@act.gov.au>
Subject: Re: Cross-Government Drones Working Group [SEC=UNCLASSIFIED]

Great - thanks

Sent from my iPhone

On 6 Aug 2018, at 7:42 pm, Peffer, Dave <Dave.Peffer@act.gov.au> wrote:

> Hi Leesa
>
> David Snowden will be AC's rep.
>
> Thanks
>
> Dave
>
> On 6 Aug 2018, at 4:46 pm, Croke, Leesa <Leesa.Croke@act.gov.au> wrote:
>
> > Colleagues
> >
> > I am writing to follow up our discussion at Policy Council on the possible establishment of a cross-government working group to develop a legislative package relating to drones in the ACT.
> >
> > We have recently met with Australian Government senior officials in relation to their responsibilities in this space, and they have indicated that little further action is anticipated at the federal level until the outcome of the current Senate Inquiry is clear (likely later this year) and a Government Response has been provided (likely in 2019). This process may have an impact on licencing, ID requirements and handler training.
> >
> > Regardless, it is highly likely that the Australian Government will consider drone matters relating to noise, privacy, planning and the security of state/territory facilities is a Territory responsibility and they will not be legislating in these areas.

With this mind, and taking into account Minister Ramsay's desire to develop a 'light touch' legislative framework for drones in the ACT as soon as possible, I am seeking nominations from your areas for a Drones Working Group to be convened by Policy and Cabinet to develop the necessary package for government consideration. I understand Minister Ramsay's office has discussed the issue with other Ministers' Offices and he has been asked to lead the work in this space.

I anticipate that transport policy, corrective services, ACT Policing, Legislation Policy, planning, Access Canberra and economic development will have an interest, see the attached document for likely policy issues.

I would appreciate your nominee **by Wednesday 15 August 2018**.

If you have any queries, please contact Adam Stankevicius on x50468.

Leesa

<Drones Policy Directorate Responsibilities.docx>

Leesa Croke
Deputy Director General
Policy and Cabinet
CMTEDD
6207 3751
0408 217 598

From:"Stankevicius, Adam" <Adam.Stankevicius@act.gov.au>
Sent:17/08/2018 5:05 PM
To:"Wilesmith, Brett" <Brett.Wilesmith@act.gov.au>
Subject:FW: Cross-Government Drones Working Group [SEC=UNCLASSIFIED]
Attachments: Drones Policy Directorate Responsibilities.docx

Adam Stankevicius
Director, Government and Regulatory Reform
Policy and Cabinet
Chief Minister, Treasury and Economic Development Directorate | ACT Government
P: 02 6205 0468

From: Ng, Daniel
Sent: Tuesday, 14 August 2018 9:47 AM
To: Stankevicius, Adam <Adam.Stankevicius@act.gov.au>
Cc: Beddoe, Julie <Julie.Beddoe@act.gov.au>; Campbell, Kevin <Kevin.Campbell@act.gov.au>
Subject: FW: Cross-Government Drones Working Group [SEC=UNCLASSIFIED]

Hi Adam

In relation to the above working group, could I ask that Julie Beddoe and Kevin Campbell be added to the mailing list for this group as the JACS reps. Likely only one of Julie/Kevin will attend the meetings for this.

Many thanks

Daniel

Daniel Ng | Deputy Executive Director |
Legislation, Policy & Programs | Justice and Community Safety Directorate | **ACT Government**
Level 4, 12 Moore Street, CANBERRA CITY ACT 2601 | GPO Box 158, CANBERRA ACT 2608
Telephone: (02) 6207 0674 | Facsimile: (02) 6205 0937| Email: Daniel.Ng@act.gov.au

From: Croke, Leesa
Sent: Monday, 6 August 2018 4:47 PM
To: Glenn, Richard <Richard.Glenn@act.gov.au>; Rutledge, Geoffrey <Geoffrey.Rutledge@act.gov.au>; Edghill, Duncan <Duncan.Edghill@act.gov.au>; Pryce, David <David.Pryce@act.gov.au>; Peffer, Dave <Dave.Peffer@act.gov.au>; Arthy, Kareena <Kareena.Arthy@act.gov.au>
Cc: Stankevicius, Adam <Adam.Stankevicius@act.gov.au>
Subject: Cross-Government Drones Working Group [SEC=UNCLASSIFIED]

Colleagues

I am writing to follow up our discussion at Policy Council on the possible establishment of a cross-government working group to develop a legislative package relating to drones in the ACT.

We have recently met with Australian Government senior officials in relation to their responsibilities in this space, and they have indicated that little further action is anticipated at the federal level until the outcome of the current Senate Inquiry is clear (likely later this year) and a Government Response has been provided (likely in 2019). This process may have an impact on licencing, ID requirements and handler training.

Regardless, it is highly likely that the Australian Government will consider drone matters relating to noise, privacy, planning and the security of state/territory facilities is a Territory responsibility and they will not be legislating in these areas.

With this mind, and taking into account Minister Ramsay's desire to develop a 'light touch' legislative framework for drones in the ACT as soon as possible, I am seeking nominations from your areas for a Drones Working Group to be convened by Policy and Cabinet to develop the necessary package for government consideration. I understand Minister Ramsay's office has discussed the issue with other Ministers' Offices and he has been asked to lead the work in this space.

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I would appreciate your nominee **by Wednesday 15 August 2018**.

If you have any queries, please contact Adam Stankevicius on x50468.

Leesa

Drones Framework - Directorate Responsibilities

A future regulatory framework covering the operation of commercial drones has multiple directorate concerns relating to the following operational and governance issues:

	Ministerial Office	Directorate
○ Technology/innovation initiatives as well as future investment prospects for a drone-delivery market in the Territory. ○ Skills, trade and economic development guidelines.	Economic Development	Chief Minister, Treasury and Economic Development
○ Public land and lease regulation. ○ Access Canberra's jurisdiction over fair trading and registration, inspection and regulatory services (including transport regulation and licensing).	Regulatory Services	
○ Environmental protection policy in relation to public lands.	Environment and Heritage	Environment, Planning and Sustainable Development
○ Licencing around planning and development of drone base sites. ○ Strategic land use.	Planning and Land Management	
○ Transportation reform policy including defining drones as a class of commercial transport and issues relating to safe practice and compliance. ○ Responding to community complaints and concerns.	Transport and City Services	Transport Canberra and City Services
○ Incident reporting. ○ Possible future use of drones by police and emergency services for security or emergency purposes. ○ Security of Territory facilities	Police and Emergency Services	Justice and Community Safety
○ Policy relating to security and privacy including the Crimes Act and the Invasion of Privacy Amendment 2017. ○ Responding to community complaints and concerns.	Attorney General	

From:"Stankevicius, Adam" <Adam.Stankevicius@act.gov.au>
Sent:27/08/2018 4:12 PM
To:"Wilesmith, Brett" <Brett.Wilesmith@act.gov.au>
Subject:FW: Cross-Government Drones Working Group [SEC=UNCLASSIFIED]

Adam Stankevicius
Director, Government and Regulatory Reform
Policy and Cabinet
Chief Minister, Treasury and Economic Development Directorate | ACT Government
P: 02 6205 0468

From: Davidson, Geoffrey
Sent: Thursday, 23 August 2018 9:01 PM
To: Stankevicius, Adam <Adam.Stankevicius@act.gov.au>
Cc: Trevithick, Angela <Angela.Trevithick@act.gov.au>; McHugh, Ben <Ben.McHugh@act.gov.au>; Corrigan, Jim <Jim.Corrigan@act.gov.au>; Edghill, Duncan <Duncan.Edghill@act.gov.au>
Subject: FW: Cross-Government Drones Working Group [SEC=UNCLASSIFIED]

Adam

Thanks for the note to Duncan.

We'd like to nominate Angela Trevithick to be on the working group please.

Also – can you confirm JACS have been invited? This is highly relevant to them.

