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MUNICIPAL USE AND REGULATION OF DRONES IN CANADA

David Boghosian

Magdalena Fish

Boghosian +Allen LLP

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INTRODUCTION

Drones, otherwise known as "unmanned aerial vehicles", first became a matter of public knowledge through their use by the United States military and intelligence organizations in Iraq and Afghanistan for both covert intelligence gathering purposes and the launching of missiles. "Drone strikes", as they came to be known, are in the news regularly, and often in a negative light (for example, when a strike results in civilian casualties). Surveillance drones were also part of the security apparatus of the 2012 Olympics in London.[1] However, in late 2013, Amazon.com announced that plans were in the works to begin delivering packages by drone. The small, unmanned aircraft could deliver packages that weigh up to 2.3 kilograms within 30 minutes of the customer placing the order.[2] By the end of 2016, Amazon had successfully made its first drone delivery in a test run in London, England. One of the company's autonomous drones successfully delivered an Amazon Fire TV and a bag of popcorn.[3]

As drone technology improves, they become smaller and less expensive. As a result, hobbyists have taken up drones in a way that we have not previously seen with other model aircraft. Consumer-grade drones range from pocket-sized drones meant for taking "selfies" that users operate through a cell phone application,[4] to the DJI Phantom, which captures professional quality pictures and video and can fly at altitudes up to 19,000 feet. Unmanned aerial vehicles (UAVs) are the fastest growing sector within the aerospace industry. Current global drone production is estimated to be worth $4 billion annually. Within the next decade, it is expected to grow to approximately $93 billion.[5]

The explosion of drone technology and popularity has led governments at all levels to consider the legal, safety, and privacy implications of drones. This paper will discuss the existing regulatory regime for drones and the forthcoming changes to those regulations, as well as municipal interest in drones, both from the perspective of regulating drone usage and employing drones for their own purposes. Municipalities that employ their own drone programs will inevitably create several privacy issues which must be managed, and as such, the existing privacy regime is discussed in relation to drones. Finally, we discuss insurance considerations for municipalities that utilize drones.

UAVs, model aircraft, and/or remote piloted aerial systems are all known popularly as "drones". This paper will refer to all of these as drones or UAVs, interchangeably.

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[1] Taylor, J., "Drones to patrol the skies above Olympic Stadium", The Independent, November 24, 2011.
[2] CBC News, Amazon PrimeAir drone deliveries coming soon, CEO Jeff Bezos says", December 2, 2013, available online: <http://www.cbc.ca/news/technology/amazon-primeair-drone-deliveries-coming-soon-ceo-jeff-bezos-says-1.2447483>.
[3] McFarland, M., "Amazon makes its first drone delivery in the U.K.", CNN Tech, December 14, 2016, available online: <http://money.cnn.com/2016/12/14/technology/amazon-drone-delivery/>.
[4] AirSelfie: http://www.airselfiecamera.com/
[5] Emmett, L. et al, "Privacy in the Sky", Claims Canada, August/September 2016.

THE REGULATION OF UNMANNED AERIAL VEHICLES IN CANADA

The regulation of drones in Canada is complex and evolving. This section will discuss the current regulatory regime as well as the proposed changes to the regime, which will come into effect on January 15, 2018.

Current Regulatory Regime

UAVs are considered aircraft for the purpose of the federal *Aeronautics Act*, R.S.C., 1985 ("*Aeronautics Act*") and the regulations thereunder, known as the Canadian Aviation Regulations, SOR/960433 ("CARs"). Section 3 the *Aeronautics Act*, R.S.C., 1985, c. A-2 defines aircraft as "any machine capable of deriving support in the atmosphere from reactions of the air".

Section 101.01(1) of CARs defines unmanned air vehicles (UAVs) as, "a power-driven aircraft, other than a model aircraft, that is designed to fly without a human operator on board". Model aircraft are defined as "an aircraft, the total weight of which does not exceed 35 kg (77.2 pounds), that is mechanically driven or launches into flight for recreational purposes and that is not designed to carry persons or other living creatures". The CARs therefore distinguish between small drones used for recreation and drones of any size used for all other purposes. A model aircraft becomes a UAV if it is used for any purpose other than recreational, or weighs more than 35 kg.

Recreational Drones

Until March 2017, the recreational use of drones was largely unregulated. The CARs does not apply to model aircraft unless specifically stated.[6] The only CARs requirement that directly applies to model aircraft is the provision that "no person shall fly a model aircraft … into clouds or in manner that is or is likely to be hazardous to aviation safety.[7]

However, in March 2017 Transport Canada introduced new rules governing the use of drones weighing between 250 grams and 35 kilograms for recreational purposes.[8] The rules were extremely strict, effectively banning all recreational drone usage in urban areas.[9] This came under fire by the UAV community and in July 2017, Transport Canada responded by reducing some of the restrictions on recreational drone users.[10]

Under the current regulations, recreational drone users could face fines of up to $3,000.00 if they fly a drone weighing between 250 grams and 35 kilograms:

1. At an altitude higher than 90 meters;

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[6] Canadian Aviation Regulations, SOR/96-433 ["CARs"], s. 102.01(c).
[7] *Ibid*, s. 602.45.
[8] Foote, A., "New rules for flying recreational drones in Canada revealed", CBC News, March 16, 2017, available online: <http://www.cbc.ca/news/politics/canada-drone-regulations-marc-garneau-1.4027486> ["Foote"].
[9] Foote, *supra* note 8.
[10] Cohen, S., "'Step in the right direction': A look at Transport Canada's updated drone regulations", Financial Post, July 18, 2017, available online: <http://business.financialpost.com/technology/personal-tech/step-in-the-right-direction-a-look-at-transport-canadas-updated-drone-regulations>.

2. Within 30 meters of vehicles, vessels, or the public if your drone weighs between 250 grams and 1 kg, or within 75 meters of vehicles, vessels, or the public if your drone weighs between 1-35 kg;
3. Within 5.5 kilometers of the centre of an aerodrome (any airport, seaplane base, or anywhere that aircraft take off and land);
4. Within 1.8 kilometers of heliports or aerodromes used exclusively by helicopters;
5. Within controlled or restricted airspace;
6. Within 9 kilometers of a natural hazard or disaster area;
7. Anywhere it could interfere with police or first responders;
8. At night or in clouds;
9. Outside of the pilot's visual line of sight;
10. Further than 500 meters away from the pilot; or
11. Without the pilot's name, address, and telephone number clearly marked on the drone.[11]

Non-Recreational Use: Special Flight Operation Certificates

As for UAVs (non-recreational uses, or recreational uses of drones weighing more than 35 kilograms), section 602.41 of the CARs currently provides that no person shall operate a UAV except in accordance with a "Special Flight Operation Certificate" (SFOC).[12]

The SFOC sets conditions on the flight which must be complied with. Failure to obtain an SFOC or to operate pursuant to the conditions of the SFOC are subject to administrative penalties of up to $5,000 for individuals and up to $25,000 for corporations.[13] Further, all other operating and flight rules set out in the CARs that apply generally to aircraft also apply to UAVs since they are captured within the definition of aircraft in the *Aeronautics Act*. As such, UAV operators are also subject to penalties for other offences within the CARs.

Transport Canada issues SFOCs upon application.[14] SFOC applications are detailed and require a high degree of technical knowledge. Transport Canada assesses each application on a case-by-case basis. There is no standard form or fee for SFOC applications. Applicants must submit a detailed application to the Transport Canada Civil Aviation Regional Office in the region where they intend to fly the drone. The application must contain all the information required in Transport Canada Staff Instruction 623-001, including:

1. The operator's contact information;
2. A description of how, when, and where the operator plans to use the UAV; and

[11] Transport Canada, Flying for fun? Rules for Recreational Drone Users, available online: <http://www.tc.gc.ca/media/documents/ca-opssvs/Flying_for_fun_EN-V6.pdf>.
[12] SFOCs will no longer be required for most flights as of January 15, 2018, which will be discussed in further detail later in the paper.
[13] CARs, *supra* note 6, Appendix A, Schedule II.
[14] Canadian Aviation Regulations Advisory Council (CARAC), Notice of Proposed Amendment (NPA): Unmanned Air Vehicles, May 28, 2015 ["NPA"], p.4.

3. A detailed plan of how the operator will deal with safety risks.[15]

The operator must meet a standard of competency in order to qualify for an SFOC.[16] For UAVs weighing less than 25 kilograms and operated within visual line of sight, the minimum competency requirements are:

1. The operator must be at least 18 years old;
2. The operator must be medically fit to conduct their required duties;
3. The operator must have a working knowledge of:
    a. Transport Canada policies, guidance material, and the applicable CARs regulations;
    b. The class of airspace in which they intend to operate, including the vertical and horizontal airspace boundaries and adjacent classes of airspace;
    c. Aeronautical charts and the Canada Flight Supplement;
    d. Where the operation is conducted in or near controlled airspace, Air Traffic Control services and procedures;
    e. The effect of weather on UAV performance and the ability to identify critical weather situations;
    f. The identification of hazardous in-flight situations and collision avoidance requirements and procedures; and
    g. Type-specific UAV systems, limitations, normal procedures, and emergency procedures;
4. The operator must have completed practical training on UAVs, and UAV model-specific training (depending on the level of automation of the UAV);
5. The operator must maintain currency on all UAV systems they are approved to operate; and
6. The operator must hold a Radiotelephone Operator Restricted Certificate (required to communicate on frequencies within the protected aviation band).[17]

For UAVs weighing more than 25 kilograms and/or operated outside of visual line of sight, additional pilot knowledge, skill and proficiency will be required and evaluated by Transport Canada on a case-by-case basis.[18]

Currently, there are no minimum qualifications required for an organization to be authorized to train UAV pilots. UAV pilots can receive training from other UAV operators, manufacturers, manned aviation flight training schools, or third parties. The operator is responsible for ensuring that their personnel have reached a satisfactory level of knowledge, experience and

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[15] Transport Canada, Applying for a Special Flight Operations Certificate (SFOC), March 31, 2017, available online: <https://www.tc.gc.ca/eng/civilaviation/opssvs/applying-special-flight-operations-certificate.html> ["Applying for a SFOC"].