Geoff

From: Stankevicius, Adam
Sent: Tuesday, 21 August 2018 4:32 PM
To: Rutledge, Geoffrey <Geoffrey.Rutledge@act.gov.au>; Edghill, Duncan <Duncan.Edghill@act.gov.au>; Peffer, Dave <Dave.Peffer@act.gov.au>; Arthy, Kareena <Kareena.Arthy@act.gov.au>
Subject: RE: Cross-Government Drones Working Group [SEC=UNCLASSIFIED]

Hi all
I'm just following up on Leesa's request below, for nominations to a Drones Working Group.
I We would appreciate your advice on a nominee as soon as possible.
Cheers
Adam

Adam Stankevicius
Director, Government and Regulatory Reform
Policy and Cabinet
Chief Minister, Treasury and Economic Development Directorate | ACT Government
P: 02 6205 0468

From: Croke, Leesa
Sent: Monday, 6 August 2018 4:47 PM
To: Glenn, Richard <Richard.Glenn@act.gov.au>; Rutledge, Geoffrey <Geoffrey.Rutledge@act.gov.au>; Edghill, Duncan <Duncan.Edghill@act.gov.au>; Pryce, David <David.Pryce@act.gov.au>; Peffer, Dave

<Dave.Peffer@act.gov.au>; Arthy, Kareena <Kareena.Arthy@act.gov.au>
Cc: Stankevicius, Adam <Adam.Stankevicius@act.gov.au>
Subject: Cross-Government Drones Working Group [SEC=UNCLASSIFIED]

Colleagues

I am writing to follow up our discussion at Policy Council on the possible establishment of a cross-government working group to develop a legislative package relating to drones in the ACT.

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I anticipate that transport policy, corrective services, ACT Policing, Legislation Policy, planning, Access Canberra and economic development will have an interest, see the attached document for likely policy issues.

I would appreciate your nominee **by Wednesday 15 August 2018**.

If you have any queries, please contact Adam Stankevicius on x50468.

Leesa

From:"Stankevicius, Adam" <Adam.Stankevicius@act.gov.au>
Sent:29/08/2018 4:38 PM
To:"Wilesmith, Brett" <Brett.Wilesmith@act.gov.au>
Subject:FW: Drone regulation? [SEC=UNCLASSIFIED]

Can you pls add Ole to the Drones WG list?

Adam Stankevicius
Director, Government and Regulatory Reform
Policy and Cabinet
Chief Minister, Treasury and Economic Development Directorate | ACT Government
P: 02 6205 0468

From: Nielsen, Ole
Sent: Wednesday, 29 August 2018 4:36 PM
To: Stankevicius, Adam <Adam.Stankevicius@act.gov.au>; Engele, Sam <Sam.Engele@act.gov.au>
Cc: Rutledge, Geoffrey <Geoffrey.Rutledge@act.gov.au>
Subject: RE: Drone regulation? [SEC=UNCLASSIFIED]

Thank you very much. Yes I would very much like to attend and represent the geospatial and data perspectives.

Cheers and thanks
Ole

Ole Nielsen | Director, Data and Analytics
Ph: +61 2 6207 1526 | Mobile: 0401 966 202 | Email: ole.nielsen@act.gov.au
Chief Minister, Treasury and Economic Development Directorate | ACT Government
Level 3 Canberra Nara Centre | GPO Box 158 Canberra ACT 2601 | www.act.gov.au

ACT Government
Chief Minister, Treasury and Economic Development

In support of White Ribbon

From: Stankevicius, Adam
Sent: Wednesday, 29 August 2018 4:34 PM
To: Engele, Sam <Sam.Engele@act.gov.au>; Nielsen, Ole <Ole.Nielsen@act.gov.au>
Cc: Rutledge, Geoffrey <Geoffrey.Rutledge@act.gov.au>
Subject: RE: Drone regulation? [SEC=UNCLASSIFIED]

Ole
We'll be having the first meeting of the ACT Government Drones Working Group very soon, would you like to attend?
Adam

Adam Stankevicius
Director, Government and Regulatory Reform
Policy and Cabinet
Chief Minister, Treasury and Economic Development Directorate | ACT Government
P: 02 6205 0468

From: Engele, Sam
Sent: Wednesday, 29 August 2018 4:00 PM
To: Nielsen, Ole <Ole.Nielsen@act.gov.au>
Cc: Rutledge, Geoffrey <Geoffrey.Rutledge@act.gov.au>; Stankevicius, Adam <Adam.Stankevicius@act.gov.au>
Subject: RE: Drone regulation? [SEC=UNCLASSIFIED]

Ole,

The best people to talk to about drones are Geoffrey and Adam – I've CC'd them into this email.

Sam

SAM ENGELE | Executive Director | Policy and Cabinet

Phone 02 6205 0230 | Mobile 0413 113 039
Email Sam.Engele@ACT.gov.au

Chief Minister, Treasury and Economic Development Directorate | ACT Government
1 Constitution Av, Canberra
GPO Box 158 Canberra ACT 2601 | www.act.gov.au

From: Nielsen, Ole
Sent: Wednesday, 29 August 2018 9:39 AM
To: Engele, Sam <Sam.Engele@act.gov.au>
Subject: Drone regulation?

Hi Sam

There are talks in our Geospatial Advisory Sub Committee about positioning spatial information in ACT to be geared towards use of drones, such as

- Cloud based storage to crowd source drone data.
- Providing topographic information for use by drones.
- Developing a "drone strategy".

I believe the ACT is already well on its way to regulate drones so wonder if there is a connection we should explore? If so, do you know who the key stakeholders are in the ACT?

Grateful for your advice
Cheers
Ole

From:"Srivastava, Sunila" <Sunila.Srivastava@act.gov.au>
Sent:29/08/2018 5:48 PM
To:"Wilesmith, Brett" <Brett.Wilesmith@act.gov.au>
Cc:"Burkevics, Bren" <Bren.Burkevics@act.gov.au>
Subject: Drones Working Group

Dear Brett,

It was good to talk to you today.

Thank you for agreeing to make SEMB a permanent member of the working group. I will be representing SEMB and look forward to receiving further details from you re meetings/timeframes.

Regards

Sunila

Sunila Srivastava
A/g Deputy-Director
Security and Emergency Management Branch
Justice and Community Safety Directorate
ACT Government

Desk: 02 6207 4224

From:"Beddoe, Julie" <Julie.Beddoe@act.gov.au>
Sent:31/08/2018 11:59 AM
To:"Wilesmith, Brett" <Brett.Wilesmith@act.gov.au>
Subject: Drones working group [SEC=UNCLASSIFIED]

Hi Brett
Sorry for the delay in getting back to you. The ACT Policing contact is Nathan Greenwood (I'm not sure of his title) nathan.greenwood@afp.gov.au and the Corrections contact is David Foot Executive Director, Risk and Planning, david.foot@act.gov.au
Kind regards
Julie

Julie Beddoe |A/g Director
Phone 02 6207 4264
Civil Law |Legislation, Policy and Programs | Justice and Community Safety
Level 4, 12 Moore St Canberra ACT 2601 | GPO Box 158 Canberra ACT 2601 | www.act.gov.au

From:"Wilesmith, Brett"
Sent:04/09/2018 1:12 AM
To:"Snowden, David" <David.Snowden@act.gov.au>
Subject:FW: Community Views Results: Drones & Outdoor Advertising [SEC=UNCLASSIFIED]
Attachments: Community Views Survey_Cycle 2 Part C 2018 - Drones and Outdoor Advertising - Verbatims.docx, Community Views Survey_Cycle 2 Part C 2018 - Drones and Outdoor Advertising.pptx, Community Views Survey_Cycle 2 Part C 2018 - Drones and Outdoor Advertising - RGT.docx, Community Views Survey_Cycle 2 Part C 2018 - Drones and Outdoor Advertising - Script.docx

Hi David – survey results to be discussed.

From: Stankevicius, Adam
Sent: Monday, 3 September 2018 2:40 PM
To: Pryce, David <David.Pryce@act.gov.au>; Wilesmith, Brett <Brett.Wilesmith@act.gov.au>
Subject: FW: Community Views Results: Drones & Outdoor Advertising [SEC=UNCLASSIFIED]

fyi

Adam Stankevicius
Director, Government and Regulatory Reform
Policy and Cabinet
Chief Minister, Treasury and Economic Development Directorate | ACT Government
P: 02 6205 0468

From: Leslie, Nate
Sent: Monday, 3 September 2018 2:29 PM
To: Stankevicius, Adam <Adam.Stankevicius@act.gov.au>
Subject: Community Views Results: Drones & Outdoor Advertising [SEC=UNCLASSIFIED]

Hi Adam,

Anita mentioned you needed the Drones results for a meeting tomorrow.

Please find attached:

- CATI script
- Results presentation
- More in-depth results (RGT)
- Verbatim responses for the drones

Best,

Nate

Nate Leslie | Senior Strategic Engagement & Communications Officer
Phone: 02 6207 0280
Communications & Engagement| Chief Minister Treasury and Economic Development Directorate |
ACT Government
Level 5, Canberra Nara Centre, 1 Constitution Avenue, Canberra City | GPO Box 158 Canberra City ACT 2601 | www.act.gov.au


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D.Drones

ID	q21.9 Other (Which aspects of drone use do you think might need further regulation?)
803	Aerial photos and filming.
3475	Delivery parcels flying overhead for commercial purposes.
3860	Recreational use and parcel delivery are areas of concern. Terrorism in the sky and what they can drop.
5083	Drones for private recreational use, real estate (people photographing your premises and abusing your privacy). It is OK to have regulations but they need policing.
4670	Not happy at all with drones except for emergency bushfires and/or rescue missions.
4514	Safety aspect.
5430	More accountability, no transparency from government.
1115	Over delivery of goods or services.
4861	Business uses
4030	I am concerned with all uses except emergency use.
1097	It could be a nuisance.
710	Delivery of foods objects.
1760	Commercial and personal use needs to be strictly regulated.
4859	Recreational use in public open spaces.
2307	Anything related to recreational use.
798	Parcel Delivery.
261	Advertising, delivering of food.
1567	Air safety
454	All of it. It shouldn't happen. I don't like drones.
1645	All of them.
4828	Any personal or delivery service use.

ID	q21.9 Other (Which aspects of drone use do you think might need further regulation?)
5176	Business use.
5364	Commercial delivery.
4378	Commercial use of drones by big companies like Amazon and Google.
4203	Commercial use of drones needs to be regulated. Should be for essential services, safety only. Shouldn't have drones buzzing around everywhere.
5463	Commercial use of drones, dropping food and parcels.
1253	Commercial use, for deliveries etc.
2166	Commercial use.
119	Commercial use.
3170	Commercial use.
1068	Danger in deliveries.
1414	Delivery
835	Delivery items, Use within a suburban environment.
4230	Delivery of products and parcels.
4765	Drone use would cause losses of jobs, crashing into people or property.
1972	Fly safety
1028	Flying about with unknown purpose.
1715	For agriculture.
5405	Government use.
3389	I need more information about drones from all aspect other than emergency use.
242	Light touch should favour innovation.
4108	Mainly to do with the private sector - taking away jobs from people delivering parcels, pizzas etc or real estate people who are looking at properties.

ID	q21.9 Other (Which aspects of drone use do you think might need further regulation?)
5339	Monitoring and policing of drones.
263	Not to deliver food.
4409	Potential hazard to other vehicles.
1921	Private and commercial use needs to be further regulated.
5254	Private use
4902	Private use and commercial use.
2027	Private use in parks are they in breach of regulations?
3276	Public safety
5474	Recreation use, surveying, delivery.
3487	Regulate the use other than in the emergency situation.
2509	Regulations of operations within vicinity of airport and public events.
256	Replacing people in delivery jobs.
648	Restrictions on use during public events.
985	Risk of collisions causing injury to public. Drone racing.
519	Safety
3944	Safety
236	Safety - the user doing things they shouldn't.
4411	Safety for people, could collide with people or property.
1339	Safety of the public.
270	Security.
5406	Should not be able to carry dangerous substances.
948	Size of drones for specific purposes.
418	Skills needed, and possibility of hitting pedestrians.
564	Strong penalties for misuse. Only used by skilled operators.
185	Symbols could be used on drones. Clearly state purpose.

ID	q21.9 Other (Which aspects of drone use do you think might need further regulation?)
1656	The person flying the drone, safety.
5269	Unauthorised use of drones.
4901	Use of drones by individuals and companies.
2739	Using it for commercial delivery purposes, I think it is dangerous.

Chief Minister, Treasury and Economic Development Directorate

Cycle 2 (Part C) 2018 – Chart Report

July 2018

ACT Government

ORIMA RESEARCH

Background

- Ongoing ACT community survey conducted
- *Computer Assisted Telephone Interviewing* (CATI) methodology
- Sampling 600 respondents per cycle, stratified by ACT regions **(approximate 86 per region):**
  - North Canberra; South Canberra; Woden; Weston Creek; Belconnen; Gungahlin; and Tuggeranong
  - Data is weighted after fieldwork to reflect the relative population proportions
- Fieldwork dates (baseline)

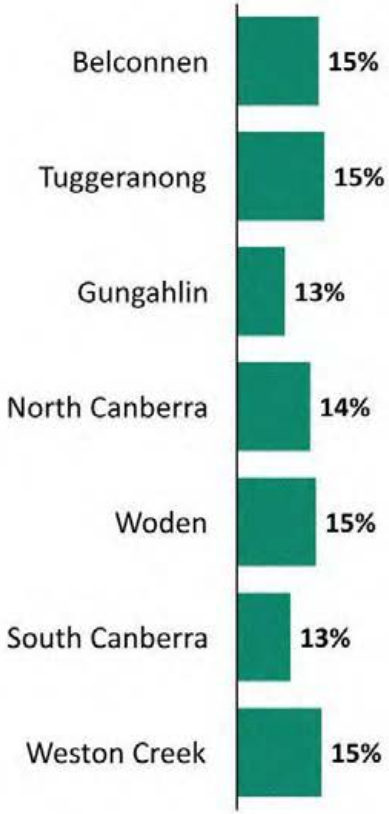
  14-21 July 2018

- Statistical confidence levels
  - **Overall results**: 95% ± 4pp
  - **Regions**: 90% ± 9pp

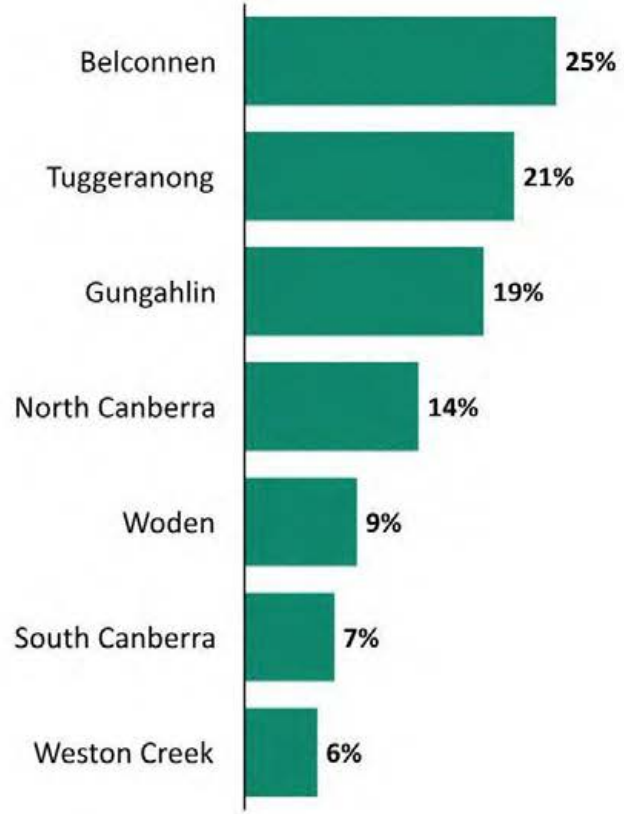
Demographics

Part C results

Region (Unweighted)



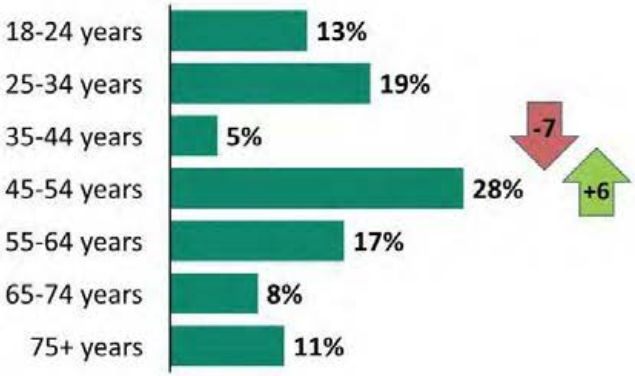
Region (Weighted)



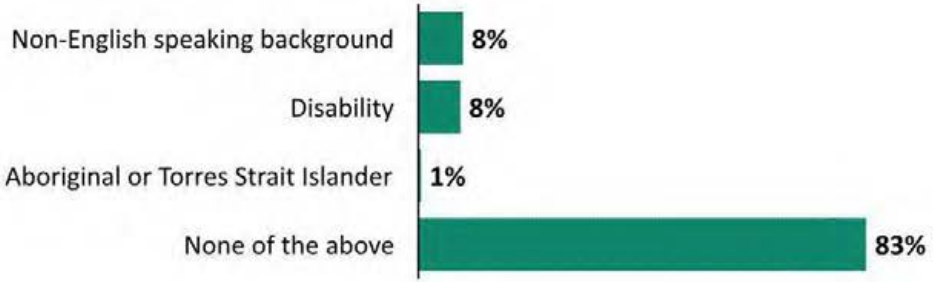
Demographics

Gender (Unweighted)