[16] Transport Canada, Staff Instruction No. 623-001: Review and Process of an Application for a Special Flight Operations Certificate for the Operation of an Unmanned Air Vehicle (UAV) System, November 19, 2014 ["Staff Instruction"], para 4.1, available online: <https://www.tc.gc.ca/eng/civilaviation/standards/general-recavi-uav-4161.html>.

[17] *Ibid*, para. 4.1(2)(3).

[18] *Ibid*, para. 4.1(2)(4).

skill. Transport Canada has stated that the approach to UAV training should not differ significantly than that currently applied to manned aviation.[19] This flexibility will change with the new regulations coming into effect on January 15, 2018. Pilot knowledge requirements will be standardized.

In order to obtain an SFOC, the UAV itself must be airworthy in that it must be functional and maintained in accordance with all manufacturer instructions with no unapproved modifications.[20] The operator must have standard operating procedures in place addressing separation and collision avoidance, [21] as well as emergency procedures.[22] These are just a few examples of the breadth of the SFOC application.

Transport Canada Staff Instruction 623-001 also explains all of the conditions of SFOCs and the standards by which applications for SFOCs are measured.[23] Applications are processed on a first come, first served basis. Transport Canada aims to process applications within 20 business days of submission but encourages applicants to apply as early as possible before they intend to fly the UAV.[24]

The validity period of an SFOC ranges from a few days to three years. The period granted will depend on the experience of the operator and the nature or scope of the operation. Longer term SFOCs (known as "Standing SFOCs") are only granted to experienced operators with a history of safe operations. Standing SFOCs are issued to allow operations within a defined geographic boundary (for example, a city). A condition of all Standing SFOCs is for the operator to conduct a site survey prior to any operation. The minimum standard for site surveys is set out in s. 6.19 of Transport Canada Staff Instruction No. 623-001.[25]

It is worth noting that SFOCs are not required for indoor or subterranean operations where only the UAV crew, or the UAV crew and people directly participating in the UAV operation (for example, actors on a film set), are present.[26] An example of this in the municipal context would be inspection of subway tunnels when the subway is closed, or inspections of empty buildings, if the inspection can be done completely indoors. Where there are people present who are not part of the UAV operation (for example, the residents of a building being inspected), an SFOC is required.[27]

Exemptions to the SFOC Requirement

In November 2014, the Minister of Transport issued two exemptions from the requirement to obtain an SFOC. The exemptions were intended to be a temporary solution to accommodate the

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[19] *Ibid*, para. 4.2.
[20] *Ibid*, para. 5.1.
[21] *Ibid*, para. 6.2(10).
[22] *Ibid*, para. 6.10
[23] *Ibid*.
[24] Applying for a SFOC, *supra* note 15.
[25] Staff Instruction, *supra* note 16, paras.7.4-7.5.
[26] *Ibid*, para. 6.16(1).
[27] *Ibid*, para. 6.16(1)(c).

UAV industry's growth while an amendment process to modernize the CARs was underway (which is discussed in further detail below).[28] The exemptions were updated in March 2017, when the first new regulations for recreational users were introduced.

These exemptions do not apply to model aircraft (recreational users), autonomous UAVs (those with onboard decision-making capabilities, not operated by a human) or foreign UAV operators, and do not exempt drone operators from the other requirements of the CARs.

These exemptions are based on the weight of the UAV: UAVs 0-1 kg, and UAVs 1-25 kg, provided they meet the conditions of the exemptions, and the UAV is operated by a Canadian operator within the operator's visual line of sight.

Most drones operated for municipal purposes would likely fall into the 1-25 kg category. The 1-25 kg exemption has 61 conditions which must be followed, examples of which are:

1. The UAV must be operated safely;
2. The operator is at least 18 years old (or at least 16 years old if conducting research under the supervision of an academic institution);
3. The operator must carry liability insurance with a minimum of $100,000.00 coverage;
4. The operator must be familiar with aeronautical information relevant and appropriate to the intended flight;
5. The operator must have the permission of the owner of the property(ies) on which the UAV will take off/launch from and/or land/recover on;
6. Prior to commencing operations, the operator must perform a site survey to assess the suitability of each location and confirm that safe operations can be conducted;
7. The operator must maintain unaided visual contact with the UAV sufficient to maintain operational control of the UAV, know its location, and be able to scan the airspace in which it is operating;
8. The UAV may not travel further than one-half (1/2) nautical mile from the location where the pilot is operating the UAV;
9. The pilot shall not use a first-person view device;
10. The operator must only operate a UAV during daylight hours, under visual meteorological conditions, clear or cloud, with no less than two (2) miles ground visibility;
11. The UAV shall remain at or below 300 feet above ground level;
12. The UAV may only be operated in Class G airspace (undesignated and uncontrolled airspace);
13. The UAV may not be operated
    a. within five (5) nautical miles of a forest fire;

[28] NPA, *supra* note 14.

b. within five (5) nautical miles of the centre of any aerodrome listed in the Canada Flight Supplement or the Water Aerodrome Supplement, excluding heliports;
c. within three (3) nautical miles of the centre of any heliport listed in the Canada Flight Supplement or Water Aerodrome Supplement;
d. within three (3) nautical miles of any aerodrome NOT listed in the Canada Flight Supplement or Water Aerodrome Supplement;
e. within any control zone;
f. within three (3) nautical miles of a built-up area;
g. within a lateral distance of 500 feet from any building, structure, vehicle, vessel, animal or person, unless:
    i. the building, structure, vehicle, vessel or animal is the subject of the aerial work; and
    ii. only persons inherent to the operation are present.

14. Operators shall establish and adhere to procedures to be followed in the event that control of the UAV is lost, including:
    a. Procedures for contacting emergency responders;
    b. Procedures for landing/recovering the UAV safely;
    c. Procedures for contacting the appropriate air traffic service unit; and
    d. Names of individuals responsible for following each of the above procedures;
15. A UAV shall not be operated in known or forecast icing conditions;
16. The UAV must be operating in accordance with the limitations specified by the manufacturer;
17. The operator must have the following operational and emergency equipment immediately available:
    a. Checklists or placards that enable a UAV to be operated in accordance with the limitations specified by the manufacturer; and
    b. A hand-held fire extinguisher suitable for extinguishing fires that are likely to occur;
18. The operator must successfully complete a pilot ground school program that provides instruction on the following subject areas:
    a. Airspace classification and structure;
    b. Meteorological and NOTAM reporting services;
    c. Interpretation and aeronautical charts and the Canada Flight Supplement; and
    d. Applicable content of the Canadian Aviation Regulations;
19. The operator must be appropriately trained on the UAV system and qualified for the area and type of operation;
20. The operator must ensure that the UAV is in a fit and safe state for flight prior to take-off/launch;

21. Operators should have a copy of the following documents accessible during the flight:
    a. The exemption;
    b. Proof of liability insurance coverage;
    c. Name, address, telephone number of the UAV operator;
    d. A copy of the UAV system operating limitations; and
    e. Evidence that the operator has successful completed a pilot ground school program;
22. Operators operating under the exemption shall immediately produce any of these documents to a peace officer, police officer, or Transport Canada inspector upon request;
23. Prior to the flight, operators operating under the exemption must notify Transport Canada, in writing,[29] of:
    a. Their name, address, telephone number, and email;
    b. The model of UAV(s) being operated, including serial numbers;
    c. The type of work being conducted;
    d. The geographic boundaries or area(s) where the operation will be conducted; and
    e. Confirmation that:
        i. The exemption has been read and understood;
        ii. Flights will only be conducted in Class G airspace;
        iii. Flights will only be conducted at the applicable distance from aerodromes; and
        iv. Flights will only be conducted at the applicable distance from built-up areas;
24. The operator must report any "occurrences" during flight (for example, unintended contact between a UAV and persons, vehicles, structures, etc.).[30]

Approved "pilot ground school" programs include existing flight training facilities (manned or unmanned), online courses, self-administered training programs, or a combination of these options. The pilot must also have sufficient practical training in the operation of the specific UAV model, which may be provided by manufacturers, or learned through practice. Training facilities, online courses, and manufacturers should provide certificates or letters of completion while for self-administered training, it is essential for the pilot to document the knowledge items covered, the time spent on each item, the references used, and the date of completion of all times. Self-taught pilots should keep log book of the self-training completed. Transport Canada has

[29] This can be done on the Transport Canada website at: https://www.tc.gc.ca/eng/civilaviation/opssvs/getting-permission-fly-drone.html#notification.
[30] The full list of conditions is available at http://www.tc.gc.ca/civilaviation/regserv/affairs/exemptions/docs/en/2880.htm for UAVs less than 1 kg, and http://www.tc.gc.ca/civilaviation/regserv/affairs/exemptions/docs/en/2879.htm for UAVs 1-25 kg.

published some resources which it directs self-trainees to reference,[31] including TP 15263: Knowledge Requirements for Pilots of Unmanned Air Vehicle Systems (UAV) 25 kg or Less, Operating within Visual Line of Sight.[32]

Given the distance/location restrictions (which are actually stricter than the new distance/location restrictions applicable to recreational drones), it is likely that only rural municipalities operating a UAV in open space would qualify for an exemption.