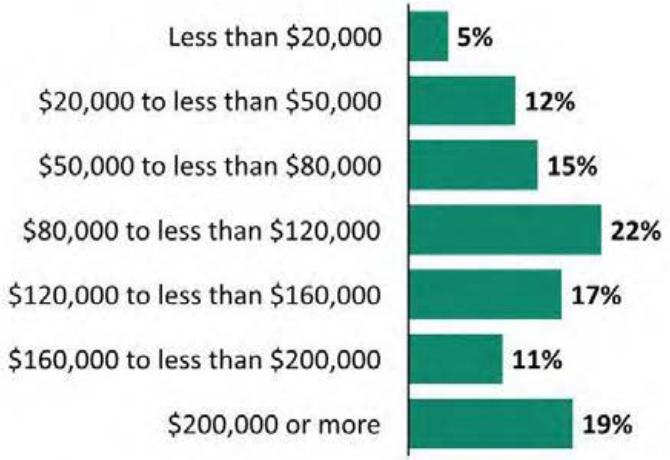
Age (Unweighted)



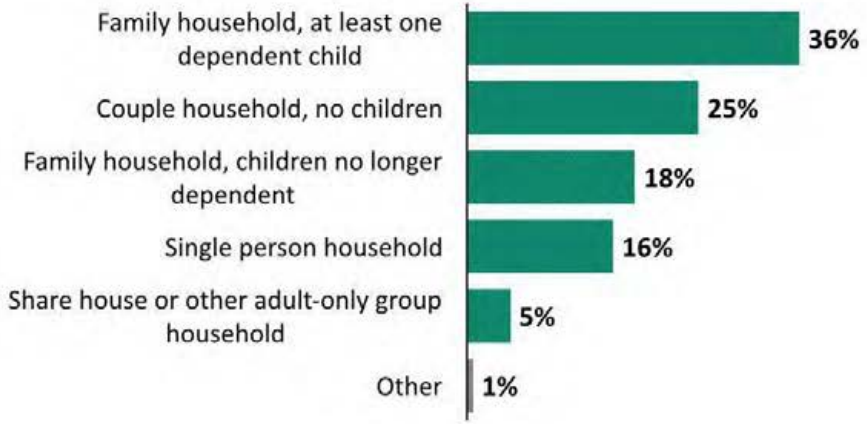
Identification (Unweighted)



Household Income (Unweighted)

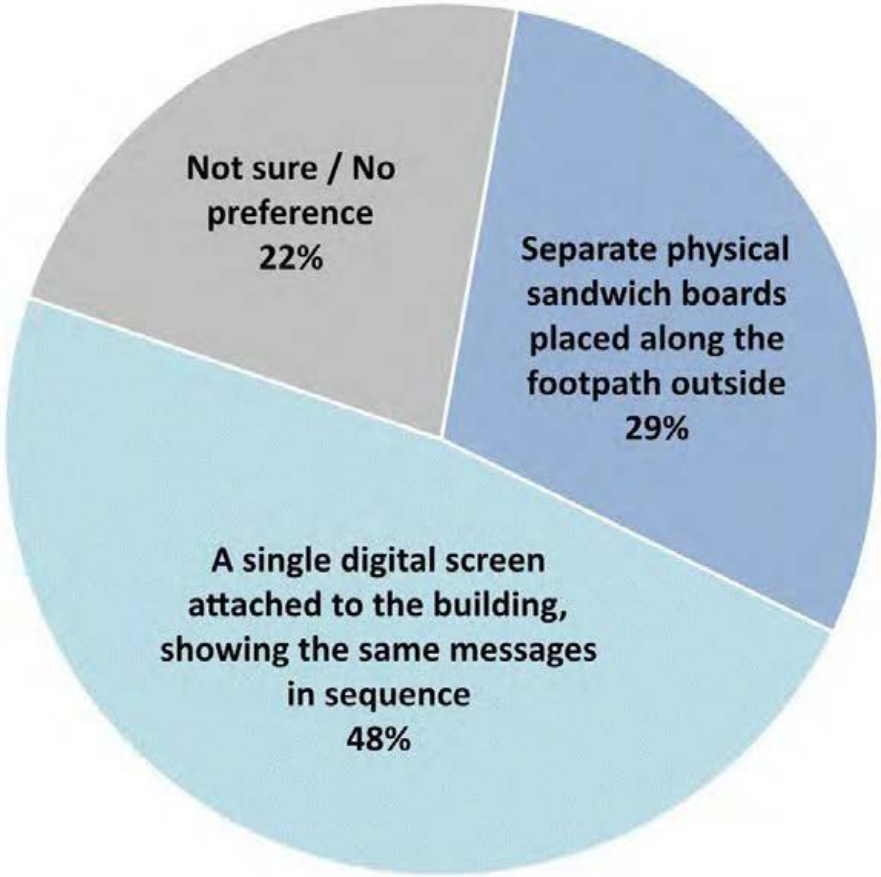


Family composition (Unweighted)



Community Information – Outdoor Advertising

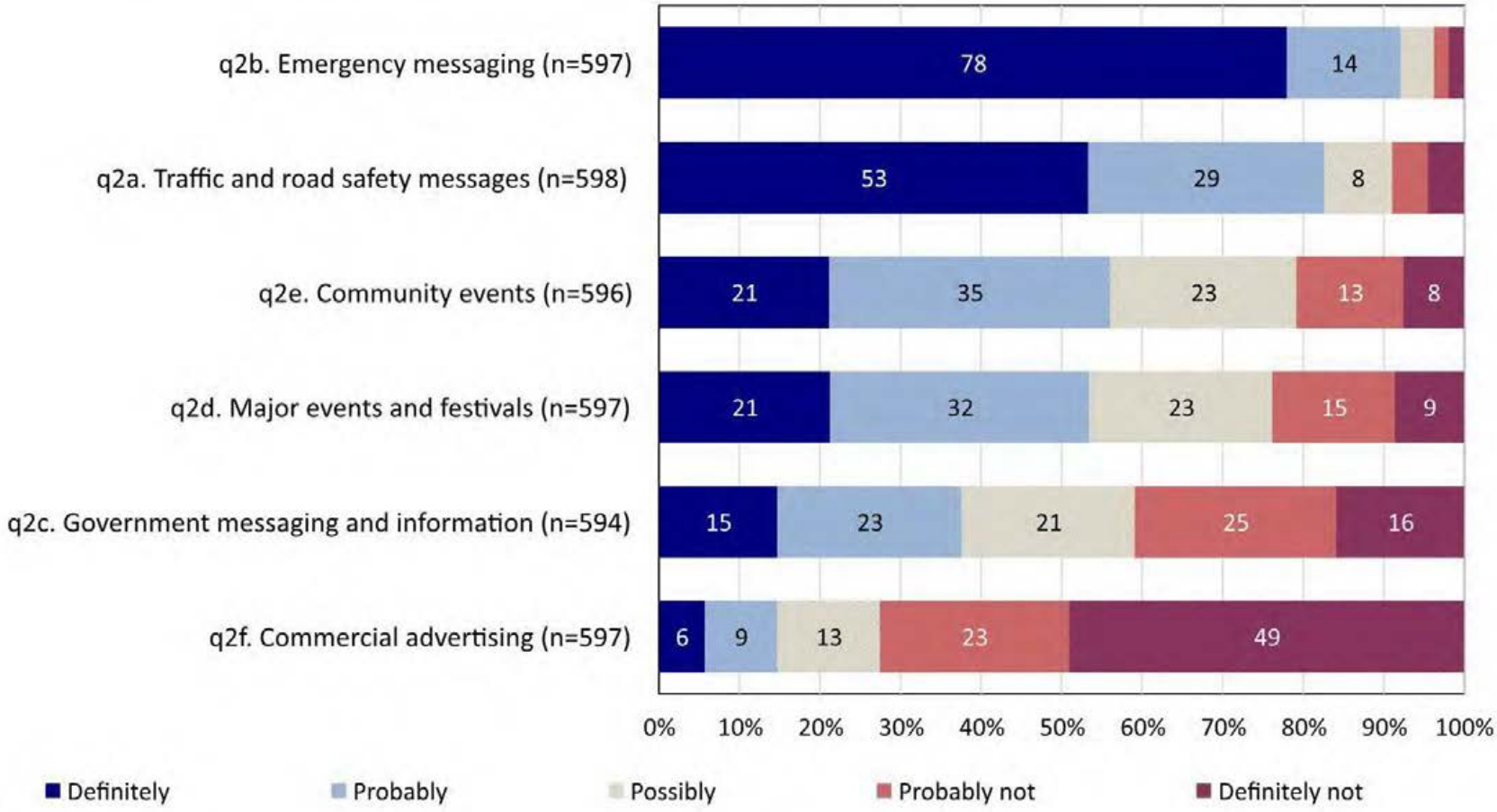
When multiple businesses occupy the same street or building, which of the following advertising options would you prefer?



Base: All respondents (n=600)

Community Information – Outdoor Advertising

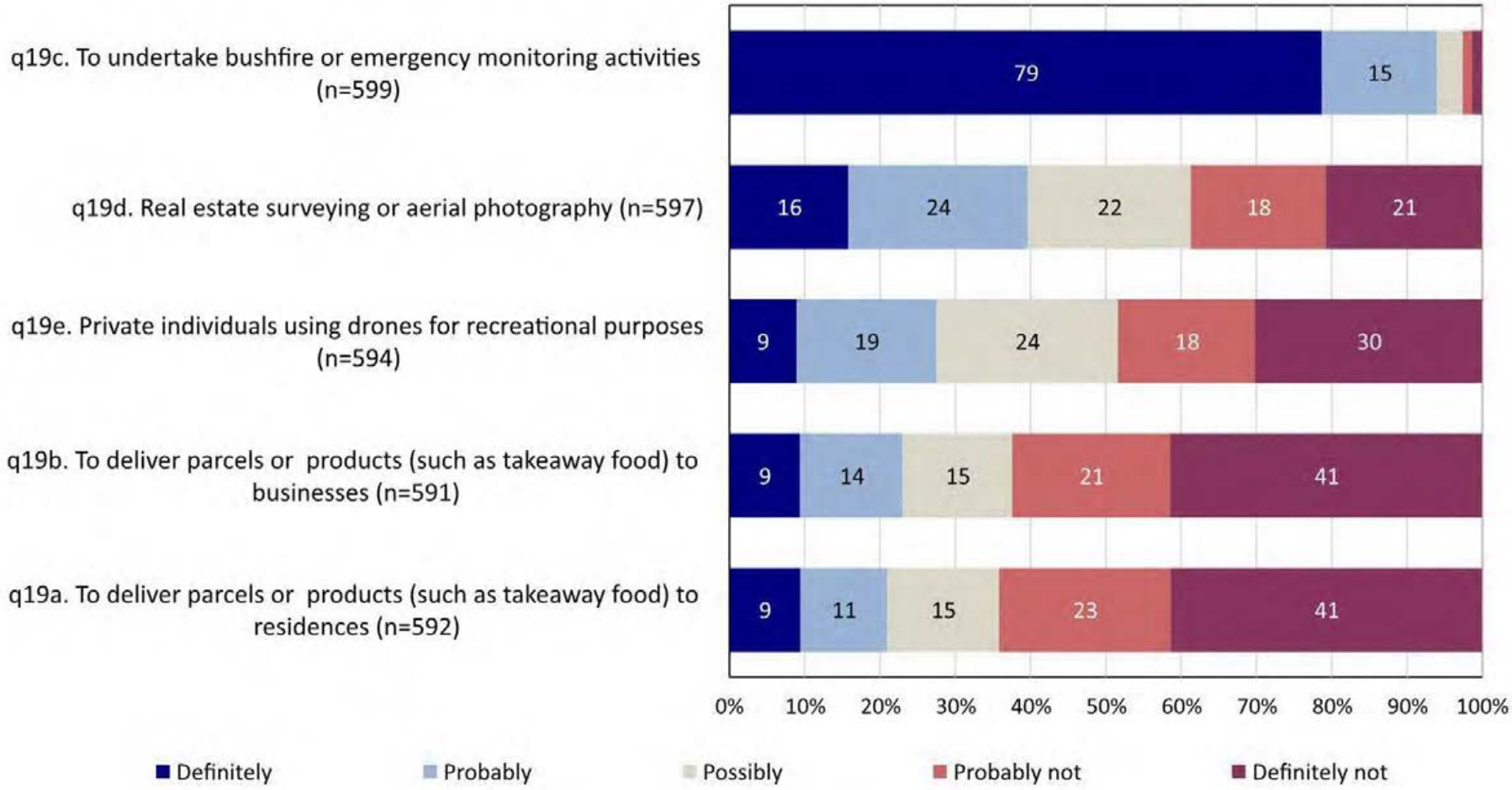
Assuming sufficient regulation, how likely would you be to support stand-alone outdoor digital screens in the ACT, for the following purposes:



Base: All respondents

Drones

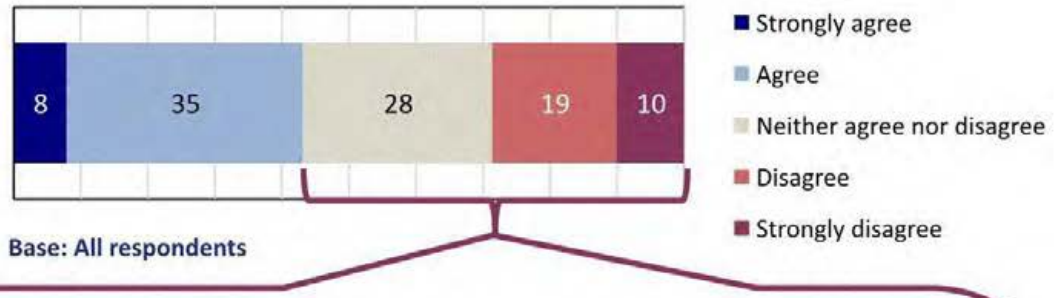
How likely are you to be in favour of drones operating in the ACT, for the following purposes:



Base: All respondents

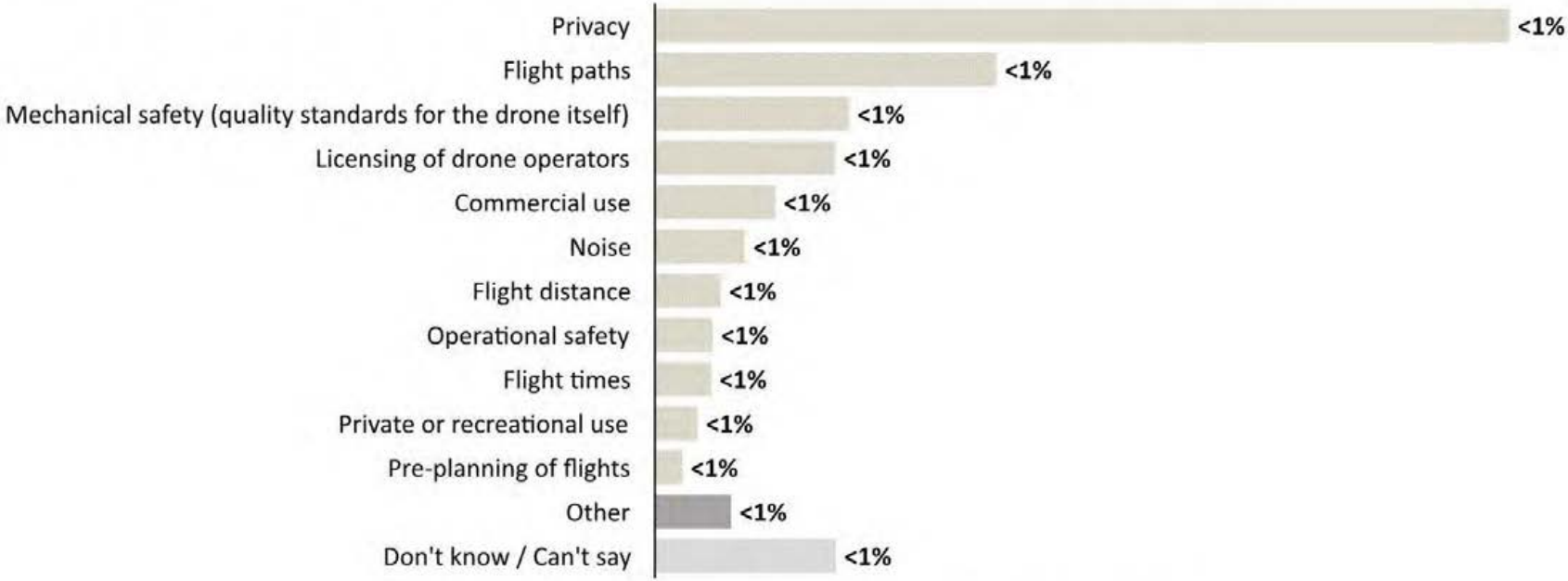
Drones

q20. I trust that the ACT Government already has a sufficient level of regulation in place for drone use. (n=525)



Base: All respondents

Which aspects of drone use do you think might need further regulation? (Unprompted)



Base: Respondents who did not *Strongly agree* or *Agree* with q20 (n=379)

This project was conducted in accordance with the international quality standard ISO 20252 and the Australian Privacy Principles contained in the Privacy Act 1988.