Summary of Existing Federal Drone Regulations

In summary, in order to operate a drone in Canada in accordance with the current federal regulations (which are only in effect until January 15, 2018), the operator must fit into one of the following streams:

1. If the operation is recreational in nature, and the drone weighs less than 35 kilograms, the operator must operate in accordance with the new rules for recreational drones. No SFOC is required;

2. If the operation is for any purpose other than recreational, either:

    a. Obtain an SFOC and operate in accordance with the conditions of the certificate and applicable operating and flight rules in the CARs; or

    b. If the operator qualifies for an exemption, operate in accordance with the conditions of the exemptions and applicable operating and flight rules in the CARs.

<u>Proposed Changes to the Regulatory Regime</u>

Transport Canada has been working on modernizing the drone regulation regime since 2010, and a complete overhaul of the regime will go into effect on January 15, 2018.[33] The draft amended regulations were published in the Canada Gazette on July 15, 2017 and the public has until October 2017 to comment.[34]

The proposed framework is intended to be flexible in proportion to the risk posed by the size of the UAV and the place of its operation, and no longer distinguishes between recreational

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[31] Transport Canada, Advisory Circular (AC) No. 600-004: Guidance Material for Operating Unmanned Air Vehicle Systems under an Exemption, December 20, 2016, available online: <https://www.tc.gc.ca/eng/civilaviation/opssvs/ac-600-004-2136.html#s5_3>.
[32] Available online at: https://www.tc.gc.ca/eng/civilaviation/publications/page-6557.html.
[33] Foote, *supra* note 8.
[34] Cohen, S., "Proposed drone regulations increase pilot costs, do little for safety", MobileSyrup, July 24, 2017, available online: <https://mobilesyrup.com/2017/07/24/new-proposed-drone-regulations-transport-canada/> ["Cohen"].

and non-recreational uses.[35] In the CARs, the terms "model aircraft" and "unmanned aerial vehicle" will be replaced with "unmanned aircraft systems".[36]

The following categories will be used to distinguish drones based on weight and use:[37]

Micro	Very Small	Small (Limited)	Small (Complex)	Large/BVLOS
250 grams or less	Between 250 grams and 1 kilogram	Between 1 kilogram and 25 kilograms and operated in rural areas	Between 1 kilogram and 25 kilograms and operated in or within .5 nautical miles (.93 km) of built-up areas	Greater than 25 kilograms and/or operated beyond visual-line-of-sight (BVLOS)

"Built-up area" is defined as a populated or developed area of a locality, including a city, town, village, or hamlet. A rural area is anywhere that is not a built-up area. [38]

The amendments remove the cumbersome SFOC process for the operation of most UAVs, but higher risk operations, including those involving UAVs weighing more than 25 kilograms and those operated beyond visual line of sight, will continue to require an SFOC.[39]

"Micro" UAVs (those weighing less than 250 grams) will not but subject to the proposed regulations, however, operators of micro UAVs (which would mostly be recreational users), must respect privacy laws and operate so as to not endanger the life or property of any person.[40]

The regulatory changes proposed for the "very small", "small limited" and "small complex" categories are:

Regulatory Requirement	Category		
	Very Small	**Small Limited**	**Small Complex**
Aircraft Marking and Registration	• The UAV must be clearly marked with the name, address and	• The UAV must be clearly marked with the name, address and	• The UAV must be clearly marked with the name, address and telephone number of the operator.

[35] Regulations Amending the Canadian Aviation Regulations (Unmanned Aircraft Systems), Canada Gazette Vol. 151 (2017) ["Canada Gazette"].
[36] *Ibid.*
[37] *Ibid.*
[38] *Ibid.*
[39] *Ibid.*
[40] *Ibid.*

	telephone number of the operator.	telephone number of the operator.	• The UAV must be registered with Transport Canada ($115 fee). • The registration certificate must be readily available to the pilot during each flight.
Personnel Licensing and Training	• The pilot must pass a basic written knowledge test to demonstrate knowledge in specific subject areas such as airspace classification and structure, the effects of weather, etc.	• The pilot must pass a basic written knowledge test to demonstrate knowledge in specific subject areas such as airspace classification and structure, the effects of weather, etc.	• The pilot must obtain a pilot permit ($35 fee). To obtain the permit: ○ The pilot must pass a comprehensive written knowledge test (additional $35 fee); and ○ Another UAV pilot must attest to the pilot's piloting skills.
Medical Fitness	• The pilot is required to be fit to fly.	• The pilot is required to be fit to fly.	• The pilot is required to be fit to fly.
Age Restrictions	• Pilots must be at least 14 years of age.	• Pilots must be at least 16 years of age.	• Pilots must be at least 16 years of age.
Aircraft Design Standard	• None.	• None.	• The UAV must be in compliance with a standard published by a standards organization accredited by a national or international standards accrediting body. • The operator have a statement from the manufacturer that the UAV meets the

			standard on hand during all flights. • The operator may not modify the UAV.
Operations in Urban Areas	• Permitted.	• Restricted.	• Permitted.
Operations Over People	• The UAV must maintain lateral distance from people of at least 100 feet (30.5 m). • Lateral distances of less than 100 feet are possible if flying at less than 10 knots (11.5 MPH) and higher than 100 feet. • Operations over or within open-air assemblies of persons are prohibited.	• The UAV must maintain lateral distance from people of at least 250 feet (76.2 m). • Lateral distances of less than 250 feet are possible if flying at less than 10 knots (11.5 MPH) and higher than 250 feet. • Operations over or within open-air assemblies of persons are prohibited.	• The UAV must maintain lateral distance from people of at least 100 feet (30.5 m). • Lateral distances of less than 100 feet are possible if flying at less than 10 knots (11.5 MPH) and higher than 100 feet. • The UAV may operate over or within open-air assemblies of people if operated at an altitude between 300-400 feet, and operated at a place from which it would be possible to land the UAV without creating a hazard to persons or property in the event of an emergency.
Night Operations	• Prohibited.	• Prohibited.	• Permitted with conditions (the conditions are not specified by Transport Canada).
Airspace Restrictions	• The UAV must be at least 3 nautical miles (5.56 km)	• The UAV must be at least 3 nautical miles (5.56 km)	• May fly within an aerodrome's control space if the pilot requests and receives authorization to fly

	away from the centre of aerodromes. • The UAV must be at least 1 nautical mile (1.86 km) away from heliports or aerodromes used exclusively by helicopters. • The UAV must be within .25 nautical miles (.46 km) of the pilot. • The UAV can fly at a maximum altitude of 300 feet.	away from the centre of aerodromes if there is a control zone, or at least 1 nautical mile (1.86 km) if there is no control zone. • The UAV must be at least 1 nautical mile (1.86 km) away from heliports or aerodromes used exclusively by helicopters. • The UAV must be at least .5 nautical miles (.93 km) from a built-up area. • The UAV must be within.5 nautical miles (.93 km) of the pilot. • The UAV can fly at a maximum altitude of 300 feet (91.44 m), or 100 feet (30.48) if over a	from the appropriate air traffic control unit. • The UAV must be within .5 nautical miles (.93 km) of the pilot. • The UAV can fly at a maximum altitude of 400 feet (121.92 m), or 100 feet (30.48) if over a building or structure.

		building or structure.	
Speed Restrictions	• The UAV can fly at a maximum speed of 25 knots (29 MPH)	• The UAV can fly at a maximum speed of 87 knots (100 MPH)	• No speed restriction is specified by Transport Canada.
Liability Insurance	• At least $100,000 in liability coverage required.	• At least $100,000 in liability coverage required.	• At least $100,000 in liability coverage required.

Additionally, all UAV operators operating drones weighing between 250 grams and 25 kilograms must notify air traffic control if the drone inadvertently enters or is likely to enter controlled airspace. UAV operators must also give the right of way to manned aircraft, operate in a manner that is not reckless or negligent or that could endanger life or property, and confirm that radio interference cannot affect the flight. UAVs should not be flown into clouds. If the operator is using a first person view device, another person must be present as a visual observer.[41]

We anticipate that most municipal uses of UAVs would fall into the "small complex" category in urban municipalities, or in the "small limited" category for rural municipalities (unless the UAV is operated at night or over people, in which case it would be moved back to the "small complex" category).

Though the new regulations will go into effect in January 2018, Transport Canada estimates that it will take 18 months (from July 2017) for its staff to develop the small complex pilot knowledge test. It is not clear what pilots are expected to do in the interval between January 2018 and January 2019.[42] The basic knowledge test required for pilots in "very small" and "small limited" operations will be a subset of the "small complex" knowledge requirements and will require less time to develop and publish online.[43]

The proposed amendments have both the effect of instituting more rigorous safety measures surrounding drone usage, while at the same time lessening the existing red tape. Transport Canada estimates that the cost savings for businesses and institutions as a result of the elimination of the SFOC requirement will be $82.34 million over the next 10 years.[44]

[41] Canada Gazette, *supra* note 35.
[42] Cohen, *supr*a note 34.
[43] Canada Gazette, *supra* note 35.
[44] *Ibid*.

That said, the new regulations are not without their critics. One common critique is of the "design standard" requirement. Transport Canada has required compliance with design standards in an attempt to prevent "fly-away" incidents (where a UAV becomes uncontrollable mid-flight),[45] but none of the most popular, currently-available drones manufactured by DJI (the largest drone manufacturer) are compliant with the existing design standards. It is not clear whether the design standard will be modified when the new regulations come into effect. If the design standard is not modified, many commercial operators may be required to invest in new equipment, which can cost thousands of dollars.[46]

Drone Regulations Internationally

The United States Federal Aviation Administration has similarly been implementing changes to its drone regulations. On August 29, 2016, the FAA announced new operational rules for routine non-hobbyist use of drones.[47] The rules apply to UAVs weighing less than 55 lbs (25 kg) operated within visual line of sight at a maximum altitude of 400 feet. The UAV must be operated by a pilot holding a remote pilot certificate. To qualify for a remote pilot certificate, the person must be at least 16 years old, be vetted by the Transportation Security Administration, and must demonstrate aeronautical knowledge by either passing an initial aeronautical knowledge test at an FAA-approved knowledge testing centre or holding a "part 61 pilot certificate" and completing a flight review and a small UAS (another acronym for UAV) online training course provided by the FAA.[48]

Only a few countries around the world have implemented drone regulations at all, with no binding international standards in existence. The United Nations, through the International Civil Aviation Organization (ICAO), a UN specialized agency, has formed a Remotely Piloted Aircraft Systems Panel and hopes to deliver standards for unmanned aircraft in 2018.[49]

MUNICIPAL REGULATION OF DRONES

Municipal governments are interested in UAVs both for the purpose of regulating and policing private sector use of drones within their jurisdiction, and perhaps even more so, for the use of UAVs for their own purposes.

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[45] *Ibid*.
[46] Cohen, *supra* note 34.
[47] Federal Aviation Administration, Press Release – New FAA Rules for Small Unmanned Aircraft Systems Go Into Effect". August 29, 2016, available online: <https://www.faa.gov/news/press_releases/news_story.cfm?newsId=20734>.
[48] FAA News, Summary of Small Ummanned Aircraft Rule (Part 107), June 21, 2016.
[49] Carey, B., "ICAO Panel Will Recommend First UAV Standards in 2018", AINonline, available online: <http://www.ainonline.com/aviation-news/aerospace/2015-01-06/icao-panel-will-recommend-first-uav-standards-2018>.

Jurisdiction for Drone Regulation

The federal government has the exclusive jurisdiction to regulate aeronautics pursuant to Sections 91(2), (5), and (7) of the *Constitution Act, 1867*, as determined by the Privy Council in the *Aeronautics Reference*.[50] Aeronautics was again confirmed as within the exclusive jurisdiction of the federal government under Parliament's power to legislate "for the peace, order and good government of Canada" in the 2010 decision of *Quebec (Attorney General) v. Lacombe*, 2010 SCC 38.

Municipalities (and provinces), however, may be able to regulate the use of drones for reasons within their competence. Municipal by-laws would have to be drafted in a way that does not interfere with the federal regulation of drones or other areas of federal jurisdiction, or else risk being struck by a Court in the event of a constitutional challenge.

Provincial statutes must be related to one of the areas of provincial competence in section 92 of the *Constitution Act, 1867*. From those powers, provinces can delegate to municipalities.[51] In Ontario, the *Municipal Act, 2001*, S.O. 2001, c. 25 gives a broad scope of powers to municipalities:

> 7 (1) The powers of a municipality under this or any other Act shall be interpreted broadly so as to confer broad authority on the municipality to enable the municipality to govern its affairs as it considers appropriate and to enhance the municipality's ability to respond to municipal issues.

Single-tier municipalities may pass by-laws respecting the following matters, pursuant to section 10(2):

1. Governance structure of the municipality and its local boards;
2. Accountability and transparency of the municipality and its operations and of its local boards and their operations;
3. Financial management of the municipality and its local boards;
4. Public assets of the municipality acquired for the purpose of exercising its authority under this or any other Act;
5. Economic, social and environmental well-being of the municipality;
6. Health, safety and well-being of persons;
7. Services and things that the municipality is authorized to provide under subsection (1);
8. Protection of persons and property, including consumer protection;
9. Animals;
10. Structures, including fences and signs; and

[50] *Canada (AG) v. Ontario (AG)*, [1931] UKPC 93.
[51] *Constitution Act, 1867*, s.92(8).

11. Business licensing.[52]

It is conceivable that a municipality would want to regulate drones for a number of these purposes, in particular the economic, social, and environmental well-being of the municipality, the health, safety and well-being of persons, the protection of persons and property, animals, and structures.

However, even if a municipal by-law is related to an area of municipal competence, and does not directly conflict with federal regulation, the by-law may nonetheless be found to be of no force or effect upon challenge due to the doctrine of interjurisdictional immunity. The doctrine of interjurisdictional immunity provides that provincial and municipal laws impairing the federal exercise of a "core competence" will be adjudged to be inapplicable. An area of "core competence" is an area that comes within the essential jurisdiction (the "basic, minimum and unassailable content") of the legislative power in question. Municipal by-laws directly or indirectly regulating airports and helipads have repeatedly been struck down as encroaching on federal aeronautics jurisdiction. In particular, the location of aerodromes (areas where aircraft may take off and land) was held to be a core aspect of the federal aeronautics power by the Supreme Court of Canada in *Quebec (Attorney General) v. Canadian Owners and Pilots Association*, [2010] S.C.J. No. 39. It remains to be seen what courts will do with provincial or municipal attempts to regulate the operation of drones, such as where they may or may not be flown. Lower levels of government should bear this doctrine in mind when attempting to regulate any essential aspect of the operation of drones. Restricting the uses drones can be put to (for example, by prohibiting drones from being used for voyeurism) may be a safer avenue of municipal regulation than attempting to regulating the flight path or areas where drones may or may not be flown, which would directly conflict or overlap with federal regulations.

Examples of Municipal Drone Regulation in Canada

For the most part, Canadian municipalities have done very little to regulate drones locally. In some cases, there are municipal by-laws pre-dating modern drone technology, but which may nonetheless have the effect of regulating drone usage.

For example, some cities have existing parks by-laws restricting the use of remotely operated aircraft generally. In Ottawa, the Parks and Facilities By-Law bans the use of "motor-driven model airplanes, helicopters, rockets and boats", unless the Director of Parks and Recreation has designated the area for that purpose.[53] The cities of Windsor and Toronto have similar provisions in their parks by-laws, which prohibit the operation of "powered models of aircraft, rockets, watercraft or vehicles" unless authorized by a permit.[54] The term "model aircraft"

[52] Lower and/or upper-tier municipalities may also enact by-laws with respect to the same spheres of jurisdiction, depending on the tier: *Municipal Act, 2001*, S.O. 2001, c. 25 ["*Municipal Act*"], s.11.
[53] City of Ottawa By-Law No. 2004-276, s. 5(10).
[54] City of Windsor By-Law No. 200-2002, s. 6.3; Toronto Municipal Code, Chapter 608, Parks, s. 608-19 (originally enacted September 30, 2004).

is not defined in these by-laws. Assuming that model aircraft is given the same meaning as in the *Aeronautics Act*, which is a UAV used for recreational purposes only and weighing less than 35 kilograms, these by-laws may or may not be in conflict with the current federal regulations, depending on the location of the park in reference to aerodromes, buildings, people, etc. If a by-law conflicts with the federal regulations, it may be found to be invalid upon challenge if it is determined that it does not reasonably relate to one of the municipal areas of competence. As these are parks by-laws it is possible that they could be found to be reasonably related to the environmental well-being of the municipality, the health, safety and well-being of persons, or even the protection of animals. That said, the doctrine of interjurisdictional immunity (discussed above) may still apply to render the by-law inapplicable insofar as it relates to drones or other "aircraft".

Municipalities have also attempted to regulate drones though zoning by-laws, albeit unsuccessfully. The validity of these by-laws should be considered. In *Lake County (District) v. Kelowna Ogopogo Radio Controllers Assn.*, 2014 BCCA 189, the British Columbia Court of Appeal found that the use of an agriculturally-zoned property by a model aircraft club for flying model aircraft did not contravene the municipal zoning by-law, because the by-law in question listed "unpaved airstrip and heli pad" as permitted secondary uses of agriculturally zoned properties. Conversely, in *Comox Strathcona (Regional District) v. Hansen*, 2005 B.C.J. No. 365, the British Columbia Supreme Court, applying the doctrine of interjurisdictional immunity, held that a municipality improperly amended its zoning by-law by removing airports from the list of permitted uses for rural property. In that case, prior to the amendment of the by-law, the defendants had established a landing strip on their property, which was approved and registered by Transport Canada. The plaintiff municipality applied to the court for a declaration that the landing strip contravened the zoning by-law and a mandatory order that the defendants remove the landing strip. The court refused, finding that the removal of airports from the zoning by-law's list of permitted uses was *ultra vires*.

Examples of Municipal Drone Regulation in the United States

In the United States, aviation is also an area of federal competence, regulated by the Federal Aviation Administration (FAA). In December 2015, the FAA issued a "Fact Sheet" on state and local regulation of UAVs to give guidance to those jurisdictions on the ways in which they may or may not regulate UAVs.[55] States and local jurisdictions were not to regulate regarding flight altitude or path, operational bans, the navigable airspace, or equipment or training requirements.[56] Notably, the FAA has not issued a blanket preemption on local regulation. Instead, the FAA recommends that municipalities consult with the FAA so that the FAA may address preemption on a case-by-case basis.[57] Areas that are traditionally within state and local power, such as land

[55] Federal Aviation Administration, Office of the Chief Counsel, "State and Local Regulation of Unmanned Aircraft Systems (UAS) Fact Sheet", December 17, 2015 ["Fact Sheet"], available online: <https://www.faa.gov/uas/resources/uas_regulations_policy/media/uas_fact_sheet_final.pdf>.
[56] *Ibid.*
[57] National League of Cities, "Cities and Drones: What Cities Need to Know About Unmanned Aerial Vehicles (AUVs)", 2016 ["NLC"], p. 8, available online: <http://uavs.insct.org/wp-content/uploads/2016/09/NLC-Drone-

use, zoning, privacy, trespass, and law enforcement may be appropriate for local regulation as they fall outside the scope of federal power.[58] Some examples of laws which may be permissible for American municipalities to enact are: specifying that UAVs may not be used for voyeurism, and prohibitions on using UAVs for hunting or fishing, or to interfere with or harass an individual who is hunting or fishing.[59]

Though American municipalities seemingly have more constitutional leeway to regulate drones than Canadian municipalities, they have not done so, for the most part.[60] There are a few exceptions, however. Chicago and Miami have passed comprehensive drone legislation (and were the first major cities to do so).[61] Chicago's legislation codifies some FAA guidelines by prohibiting flying drones out of the operator's visual line of sight or above 400 feet. It also prohibits drones from flying within five miles of airports, electric generation facilities or substations, above open-air stadiums, and above people or private property without consent. It also prohibits flying over schools, hospitals, police stations, and places of worship.[62] Miami's legislation regulates recreational drones by prohibiting flying within half a mile of events in parks, stadiums, open spaces, plazas, streets, or over sporting or large venue special events.[63] Santa Clara and San Jose, California have passed similar legislation.[64] Based on the FAA's Fact Sheet, it seems unlikely that these laws would withstand constitutional scrutiny as they regulate flight altitude or path and navigable airspace.