MELBOURNE CANBERRA SYDNEY BRISBANE

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ORIMA RESEARCH

ACT Government CMTEDD

Community Views Survey 2018 (CC, July 2018)

Cohort result is better (green) or worse (red) than overall result: 10% / 5% / 5% / 10%
Cohort result is higher (yellow) or lower (orange) than overall result: 5% / 5%
High negative result overall: 20%

Base		Overall Results: % Agree/ Satisfied	Overall Results: % Disagree/ Dissatisfied	Location: Belconnen	Gungahlin	North Canberra	South Canberra	Tuggeranong	Weston Creek	Woden	Age: 18-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75+ years
	Total number of respondents	600		88	77	86	79	81	90	83	79	114	27	107	99	30	65
	Community information																
	Outdoor Advertising																
600	q1. When multiple businesses occupy the same street or building, which of the following advertising options would you prefer?																
	A single digital screen attached to the building, showing the same messages in sequence	48%	-	51%	44%	48%	54%	48%	48%	47%	46%	56%	65%	42%	44%	48%	50%
	Separate physical sandwich boards placed along the footpath outside	29%	-	33%	36%	22%	25%	26%	31%	31%	32%	37%	14%	34%	26%	21%	16%
	Not sure / No preference	22%	-	16%	19%	29%	20%	27%	20%	23%	22%	6%	21%	24%	30%	31%	34%
	Assuming sufficient regulation, how likely would you be to support stand-alone outdoor digital screens in the ACT, for the following purposes: (% Definitely, Probably)																
587	q2b. Emergency messaging	92%	4%	93%	92%	87%	90%	95%	93%	98%	95%	92%	90%	93%	90%	99%	85%
588	q2a. Traffic and road safety messages	83%	9%	85%	88%	81%	83%	79%	70%	79%	84%	82%	87%	85%	80%	81%	76%
588	q2e. Community events	56%	27%	58%	51%	62%	57%	58%	55%	48%	66%	61%	55%	57%	47%	57%	44%
587	q2d. Major events and festivals	55%	24%	58%	49%	55%	56%	57%	52%	39%	63%	59%	57%	58%	42%	46%	45%
584	q2c. Government messaging and information	38%	42%	43%	43%	28%	34%	39%	37%	26%	55%	55%	45%	28%	33%	25%	18%
583	q2f. Commercial advertising	15%	73%	17%	14%	14%	10%	14%	13%	16%	25%	29%	30%	11%	5%	6%	7%

Base		% Agree/ Satisfied	% Disagree/ Dissatisfied	Belconnen	Gungahlin	North Canberra	South Canberra	Tuggeranong	Weston Creek	Woden	18-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75+ years
	Drones																
	How likely are you to be in favour of drones operating in the ACT, for the following purposes: (% Definitely, Probably)																
599	q19c. To undertake bushfire or emergency monitoring activities	94%	3%	92%	91%	97%	99%	98%	92%	92%	98%	92%	96%	97%	90%	92%	97%
597	q19d. Real estate surveying or aerial photography	40%	39%	44%	32%	41%	44%	41%	41%	37%	62%	41%	61%	35%	32%	34%	25%
598	q19e. Private individuals using drones for recreational purposes	27%	48%	39%	19%	27%	15%	30%	27%	17%	58%	34%	31%	20%	12%	24%	15%
593	q19b. To deliver parcels or products (such as takeaway food) to businesses	23%	62%	20%	20%	25%	29%	23%	28%	27%	53%	33%	40%	18%	12%	13%	16%
592	q19a. To deliver parcels or products (such as takeaway food) to residences	23%	64%	26%	18%	22%	22%	22%	28%	22%	53%	32%	32%	16%	10%	10%	13%
575	q20. I trust that the ACT Government already has a sufficient level of regulation in place for drone use. (% Strongly agree, Agree)	43%	19%	43%	45%	42%	32%	40%	45%	40%	54%	57%	41%	29%	41%	37%	46%
575	q21mr. Which aspects of drone use do you think might need further regulation? (Multiple Response)																
	Privacy	62%	-	65%	57%	61%	77%	67%	66%	61%	56%	54%	70%	67%	72%	55%	52%
	Flight paths (areas over which drones are permitted to fly)	25%	-	20%	35%	31%	29%	17%	37%	15%	33%	41%	31%	19%	21%	25%	17%
	Mechanical safety (quality standards for the drone itself)	14%	-	20%	15%	11%	16%	6%	23%	14%	9%	10%	21%	15%	15%	14%	8%
	Licensing of drone operators	13%	-	11%	17%	11%	16%	11%	23%	10%	30%	9%	0%	11%	12%	17%	11%
	Commercial use	8%	-	15%	6%	6%	11%	8%	4%	9%	7%	6%	0%	9%	12%	6%	9%
	Noise	7%	-	2%	8%	8%	7%	4%	10%	15%	1%	4%	10%	9%	11%	3%	2%
	Flight distance (how far a drone is permitted to fly, relative to where its	3%	-	0%	4%	11%	8%	4%	6%	2%	4%	2%	6%	7%	3%	2%	4%
	Operational safety	4%	-	5%	2%	4%	9%	4%	4%	3%	0%	7%	0%	7%	4%	1%	2%
	Flight times (hours at which drones may fly)	4%	-	2%	4%	7%	3%	4%	10%	2%	4%	3%	0%	4%	3%	1%	3%
	Private or recreational use	3%	-	4%	2%	2%	2%	4%	4%	5%	4%	3%	0%	2%	3%	5%	5%
	Pre-planning of flights	2%	-	0%	4%	0%	1%	0%	0%	0%	0%	0%	0%	2%	4%	1%	3%
	Other	6%	-	8%	6%	4%	8%	3%	6%	7%	4%	3%	0%	7%	6%	1%	12%
	Don't know / Can't say	13%	-	10%	10%	15%	9%	13%	8%	14%	9%	15%	9%	15%	10%	10%	18%

Base		% Agree/ Satisfied	% Disagree/ Dissatisfied	Belconnen	Gungahlin	North Canberra	South Canberra	Tuggeranong	Weston Creek	Woden	18-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75+ years
	Demographics (Unweighted)																
600	Location																
	Tuggeranong	13%	-	-	-	-	-	-	-	-	13%	11%	0%	13%	24%	28%	3%
	Weston Creek	15%	-	-	-	-	-	-	-	-	21%	17%	19%	11%	8%	30%	30%
	Belconnen	15%	-	-	-	-	-	-	-	-	19%	20%	7%	13%	11%	20%	8%
	Woden	15%	-	-	-	-	-	-	-	-	10%	11%	19%	14%	16%	3%	19%
	North Canberra	14%	-	-	-	-	-	-	-	-	8%	12%	22%	18%	11%	14%	17%
	South Canberra	13%	-	-	-	-	-	-	-	-	15%	8%	7%	13%	20%	14%	12%
	Gungahlin	13%	-	-	-	-	-	-	-	-	10%	20%	26%	18%	9%	4%	8%
600	q25. Which of the following age brackets do you belong to?																
	18-24 years	13%	-	17%	10%	8%	13%	15%	16%	9%	-	-	-	-	-	-	-
	25-34 years	19%	-	24%	30%	16%	11%	14%	21%	15%	-	-	-	-	-	-	-
	35-44 years	5%	-	2%	8%	7%	3%	2%	6%	6%	-	-	-	-	-	-	-
	45-54 years	26%	-	28%	31%	37%	27%	24%	21%	31%	-	-	-	-	-	-	-
	55-64 years	17%	-	12%	12%	18%	23%	28%	8%	18%	-	-	-	-	-	-	-
	65-74 years	9%	-	11%	9%	8%	9%	14%	11%	3%	-	-	-	-	-	-	-
	75+ years	11%	-	7%	5%	12%	10%	5%	14%	20%	-	-	-	-	-	-	-
552	q26. Which of the following income brackets best describes your gross total																
	Less than $20,000	3%	-	3%	3%	6%	3%	3%	4%	4%	4%	2%	0%	4%	2%	13%	7%
	$20,000 to less than $50,000	12%	-	14%	14%	8%	4%	14%	10%	15%	12%	8%	0%	9%	21%	13%	32%
	$50,000 to less than $80,000	15%	-	10%	14%	14%	9%	17%	22%	18%	19%	13%	0%	11%	12%	19%	27%
	$80,000 to less than $120,000	22%	-	25%	16%	25%	21%	25%	19%	21%	11%	26%	25%	20%	31%	17%	22%
	$120,000 to less than $160,000	17%	-	21%	26%	16%	12%	16%	18%	13%	21%	23%	11%	16%	18%	8%	7%
	$160,000 to less than $200,000	11%	-	10%	17%	11%	7%	8%	7%	15%	14%	11%	21%	17%	10%	8%	3%
	$200,000 or more	19%	-	14%	10%	22%	43%	13%	14%	17%	18%	19%	33%	28%	16%	8%	3%
597	q27. Which of the following best describes your household type?																
	Family household, at least one dependent child	36%	-	37%	39%	38%	39%	41%	29%	32%	47%	47%	65%	48%	22%	12%	3%
	Couple household, no children	25%	-	26%	23%	16%	42%	18%	26%	27%	12%	21%	19%	17%	34%	50%	48%
	Family household, children no longer dependent	16%	-	16%	23%	18%	5%	27%	18%	16%	23%	11%	12%	22%	21%	20%	11%
	Single person household	16%	-	17%	11%	16%	11%	12%	22%	16%	6%	9%	4%	11%	20%	28%	36%
	Share house or other adult-only group household	5%	-	3%	4%	12%	3%	2%	4%	5%	8%	10%	0%	3%	2%	4%	2%
	Other	1%	-	1%	0%	1%	1%	0%	0%	1%	0%	2%	0%	1%	0%	0%	0%
600	q28mr. Do you identify as being any of the following? (Multiple Response)																
	Non-English speaking background	6%	-	9%	18%	7%	6%	7%	4%	6%	6%	14%	11%	7%	7%	10%	0%
	Disability	8%	-	12%	6%	9%	8%	7%	8%	9%	6%	5%	7%	10%	9%	8%	8%
	Aboriginal or Torres Strait Islander	1%	-	0%	0%	0%	1%	1%	1%	0%	1%	1%	0%	1%	0%	0%	0%
	None of the above	83%	-	79%	75%	84%	86%	86%	87%	86%	85%	80%	81%	83%	84%	84%	91%
600	q28. Gender																
	Male	52%	-	56%	49%	50%	56%	46%	49%	49%	49%	52%	59%	50%	54%	50%	46%
	Female	48%	-	44%	51%	50%	44%	54%	51%	51%	51%	48%	41%	50%	46%	50%	54%

ACT Government CMTEDD

Community Views Survey 2018 (C2, July 2018)

Cohort result is better (green) or worse (red) than overall result: 10% / 5% / 10%

Cohort result is higher (yellow) or lower (orange) than overall result: 5% / 5%

High negative result overall: 20%

Total number of respondents: 600

	Overall Results		Income			Household Type					Identification			Gender	
	% Agree/ Satisfied	% Disagree/ Dissatisfied	Less than $80,000	$80,000 to less than $160,000	$160,000 or more	Single person household	Couple household, no children	Family household, at least one dependent child	Family household, children no longer dependent	Share house or other adult-only group household	Aboriginal or Torres Strait Islander	Disability	Non-English speaking background	Male	Female
	173	227	162	84	148	214	208	28	3	47	90	304	296		
Community Information															
Outdoor Advertising															
q1. When multiple businesses occupy the same street or building, which of the following advertising options would you prefer?															
A single digital screen attached to the building, showing the same messages in sequence	48%	-	45%	51%	46%	44%	50%	47%	51%	46%	77%	47%	63%	48%	47%
Separate physical sandwich boards placed along the footpath outside	29%	-	32%	30%	27%	27%	29%	33%	27%	36%	0%	37%	17%	31%	26%
Not sure / No preference	23%	-	24%	19%	27%	29%	21%	20%	22%	18%	23%	16%	20%	20%	25%
Assuming sufficient regulation, how likely would you be to support stand-alone outdoor digital screens in the ACT, for the following purposes: (% Definitely, Probably)															
q1b. Emergency messaging	82%	4%	80%	86%	83%	86%	84%	85%	92%	60%	100%	89%	90%	82%	82%
q1a. Traffic and road safety messages	83%	9%	82%	83%	84%	81%	84%	83%	84%	78%	84%	76%	83%	84%	81%
q1e. Community events	56%	21%	58%	58%	53%	60%	58%	57%	58%	37%	0%	57%	69%	57%	55%
q1d. Major events and festivals	53%	28%	52%	54%	54%	49%	51%	55%	59%	43%	0%	53%	72%	54%	53%
q1c. Government messaging and information	36%	41%	39%	40%	33%	45%	35%	41%	41%	46%	0%	34%	53%	36%	36%
q1f. Commercial advertising	15%	73%	17%	13%	17%	19%	13%	16%	14%	24%	0%	17%	13%	13%	17%
Drones															
How likely are you to be in favour of drones operating in the ACT, for the following purposes: (% Definitely, Probably)															
q1bb. To undertake bushfire or emergency monitoring activities	84%	5%	81%	84%	86%	85%	86%	85%	84%	83%	100%	87%	90%	84%	84%
q1bd. Real estate surveying or aerial photography	40%	39%	39%	37%	43%	31%	44%	46%	42%	33%	0%	34%	54%	43%	36%
q1be. Private individuals using drones for recreational purposes	27%	46%	32%	24%	29%	24%	22%	33%	24%	37%	0%	33%	36%	33%	19%
q1bb. To deliver parcels or products (such as takeaway food) to businesses	19%	61%	20%	22%	17%	17%	15%	28%	16%	18%	0%	17%	34%	21%	15%
q1bc. To deliver parcels or products (such as takeaway food) to residences	21%	64%	18%	18%	25%	21%	21%	24%	27%	20%	0%	18%	35%	22%	17%
q20. I trust that the ACT Government already has a sufficient level of regulation in place for drone use. (% Strongly agree, Agree)	43%	38%	46%	40%	47%	41%	41%	41%	50%	38%	84%	38%	59%	46%	40%
q21mr. Which aspects of drone use do you think might need further regulation? (Multiple Response)															
Privacy	62%	-	61%	64%	59%	73%	67%	63%	67%	57%	-	77%	67%	58%	66%
Flight paths (areas over which drones are permitted to fly)	25%	-	27%	25%	21%	25%	23%	27%	31%	19%	-	21%	19%	28%	21%
Mechanical safety (quality standards for the drone itself)	14%	-	13%	12%	14%	18%	13%	14%	8%	0%	-	17%	7%	15%	13%
Licensing of drone operators	13%	-	12%	13%	16%	11%	12%	15%	13%	16%	-	8%	9%	12%	14%
Commercial use	9%	-	10%	11%	9%	9%	4%	11%	12%	9%	-	9%	8%	10%	7%
Noise	7%	-	9%	6%	4%	8%	6%	7%	8%	0%	-	9%	8%	7%	7%
Flight distance (how far a drone is permitted to fly, relative to where it)	5%	-	5%	5%	5%	6%	6%	5%	7%	0%	-	8%	0%	5%	4%
Operational safety	4%	-	4%	6%	5%	3%	5%	5%	1%	6%	-	10%	1%	6%	2%
Flight times (hours at which drones may fly)	4%	-	6%	5%	3%	7%	2%	6%	3%	0%	-	5%	0%	3%	5%
Private or recreational use	3%	-	2%	3%	4%	3%	4%	3%	3%	0%	-	4%	3%	2%	4%
Pre-planning of flights	2%	-	3%	3%	1%	3%	0%	3%	4%	0%	-	0%	0%	2%	2%
Other	4%	-	3%	5%	3%	5%	3%	2%	7%	11%	-	11%	3%	7%	4%
Don't know / Can't say	15%	-	12%	8%	15%	10%	19%	12%	9%	11%	-	9%	8%	11%	15%
Demographics (Unweighted)															
Location															
Tuggeranong	15%	-	18%	18%	11%	13%	10%	17%	23%	7%	33%	13%	12%	14%	17%
Weston Creek	15%	-	20%	14%	11%	21%	15%	12%	15%	16%	33%	15%	8%	14%	16%
Belconnen	23%	-	14%	18%	12%	16%	15%	15%	13%	11%	0%	15%	16%	18%	13%
Woden	19%	-	18%	13%	18%	17%	16%	13%	13%	11%	0%	9%	16%	14%	13%
North Canberra	14%	-	13%	18%	17%	13%	9%	14%	13%	36%	0%	17%	12%	14%	15%
South Canberra	13%	-	8%	10%	21%	10%	22%	14%	8%	7%	33%	13%	8%	14%	12%
Gungahlin	12%	-	15%	11%	12%	9%	11%	14%	16%	11%	0%	11%	16%	13%	11%
q15. Which of the following age brackets do you belong to?															
18-24 years	12%	-	15%	11%	15%	7%	8%	17%	17%	15%	33%	11%	14%	15%	14%
25-34 years	16%	-	13%	14%	18%	11%	14%	15%	13%	19%	33%	11%	17%	18%	16%
35-44 years	9%	-	9%	9%	8%	1%	3%	8%	3%	0%	0%	4%	8%	9%	4%
45-54 years	20%	-	20%	27%	16%	19%	19%	16%	14%	19%	33%	14%	14%	17%	23%
55-64 years	17%	-	13%	20%	15%	21%	23%	16%	19%	7%	0%	19%	14%	17%	18%
65-74 years	8%	-	14%	6%	5%	14%	13%	9%	9%	7%	0%	6%	10%	8%	8%
75+ years	11%	-	13%	3%	2%	17%	10%	3%	6%	4%	0%	13%	0%	10%	12%
q24. Which of the following income brackets best describes your gross total:															
Less than $10,000	3%	-	14%	-	-	17%	2%	2%	3%	4%	0%	13%	2%	5%	0%
$10,000 to less than $30,000	12%	-	39%	-	-	20%	13%	5%	10%	13%	0%	27%	7%	10%	15%
$30,000 to less than $60,000	15%	-	47%	-	-	29%	12%	8%	14%	26%	0%	15%	11%	16%	14%
$60,000 to less than $120,000	22%	-	-	38%	-	21%	26%	19%	21%	33%	0%	17%	24%	18%	26%
$120,000 to less than $160,000	17%	-	-	46%	-	8%	17%	19%	27%	0%	0%	20%	22%	20%	15%
$160,000 to less than $200,000	11%	-	-	-	36%	0%	12%	15%	12%	9%	33%	2%	15%	10%	11%
$200,000 or more	19%	-	-	-	64%	0%	19%	32%	14%	13%	67%	7%	20%	21%	15%
q27. Which of the following best describes your household type?															
Family household, at least one dependent child	36%	-	37%	35%	37%	-	-	-	-	-	67%	26%	39%	33%	37%
Couple household, no children	25%	-	24%	27%	23%	-	-	-	-	-	33%	23%	21%	29%	20%
Family household, children no longer dependent	18%	-	14%	23%	18%	-	-	-	-	-	0%	13%	22%	21%	15%
Single person household	16%	-	36%	12%	9%	-	-	-	-	-	0%	32%	6%	10%	22%
Share house or other adult-only group household	3%	-	4%	4%	3%	-	-	-	-	-	0%	4%	10%	5%	4%
Other	1%	-	1%	0%	0%	-	-	-	-	-	0%	2%	0%	1%	1%
q28mr. Do you identify as being any of the following? (Multiple Response)															
Non-English speaking background	8%	-	5%	10%	10%	5%	7%	8%	10%	18%	0%	0%	100%	9%	7%
Disability	9%	-	13%	7%	2%	18%	7%	6%	6%	7%	0%	100%	0%	0%	9%
Aboriginal or Torres Strait Islander	1%	-	0%	0%	2%	0%	1%	1%	0%	0%	100%	0%	0%	1%	0%
None of the above	83%	-	82%	83%	88%	81%	83%	85%	84%	75%	0%	0%	0%	83%	84%
q29. Gender															
Male	51%	-	47%	51%	60%	32%	60%	48%	58%	54%	67%	49%	34%	-	-
Female	49%	-	53%	49%	40%	68%	40%	51%	42%	46%	33%	51%	66%	-	-