MUNICIPAL USE OF DRONES

Advancing UAV technology offers municipalities any number of possible applications for drones. UAVs are a less expensive, more versatile, more effective, and safer option for public entities in a number of tasks currently performed by individuals or expensive private contractors. Currently, we are aware of a municipality planning to use drones for building inspection. It is easy to imagine municipal applications for UAVs in many other operations, including:

- Firefighting;
- Law enforcement;
- Disaster relief;
- Search and rescue;
- Environmental monitoring;
- Inspections of subterranean structures, such as subway tunnels and sewers;

Report.pdf>; McNeal, G., "Regulating Drones: What Municipal Lawyers Need to Know", *Municipal Lawyer*, Vol. 58, No. 2, March/April 2017 ["McNeal"].

[58] McNeal, *supra* note 57.

[59] Fact Sheet, *supra* note 55. Areas relating to criminal law were also listed in this document as criminal matters fall to the states in the United States. This is not the case in Canada, where criminal law is a matter of federal concern.

[60] States have been much more active in regulating drones than local governments have been. See NLC, *supra* note 57, pp.18-20.

[61] NLC, *supra* note 57, p.20.

[62] *Ibid*, p.21.

[63] *Ibid.*

[64] *Ibid.*

- Traffic monitoring and enforcement;
- Weather monitoring;
- Road maintenance;
- Construction;
- Event management;
- Land surveying;
- Pest control; etc.

At present, Canadian municipalities are just beginning to explore ways in which drones might practically be employed in their operations. This presents an ideal opportunity to ensure that operations are implemented in a sound manner with full consideration of applicable federal regulations, privacy law, and other risk management considerations.

International Examples of Municipal Drone Use

In the United States, a number of municipalities and local governments have begun or considered using drones for various tasks. Greensboro, North Carolina heard a proposal from a drone technology firm to install a $5.7 million unmanned aerial system that would launch automatically when a 911 call was received. The intention was that the drone would arrive at emergency incidents within 90 seconds, and give police a live feed of the scene.[65] In the same vein, researchers from the Delft University of Technology in the Netherlands have developed a prototype of an "ambulance drone" that carries defibrillator paddles and incorporates wireless communications technology that would allow emergency personnel to instruct people near a heart attack victim on how to use the paddles.[66]

Other municipalities have incorporated drones into non-emergency services. Somerville, Massachusetts uses drones to inspect municipal buildings' roofs after snow events in order to prevent snow-related roof collapses.[67] Other cities in Massachusetts have contracted with a private company to survey storm damage and monitor fires with drones.[68] The Tampa, Florida Port Authority is seeking FAA authority to use drones to survey port properties and construction projects, which port officials have estimated would save about $180,000 annually.[69]

Risk Management Considerations Associated with Municipal Drone Use

The benefits of UAVs must, of course, be balanced with various concerns and risks associated with government use of UAVs. Not only must government operators be in compliance with the federal regulations, but extra care must be taken with respect to the safety and privacy of

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[65] Arcieri, Katie, "Greensboro to consider $5.7M drone deal," Triad Business Journal, July 20, 2015.
[66] NLC, *supra* note 57, p. 11.
[67] NBC 4 New York, "Drones to Inspect Mass. City's Snow-Covered Roofs", February 20, 2015, available online: <http://www.nbcnewyork.com/news/national-international/Somerville-Drones-Video-Inspect-Snow-Roofs-292820781.html>.
[68] NLC, *supra* note 57, p.12.
[69] *Ibid*.

government employees, and the public at large. In this regard, proactive measures should be taken to protect data and personal information from being obtained by unauthorized third parties as well as to prevent third parties from assuming control of the UAV's flight path for malicious purposes (e.g., terrorism). Municipalities and provinces must also ensure that UAVs are being used only for lawful purposes. For example, the police must take care to ensure that any use of a UAV does not constitute an unreasonable search or seizure in violation of the *Canadian Charter of Rights and Freedoms*[70] ("the *Charter*").

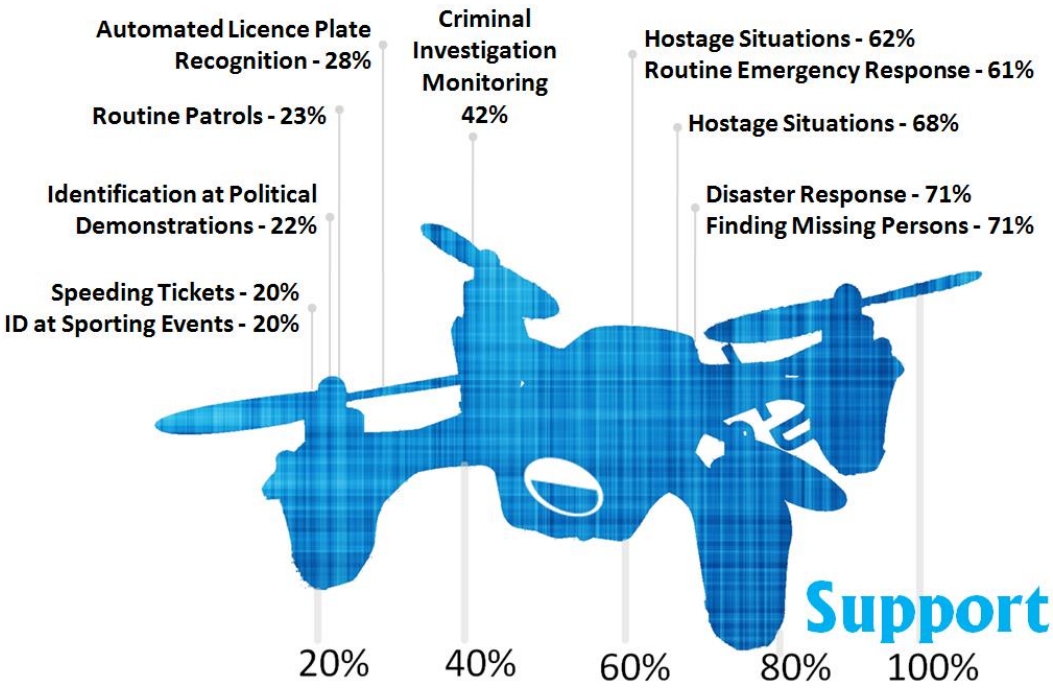
Another likely impact of increased UAV use in municipal operations is the increased expectations for the effectiveness of municipal inspection systems. Often lawsuits are defended on the basis that municipalities cannot be in all places at all times. This defence may be less effective when a municipality has drones at its disposal. In other words, the standard of care for municipal inspections may be effectively raised.

Political Considerations

It is worth pointing out that as of 2014, the overall public opinion of drones in Canada was low. In 2014, the Surveillance Studies Centre at Queen's University commissioned a national poll from the polling organization Vision Critical.[71] The study found that support for drone usage by both government and private groups dropped in nearly every situation when the adoption of UAV technology was proposed (as opposed to using a piloted aircraft).[72] The only use for drones that achieved widespread support was emergency services, which was supported by 65% of those polled.[73] The use of UAVs by law enforcement received the support of approximately 45% of those polled, while other forms of government use, such as government intelligence services/agencies, received even lower marks.[74]

When broken down by particular law enforcement tasks, public support is variable, with surveillance-type activities receiving the least approval and emergency response-type activities receiving the highest approval.

[70] *Constitution Act, 1982*, s. 8.
[71] Ciara Bracken-Roche et al, "Surveillance Drones: Privacy Implications of the Spread of Unmanned Aerial Vehicles (UACs) in Canada, a Report to the Office of the Privacy Commissioner of Canada, under the 2013-2014 Contributions Program", Surveillance Studies Centre, Queen's University, April 30, 2014 ["Bracken-Roche"].
[72] *Ibid*, page 38.
[73] *Ibid*, pages 38-39.
[74] *Ibid*, page. 38.



Source: Ciara Bracken-Roche et al, "Surveillance Drones: Privacy Implications of the Spread of Unmanned Aerial Vehicles (UACs) in Canada, a Report to the Office of the Privacy Commissioner of Canada, under the 2013-2014 Contributions Program", Surveillance Studies Centre, Queen's University, April 30, 2014

Canadians, like our American counterparts, are inherently suspicious of government intrusions into our private lives. The issue is amplified with drones, which have historically been best known to the public through their use in warfare and covert government operations. Before implementing any UAV program or policy, local governments should anticipate a skeptical response from their residents, and take measures to alleviate their concerns beforehand. Providing advance notice of any drone operations, when practicable, may be one such measure.

Privacy Considerations

The proliferation of UAVs pose unique challenges to privacy primarily due to the versatility of UAVs. They can gather information from a variety of vantage points without being seen. Most UAVs are equipped with cameras that can record and transmit images from increasing distances and with increasing resolutions. They are capable of acute and persistent tracking of individual activities, as well as systematic surveillance of a wide area. UAVs are much less costly than manned aircraft. Unlike CCTV, UAVs are not fixed in a specific vantage point or location and are able to physically track an individual's activities.[75]

UAVs are also different from standard video surveillance in the type of information they can collect. The Office of the Privacy Commissioner has written that, "[b]ecause of their technological capacity, the information that can be collected by UAVs could reveal 'far more than

[75] Office of the Privacy Commissioner of Canada, "Drones in Canada: Will the proliferation of domestic drone use in Canada raise new concerns for privacy?", March 2013 ["Privacy Commissioner"], p. 10.

the naked eye.'"[76] UAVs can be equipped with sensors, infrared or thermal imaging cameras, and facial recognition software can be applied to the images captured to identify the individuals pictured.[77] The information captured by UAVs can be correlated with our mobile devices, or connected to information captured by other UAVs in the same fleet.[78]

For all these reasons, the greatest privacy concerns with drones relate to outright surveillance, however, privacy will also be impacted by the incidental or accidental capture of personal information while using UAVs for other purposes. Drone footage captured during a building inspection, for example, may contain personal information about the residents of the building. If the footage is thereafter requested through a Freedom of Information request, or required to be produced in a lawsuit, the privacy of those individuals is at risk.

Canada's privacy laws are focused on the informational aspect of privacy. The federal Privacy Commissioner has cautioned, however, that drones "may well be a discernible manifestation of how other spheres of privacy, such as spatial and physical privacy, continue to be challenged by modern technologies."[79]

The existing and proposed regulations respecting drones are focused primarily on the safety of the operators and the public at large. Transport Canada's mandate is to promote a safe, secure and efficient transportation system,[80] and therefore, privacy is not necessarily within its jurisdiction. There are no statutes or regulations at the federal or provincial level respecting privacy issues in regards to drones specifically. As a result, the privacy implications of UAVs are dealt with under the general privacy law which governs all methods of collecting, using, storing, and destroying personal information.

Constitutional Privacy Considerations

Employing drones for government surveillance raises the eternal question of how to strike the right balance between the state's obligations to keep people safe and protect their privacy rights. No doubt due to the newness of this technology, no Canadian courts have commented on the constitutionality of UAV usage by public entities generally or for surveillance specifically, but it is only a matter of time before courts will have to consider the appropriate balance.[81] Some Canadian police services, including the Ontario Provincial Police (OPP), the Royal Canadian Mounted Police (RCMP), and Halton Regional Police have already started using UAVs for

[76] *Ibid*, p. 11.
[77] Dr. Cavoukian, Anne, "Privacy and Drones: Unmanned Aerial Vehicles", Information and Privacy Commissioner, Ontario, Canada, August 2012 ["Cavoukian"], pp. 2, 7.
[78] *Ibid*.
[79] Privacy Commissioner, *supra* note 75, pp. 11-12.
[80] Transport Canada website, "What We Do," online: <https://www.tc.gc.ca/eng/aboutus-whatwedo.htm>.
[81] Privacy Commissioner, *supra* note 75, p. 12.

"benign" purposes, such as clearing accident scenes, accident reconstruction, crime scene surveys, and search-and-rescue missions.[82]

In the United States, the Arlington, Texas Police Department uses drones for photographing crime scenes, searching for missing persons, and surveying damage after storms. Though the Arlington Police Department has stated that they will not use the drones for general surveillance or police pursuits, they did use one drone to monitor the scene of a seven-hour standoff with a homicide suspect in 2013.[83] Small American police forces from border towns have benefitted from the proximity of Predators (multi-million dollar aircraft best known for missions in warzones in the Middle East) operated by the Department of Homeland Security, which patrol the country's northern and southern borders. For example, in Lakota, North Dakota, the Department of Homeland Security offered to help the Nelson County Sheriff's Department determine whether men involved in a standoff on a local ranch were armed. The intelligence gathered by the drone allowed the Sheriff's Department to resolve the situation safely and make arrests. This is often cited as the first case where a UAV was used to arrest a U.S. citizen.[84]

In Canada, UAV surveillance raises a number of Charter concerns, particularly with respect to the Section 8 right to be free from unreasonable search and seizure. The "reasonableness" of drone surveillance, and the "reasonableness" of the expectations of privacy in public spaces, will be the questions at the centre of the debate.[85]

Charter Section 8 – Freedom from Unreasonable Search and Seizure

Section 8 of the Charter provides that, "Everyone has the right to be secure against unreasonable search or seizure." In the 1984 Supreme Court decision of *Hunter v. Southam Inc.*, [1984] 2 S.C.R. 145, Justice Dickson emphasized that the right against unreasonable searches and seizures guarantees a "broad and general right" to privacy. The right is not without limits, however, as individuals are only entitled to a "reasonable expectation" of privacy.[86] In other words, the right protects individuals from state surveillance in spaces where it would be reasonable to expect privacy, such as a person's home or vehicle.

Section 487.01(4) of the *Criminal Code* codified this with respect to video surveillance, by requiring police to obtain a warrant before conducting video surveillance of a person in circumstances in which the person has a reasonable expectation of privacy. It also authorizes the judge issuing the warrant to include "such terms and conditions as the judge considers advisable to ensure that the privacy of the person or of any other person is respected as much as possible".[87]

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[82] Quinn, J., "Police drones sparks debate over personal privacy", The Star, February 5, 2013 ["Quinn"]; Matys, F., "OPP using drones more and more in daily police activities", DurhamRegion.com, January 10, 2016 ["Matys"].
[83] NLC, *supra* note 57, p.11.
[84] Quinn, supra note 82; Matys, supra note 82.
[85] *Ibid*.
[86] *Hunter v. Southam Inc.*, [1984] 2 S.C.R. 145 ["*Hunter*"], para. 159.
[87] *Criminal Code*, R.S.C. 1985, c. C-46, s. 487.01(4).

There are no statutes respecting police use of drones specifically, but there is no reason why section 487.01(4) of the *Criminal Code* would not apply to video surveillance obtained by drone.[88]

The question of whether an individual maintains a reasonable expectation of privacy in public has been the subject of much debate. Typically, an individual does not have a reasonable expectation of privacy in what he or she knowingly displays in public. Nonetheless, a reasonable expectation of privacy has been held to exist in a host of situations, including public settings, because the right protects people, not places.[89]

Surveillance by closed circuit television (CCTV) may be the most analogous type of surveillance currently engaged in by municipalities. CCTV is prevalent on public transit and becoming more prevalent on city streets. In 2003, the federal Privacy Commissioner obtained an informal opinion from retired Supreme Court Justice Gerard La Forest regarding the legal implications of CCTV in public spaces. Justice La Forest concluded (without force of law) that CCTV for law enforcement purposes infringed the reasonable expectation of privacy and therefore violated section 8 of the Charter.[90] Justice La Forest recognized that the reasonable expectation of privacy is lowered in public spaces, but stressed the danger of comprehensive and continuous video surveillance in such domains. He wrote:

> "[General video surveillance] permits the police to systematically observe, often at high resolution and across broad spatial expanse, everyone present within the cameras' range. This type of video surveillance is equivalent to having individual police officers closely follow, 24 hours a day, every person within a certain geographical space. That would be a police state, not a free society. We may not have a reasonable expectation that the police will never observe our activities in public spaces, either incidentally or as part of a targeted investigation. But surely, it is reasonable to expect that they will not always do so."[91]

These remarks were written in 2003, before the recent dramatic advancement in digital photography and video technology, and certainly before the proliferation of UAV technology, which is still in its early growth stages. The technological capabilities of drone surveillance, especially when combined with accompanying facial recognition software or cell phone tracking, has the capability to be highly invasive, thus posing a threat to privacy in public spaces.

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[88] In 2016, the state of Florida added a section to its criminal code prohibiting the use of a drone to gather evidence or other information, unless a warrant is obtained authorizing the use of a drone, and grants an aggrieved party the right to initiate a civil action, including for damages, against a law enforcement agency who fails to abide by this requirement. See *Florida Title XLVII*, Chapter 934.50, ss. 3-5.

[89] Taylor, S., "Emerging Privacy Concerns in the Municipal Sector", presented at the International Municipal Lawyers Association San Diego Conference 2016, September 30, 2016 ["Taylor"], p.7, citing *Hunter*, *supra* note 86, para. 159.

[90] Office of the Privacy Commissioner of Canada, News Release, "Opinion by Justice Gerard La Forest", April 5, 2002, online: Office of the Privacy Commissioner News Releases <https://www.priv.gc.ca/en/opc-news/news-and-announcements/2002/opinion_020410/>.

[91] *Ibid*.