ACT GOVERNMENT

COMMUNITY VIEWS SURVEY

QUESTIONNAIRE – Q2 2018

DRAFT 10 July 2018

Melbourne Canberra Sydney
www.orima.com

ORIMA RESEARCH

Introduction

Good morning/afternoon/evening my name is [name]. I'm calling on behalf of the ACT government from ORIMA Research.

We're conducting a survey to help determine what ACT government services are important to the community, how well the Government is performing and what areas might be improved.

The interview should take around 15 minutes to complete. Please be assured that your identity and all your responses will be kept confidential and will only be used for research purposes.

Would it be okay to proceed with this survey now?

1 Yes [Proceed with the survey]

2 No [Interviewer-try and schedule a more appropriate time to call if possible]

Our call may be monitored by my supervisor for quality assurance purposes, is this okay with you?

Screen: Do you work for the ACT government?

1 No [Proceed with the survey]

2 Yes [Unfortunately, for the purpose of this research we need to speak to people who do not work for the ACT government. Thank you for your willingness to take part [thank and end]

Note for interviewer/programmer: Do not read out headings

A. Community information

Outdoor Advertising

The following questions are about outdoor signage, including outdoor advertising and digital message screens in the ACT.

1 When multiple businesses occupy the same street or building, which of the following advertising options would you prefer?

1 Separate physical sandwich boards placed along the footpath outside

2 A single digital screen attached to the building, showing the same messages in sequence

3 Not sure / no preference

2 Assuming sufficient regulation, how likely would you be to support stand-alone outdoor digital screens in the ACT, for the following purposes:

		Definitely	Probably	Possibly	Probably not	Definitely not	Don't know/ Can't say
a	Traffic and road safety messages	1	2	3	4	5	6
b	Emergency messaging	1	2	3	4	5	6
c	Government messaging and information	1	2	3	4	5	6
d	Major events and festivals	1	2	3	4	5	6
e	Community events	1	2	3	4	5	6
f	Commercial advertising	1	2	3	4	5	6

B. Drones

The following questions are about the use of drones in the ACT. Drones are unmanned aerial vehicles that typically weigh less than 20 kilograms.

3 How likely are you to be in favour of drones operating in the ACT, for the following purposes:

	Definitely	Probably	Possibly	Probably not	Definitely not	Don't know/ Can't say
a To deliver parcels or products (such as takeaway food) to residences	1	2	3	4	5	6
b To deliver parcels or products (such as takeaway food) to businesses	1	2	3	4	5	6
c To undertake bushfire or emergency monitoring activities	1	2	3	4	5	6
d Real estate surveying or aerial photography	1	2	3	4	5	6
e Private individuals using drones for recreational purposes	1	2	3	4	5	6

Drone use in the ACT is already regulated for all of the purposes I just mentioned.

4 To what extent do you agree or disagree with the following statement: I trust that ACT Government already has a sufficient level of regulation in place for drone use.

1 Strongly agree *[Go to next section]*
2 Agree *[Go to next section]*
3 Neither agree nor disagree
4 Disagree
5 Strongly disagree
6 [Don't know / not sure]

5 Which aspects of drone use do you think might need further regulation? [Allow and prompt for multiple response, but do not read out.]

1 Pre-planning of flights
2 Flight times (hours at which drones may fly)
3 Flight distance (how far a drone is permitted to fly, relative to where its operator is located)
4 Flight paths (areas over which drones are permitted to fly)
5 Noise
6 Privacy

7 Licensing of drone operators

8 Mechanical safety (quality standards for the drone itself)

9 Other *[Please specify]* _____

10 [Don't know / can't say]

C. Demographic questions

The following questions will help us analyse the survey results.

6 Which of the following age brackets do you belong to?

1 18-24 years
2 25-34 years
3 35-44 years
4 45-54 years
5 55-64 years
6 65-74 years
7 75+ years
8 [Refused]

7 Which of the following income brackets best describes your gross total household income?

1 Less than $20,000
2 $20,000 to less than $50,000
3 $50,000 to less than $80,000
4 $80,000 to less than $120,000
5 $120,000 to less than $160,000
6 $160,000 to less than $200,000
7 $200,000 or more
8 [Refused / don't know]

8 Which of the following best describes your household type?

1 Single person household
2 Couple household, no children
3 Family household, at least one dependent child
4 Family household, children no longer dependent
5 Share house or other adult-only group household
6 Other *[Please specify]* _____
7 [Refused]

9 Do you identify as being any of the following? Multiple response

1 Aboriginal or Torres Strait Islander
2 Disability
3 Non-English speaking background
4 None of the above