In 2006, the Privacy Commissioner of Canada published "Guidelines for the Use of Video Surveillance of Public Places by Police and Law Enforcement Authorities". The policy is with respect to video surveillance generally, but seemingly would apply to video surveillance obtained by drone as well, as the Guidelines "apply to continuous or periodic video recording, observing or monitoring of individuals in open, public spaces, in the absence of particularized suspicion of an individual or individuals."[92] The Guidelines are:

1. Video surveillance should only be deployed to address a real, pressing and substantial problem.
2. Video surveillance should be viewed as an exceptional step, only to be taken in absence of a less privacy-invasive alternative.
3. The impact of the proposed video surveillance on privacy should be assessed before it is undertaken.
4. Public consultation should precede any decision to introduce video surveillance;
5. The video surveillance must be consistent with applicable laws.
6. The video surveillance system should be tailored to minimize the impact on privacy.
7. The public should be advised that they will be under surveillance.
8. Fair information practices should be respected in collection, use, disclosure, retention and destruction of personal information;
9. Excessive or unnecessary intrusions on privacy should be discouraged;
10. System operators should be privacy-sensitive;
11. Security of the equipment and images should be assured;
12. The right of individuals to have access to their personal information should be respected;
13. The video surveillance system should be subject to independent audit and evaluation;
14. The use of video surveillance should be governed by an explicit policy; and
15. The public should have a right to know about the video surveillance system that has been adopted.[93]

In determining whether an individual maintains a reasonable expectation of privacy in public spaces, Canadian courts have adopted a contextual approach that takes into account the totality of the circumstances.[94] Courts will consider a variety of factors, namely the place in which state intrusion occurred and the purposes of the intrusion. In 1992, the Supreme Court of Canada found that there was a low expectation of privacy while driving on a public road.[95] On the other

[92] Office of the Privacy Commissioner of Canada, "Guidelines for the Use of Video Surveillance of Public Places by Police and Law Enforcement Authorities", March 2006, available online: <http://eee.priv.gc.ca/en/privacy-topics/public-safety-and-law-enforcement/vs_060301>.
[93] *Ibid*.
[94] *R. v. Edwards*, [1996] 1 S.C.R. 128.
[95] *R. v. Wise*, [1992] 1 S.C.R. 526.

hand, in 2011 the Supreme Court of British Columbia held that individuals maintained a reasonable, albeit reduced, expectation of privacy in a public park.[96]

The federal Privacy Commissioner, citing American legislative attorney Richard M. Thompson II, has theorized that the "reasonableness" of drone surveillance will likely be informed by three factors:

1. Location of the search;
2. The sophistication of the technology used; and
3. Society's conception of privacy "in an age of rapid technological advancement".[97]

It is possible that the "reasonableness" of an expectation of privacy will shift as UAVs become normalized in society. The current rarity of drone use "may have some bearing on the analysis of what is 'reasonable' … [in] the current environment the general public would likely find it exceedingly unusual to see a drone flying over their home taking surveillance photographs. However this could begin to shift as UAVs proliferate and become more accessible to governments, private companies and even citizens."[98]

Privacy in the Civil Context

There is no privacy legislation in Canada specific to drones, but all provinces, along with the federal government, have enacted general privacy legislation that protects individuals' privacy from public institutions with a mechanism that provides a right of access to documents collected by public entities. These statutes protect individual privacy rights by limiting unwarranted collection and disclosure of individuals' personal information by public institutions, and are accompanied by guidelines established by the provincial privacy commissions.

In Ontario, the three main civil statutes to consider are:

1. *Personal Information Protection and Electronic Documents Act*, S.C. 2000, c. 5. ("*PIPEDA*"), which governs the collection, use and disclosure of personal information about individuals by commercial or private organizations;

2. *Municipal Freedom of Information and Protection of Privacy Act*, R.S.O. c. M.56 ("*MFIPPA*"), which protects the privacy of individuals with respect to personal information held by municipalities and provides individuals with a right of access to that information; and

[96] *R. v. Rudiger*, 2011 BCSC 1397 at para. 92.
[97] Privacy Commissioner, *supra* note 75, p. 12.
[98] *Ibid*, p. 12.

3. *Privacy Act*, R.S.C., 1995, c. P-21 ("*Privacy Act*"), which governs the collection and retention of personal information about individuals by the federal government of Canada.

PIPEDA

PIPEDA is concerned with commercial collection, use and disclosure of private information and as such is primarily applicable to private sector organizations.[99] *PIPEDA* defines commercial activity as, "any particular transaction, act or conduct or any regular course of conduct that is of a commercial character, including the selling, bartering or leasing of donor, membership or other fundraising lists."[100] "Organization" is defined as including "an association, a partnership, a person and a trade union."[101]

The Office of the Privacy Commissioner of Canada has issued a statement explaining that, "[w]hile municipalities, educational institutions and hospitals may occasionally provide services on a fee basis, they are not, on the whole, engaged in trade and commerce as contemplated by the Canadian Constitution." Therefore, *PIPEDA* does not apply to the core activities of municipalities. "Core activities" are those activities that are central to the mandate and responsibilities of municipalities.[102]

Providing a service for a fee does not necessarily trigger the application of *PIPEDA* if the service is part of the institution's core activities. A municipality, may become subject to *PIPEDA* if it engages in a non-core commercial activity, unless substantially similar provincial legislation applies.[103] An example of a "non-core commercial activity" would be if the municipality was using aerial photos taken at a city event in tourism advertising. In that case, the consent of any identifiable individuals depicted in the photos would be required.

Subject to limited exceptions, *PIPEDA* requires consent for the collection of personal information. Further, collection and use of personal information can only be for purposes that a reasonable person would consider appropriate in the circumstances. The organization collecting the information must consider whether there is a less privacy-invasive means of obtaining the information.[104]

Privacy Act

The *Privacy Act* is applicable only to the federal government and as such is of limited value to municipalities. It is nonetheless worth mentioning for the concept of Privacy Impact

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[99] *Ibid*, p. 13
[100] *Personal Information Protection and Electronic Documents Act*, S.C. 2000, c. 5. ["*PIPEDA*"], s. 2.
[101] *Ibid*, s. 2.
[102] Office of the Privacy Commissioner of Canada, "Fact Sheets: Municipalities, Universities, Schools, and Hospitals", available online: <https://www.priv.gc.ca/en/privacy-topics/privacy-laws-in-canada/the-personal-information-protection-and-electronic-documents-act-pipeda/02_05_d_25/?wbdisable=true>.
[103] *Ibid*.
[104] Privacy Commissioner, *supra* note 75, p. 13

Assessments, which may be a useful tool for municipalities when designing their own drone usage policies.[105] The relevant Treasury Board Directive[106] requires federal government departments to conduct a Privacy Impact Assessment (PIA) before initiating any new programs or activities impacting on privacy. The PIA requires analysis and demonstration of whether the proposed initiative is necessary to achieve a specific and legitimate purpose, whether the initiative is likely to be effective in achieving that purpose, that the intrusion on privacy is proportional to the benefit to be derived, and that no other less privacy-invasive alternative would achieve the same purpose.[107]

MFIPPA

MFIPPA is the primary piece of legislation in Ontario governing the collection and use of individuals' personal information by municipalities. Section 28(2) of *MFIPPA* provides that:

> No person shall collect personal information on behalf of an institution unless the collection is specifically authorized by statute, used for the purposes of law enforcement or necessary to the proper administration of a lawfully authorized activity.[108]

Depending on the use for which the UAV is used, municipalities may be able to rely on any of these three conditions.

a) "Authorized by Statute"

The collection of personal information by a public institution is "authorized by statute" only if "the specific types of personal information collected [are] expressly described in a statute or in a regulation that has been authorized by general reference to the activity in a statute".[109] The context in which the UAV is used will determine whether the type of information collected is expressly described in a statute. For example, Ontario's *Highway Traffic Act*, R.S.O. 1990, c. H.8, s. 205.0.1 explicitly provides that the Ministry of Transportation may request and collect information about motor vehicle drivers from any public body or related government. Another example is the *Building Code Act*, 1992, S.O. 1992, c. 23, which allows municipal building inspectors to make examinations or take tests, samples or photographs of private properties without a warrant.[110]

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[105] When defending liability claims, being able to point to a comprehensive risk management assessment and policy can be a potential defence to a claim. See e.g. *Campbell v. Bruce (County)*, 2015 ONSC 230, affirmed 2016 ONCA 371 (leave to appeal refused, 2017 CanLII 6748).
[106] Government of Canada Directive on Privacy Impact Assessment, April 1, 2010 ["Directive"], available online: <https://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=18308>.
[107] Privacy Commissioner, *supra* note 75, p. 13, citing Directive, *ibid*.
[108] All other provinces except Saskatchewan and Quebec contain similar provisions in their legislation. See Taylor, *supra* note 89, page 11.
[109] [1996] O.I.P.C. No. 449, para. 17.
[110] *Building Code Act, 1992*, S.O. 1992, c. 23, ss. 15(2) and 15(8)(1).

b) "Used for the purposes of law enforcement"

The second exception is where the collection of personal information via UAV is necessary for the purpose of law enforcement. "Law enforcement" is defined at section 2(1) of the *MFIPPA* to include policing, investigations or inspections that lead or could lead to proceedings in a court or tribunal if a penalty or sanction could be imposed in those proceedings, or the conduct of court or tribunal proceedings.

As previously discussed, Canadian police services are already using drones for various law enforcement tasks, including clearing accident scenes, accident reconstruction, crime scene surveys, and search-and-rescue missions.[111]

c) "Necessary to the proper administration of a lawfully authorized activity"

This condition allows a broader spectrum of activities to be justified under local privacy legislations by not limiting UAV usage to a specific purpose. It shifts the focus to the function of the public institution and the goals it is mandated to accomplish. Both the courts and the Privacy Commissioners of Canada have considered the application of this approach and the consensus among these authorities is that,

> "[I]n order to meet the necessity condition, the institution must show that each item or class of personal information that is to be collected is necessary to properly administer the lawfully authorized activity. Consequently, where the personal information would merely be helpful to the activity, it is not "necessary" within the meaning of the Act. Similarly, where the purpose can be accomplished another way, the institution is obliged to choose the other route." [112]

The endless possible uses of drones by municipalities, and the endless kinds of information that could be collected, make it impossible to analyze every possible use under the necessity condition in this paper. Each use will have to be assessed on a case-by-case basis to determine if it meets one of the three conditions of section 28(2) of *MFIPPA*.

Disclosure of Personal Information Collected by UAV

Section 4(1) of *MFIPPA* gives every person a right of access to a record or a part of a record in the custody or under the control of a municipality, subject to a few exceptions. Any municipality utilizing a UAV will also have to consider that *MFIPPA* requests for records (commonly known as freedom of information requests) may be received that require the disclosure of information collected by the UAV. Such records may contain advertently or inadvertently obtained personal information that, if disclosed, may constitute an invasion of privacy.

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[111] Quinn, *supra* note 82; Matys, *supra* note 82.
[112] Taylor, *supra* note 89, p.13, citing *Cash Converters Canada Inc. v. Oshawa (City)*, 2007 ONCA 502, para. 40.

Section 14(1)(f) of *MFIPPA* requires municipalities to refuse to disclose personal information to any person, other than the individual to whom the information relates, if the disclosure would constitute an unjustified invasion of personal privacy. The personal privacy exemption is not absolute, however. Section 14(2) lists several factors that should be considered in determining whether a disclosure of personal information constitutes an unjustified invasion of personal privacy. Where methods of redaction are available that would render the individuals anonymous, the records should be redacted and disclosed.[113]

MFIPPA section 14(3) lists several situations in which a disclosure of personal information is presumed to constitute an unjustified invasion of privacy. These situations involve information relating to a person's medical history, finances, racial or ethnic origin, sexual orientation or religious or political associations, etc.

The Privacy Commissioner has recommended implementing technological solutions to prevent this information from being accidentally or incidentally collected in the first place, such as adjusting the focus and sensitivity of sensors to collect the minimum amount of data required.[114]

Municipalities should be equipped to handle requests for records that include other individuals' personal information, for example by acquiring blurring technology to hide the faces and other identifying features of individuals incidentally caught in the footage.

Common Law

Intrusion Upon Seclusion

Ontario's privacy legislation does not create an actionable tort for violation of privacy, as several other provinces have done,[115] however, in *Jones v. Tsige*, 2012 ONCA 32 ("*Jones*") the Ontario Court of Appeal recognized a common law tort of "intrusion upon seclusion". This was the first instance of an Ontario court recognizing a cause of action in tort for privacy violations.

Jones involved the unauthorized access of the plaintiff's bank records by the defendant on numerous occasions, over an extended period of time. This is quite different than the type of information collected by a drone, but it is easy to analogize targeted surveillance by a drone, for example, as an intrusion upon seclusion.

The Ontario Court of Appeal held that the tort was established where:

1. The Defendant acted intentionally;
2. The Plaintiff's private affairs were invaded without lawful jurisdiction; and

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[113] *Municipal Freedom of Information and Protection of Privacy Act*, R.S.O. c. M.56 ["*MFIPPA*"], s.4(2).
[114] Cavoukian, *supra* note 77.
[115] The *Privacy Acts* in British Columbia, Newfoundland, Manitoba and Saskatchewan make it a tort, actionable without proof of damage, for a person to willfully and without a claim of right, violate the privacy of another, which includes violation by eavesdropping or surveillance. See Taylor, *supra* note 89, p.10.

3. A reasonable person would regard the conduct as highly offensive, causing distress, humiliation, or anguish.

The Court suggested that the types of intrusions which would be found to be highly offensive were those upon a person's financial or health records, sexual practices, sexual orientation, employment, diary, or private correspondence.

The tort is only available where the conduct was deliberate and there were significant invasions of an individual's privacy, yet, the Court capped non-pecuniary damages for these types of claims at $20,000.00.

It seems unlikely that incidental or accidental capture of personal information by a municipal UAV would meet the high standard of deliberateness required to make out the tort. If a municipal or police employee was to engage in unjustified surveillance, however, the municipality could be found liable for intrusion upon seclusion. Municipalities are advised to ensure that UAV operators involved in its operations undergo privacy training.

Public Disclosure of Private Facts

In 2016, Justice Stinson of the Ontario Superior Court of Justice recognized another new privacy-related tort, public disclosure of private facts, in *Doe 464533 v. N.D.*, 2016 ONSC 541 ("*Doe*"). *Doe* involve a situation of so-called "revenge porn". The plaintiff's ex-boyfriend had published intimate photos of her online without her knowledge or consent.

The defendant was noted in default, so the action proceeded undefended. This case therefore may not be the strongest precedent for the recognition of a new tort, however, the decision was subsequently followed in the Kitchener Small Claims Court decision of *Halley v. McCann*, [2016] O.J. No. 4672.

Justice Stinson held that in order for the tort to be established:

1. The plaintiff must demonstrate that the defendant gave publicity to a matter concerning the private life of the plaintiff;
2. That the matter publicized, or the act of publication itself, would be highly offensive to a reasonable person; and
3. That the matter publicized, or the act of publication, is not of legitimate concern to the public.

Justice Stinson awarded $25,000 in general damages (more than the cap set for intrusion upon seclusion in *Jones*).

Justice Dow subsequently set aside the noting in default without commenting on the new tort,[116] but given the sparsity of jurisprudence on tortious invasion of privacy, Justice Stinson's decision may nonetheless prove to be a useful precedent for future plaintiffs.

It is difficult to imagine a situation in which a municipality would intentionally publicize matters of this nature, however, accidental "public disclosure" is a risk if, for example, the information shared in response to an *MFIPPA* request for information was not carefully vetted before being disclosed or if personal information collected by a drone was obtained by an unauthorized third party.

Insurance Considerations

The liability exposures faced by drone operators are wide-ranging and include personal injury, property damage and/or economic loss as a result of losses of control or collisions, as well as tortious liability for invasions of privacy, and potentially even trespass.[117]

Currently, section 606.02(8) of the CARs requires drone operators to carry $100,000 in liability insurance (assuming the drone weighs less than 1,043 kilograms; if it weighs more, a higher amount of liability insurance is required). Proof of adequate liability insurance is required in order to obtain an SFOC.[118] Even under the current SFOC exemptions, $100,000 in liability insurance is required in order to qualify for the exemption.

Once the new regulations come into effect on January 15, 2018, all operators of drones weighing more than 250 grams will be required to carry at least $100,000 in liability insurance, whether or not the drone is used recreationally. Transport Canada estimates that the annual liability insurance premium for commercial/institutional drone users will be $500-$1,000.[119]

Damages awards for some exposures, e.g., privacy violations, have thus far been minimal, but could give rise to significant class action exposure if a large amount of data or personal information is involved. Additionally, the capacity for damages for other exposures, e.g., personal injury and property damage, are great when one considers the worst-case scenario of a negligently

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[116] *Doe v. N.D.*, 2016 ONSC 4920, leave to appeal refused, 2017 ONSC 127.

[117] Another interesting potential source of liability for municipal (or provincial) drone operations is the question of whether the substitution of a drone for a job previously done by a human would raise or meet the existing the standard of care in a situation where the municipality is alleged to have conducted a task negligently. For example, if a city implements building inspections by drone rather than an individual, a plaintiff subsequently alleging negligent inspection may argue that the use of a drone is not sufficient to meet the standard of care. On the other hand, a plaintiff may allege that a municipality should have caught something through the use of the drone that may not have been caught by a human, effectively raising the standard of care. Further, if tasks previously completed by independent contractors are taken over by a municipality with use of the drone, a municipality will no longer be able to shift liability onto that independent contractor in the event of a lawsuit. These types of claims, however, would likely be covered under the municipality's standard commercial general liability policy as it is not a liability incurred as a direct result of the drone.

[118] Staff Instruction, *supra* note 16, para. 6.31.

[119] Canada Gazette, *supra* note 35.

or maliciously-operated drone colliding with a commercial aircraft. With that in mind, it would be prudent to obtain insurance with a much greater policy limit than $100,000.

The Transport Canada Staff Instruction regarding the review and processing of SFOC applications cautions that most general company liability insurance policies do not cover the operation of aircraft. UAV operators – and entities with vicarious liability exposure for same – must therefore take care to ensure that they have an appropriate insurance policy.[120] The policy should be an aviation-specific UAV policy with hull (damage to the UAV itself) and liability coverage. General liability coverage may also suffice so long as it has adequate limits and includes coverage for UAV operations.

To our knowledge, most municipal/public sector liability insurance policies now include at least optional coverage for liability arising from drone operations, but there are significant differences between policy wordings. Policies should be reviewed in detail.

Where municipal drone operations make use of contracted third party UAV operators, it will be essential to require the third party operator to submit an insurance certificate evidencing sufficient insurance limits and the addition of the municipality as an additional insured under the contractor's insurance policy. Again, due to the variability of coverage under different policies, any specific requirement for coverage should be set out in the contract between the municipality and third party operator.

Options for liability insurance for UAV operations will likely increase as the UAV market continues to grow.[121]

CONCLUSION

Drones offer infinite possibilities for municipal governments, just as they do for private sector users. As drone technology continues to becomes more sophisticated, uses we may never have dreamed of in the past may soon become commonplace. At the same time, however, there are multiple complex risks posed by drones which governments must confront, not the least of which arise from the use of drones in their own operations. Beyond ensuring that drones are operated in accordance with federal aviation regulations and all applicable privacy legislation, municipalities must consider the multiple potential sources of liability to which they may be exposed and ensure that they are adequately protected from an insurance standpoint. The risks and liability exposures will vary depending on the use that is being made of drones – the uses are already diverse and will likely continue to increase in scope.

For municipalities seeking to make use of drones, it is advisable that their municipal Councils pass resolutions implementing comprehensive drone usage policies, which should address the following subjects:

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[120] Staff Instruction, *supra* note 16, para.6.31(2).

[121] As has occurred with the development of motor vehicle insurance policies for Uber drivers.

1. Compliance with federal regulations;
2. Pilot training and licensing;
3. Other public safety considerations, including time and place of drone operations;
4. Occupational health and safety of municipal employees;
5. Privacy considerations, including the collection, retention, destruction, and disclosure of personal information collected by drone (if not already addressed in other municipal policies); and
6. Insurance requirements.

Having in place a comprehensive policy on drone usage will assist in ensuring that all relevant safety, security, privacy and legal risks are identified and addressed in the case of each application.

Boghosian + Allen LLP has drafted several municipal policies and by-laws relating to municipalities' own use of drones. Please do not hesitate to contact the writer at spersaud@boglaw.ca with any such inquiries.