



MEMO

To: Board of Public Safety

From: Rick Brown, Director of Public Works

Date: May 3, 2016

Re: Use of Unmanned Aircraft Systems (UAS)

As you may recall, last fall the issue of Drones or Unmanned Aircraft Systems (UAS) was forwarded to the Board of Public Safety at the request of the Planning and Zoning Commission. The Department of Planning, is requesting to amend Chapter 415 of the City of Wildwood's Code of Ordinances by adding new requirements to Section 415.380, Miscellaneous Regulations, to ensure the use of drones complies with air space rights associated with public and privately-owned properties in the City of Wildwood. At the September 2015 meeting, the Board approved a motion to move forward with the preparation of the requested ordinance modifications.

However, before this item is re-introduced to the Planning and Zoning Commission, it has been requested by the Department of Planning, that the Board of Public Safety provide a formal letter of recommendation on this matter. Therefore, I have prepared the attached information report for your review and approval. Once the information report is deemed acceptable, and is approved by the Board, it will be forwarded back to the Planning and Zoning Commission as a formal letter of recommendation from the Board of Public Safety.

I will be available for discussion of this item at the May 5, 2016 Board of Public Safety meeting.

RCB



INFORMATION REPORT

Prepared by the Department of Public Works

May 5, 2016 Meeting

Nature of Request: The City of Wildwood Planning and Zoning Commission, c/o Department of Planning, is requesting to amend Chapter 415 of the City of Wildwood's Code of Ordinances by adding new requirements to Section 415.380 Miscellaneous Regulations to ensure the use of drones in all zoning district designations complies with air space rights associated with public and privately-owned properties in the City of Wildwood. (Wards – All)

Recommendation: The Department of Public Works is recommending the Board of Public Safety approve the above request.

BACKGROUND

The use of Unmanned Aerial Systems (UAS), or as they are more commonly known, drones, in airspace across the world is not a new phenomenon, but has surprisingly changed from defense-related activities and governmental services to commercial applications and now personal use much more quickly than many had anticipated. The use of drones for commercial purposes is being addressed by the federal government, albeit somewhat slowly, which has led to the individual States and local governments creating legislative initiatives to better protect private properties from a number of potential privacy issues. This approach on the part of the federal government mirrors to a degree its response to the telecommunications industry and the development of its network of towers and other facilities in the mid-1980, within St. Louis County.

UAS's come in a variety of shapes and sizes and serve diverse purposes. It should be noted that there are three different types of UAS's:

- Public (Government)
- Civil Operations (Commercial)
- Model Aircraft

CURRENT REGULATIONS

In 2012, under Public Law 112-95, the FAA Modernization and Reform Act (FMRA), the FAA is required to develop a comprehensive plan to safely accelerate the integration of civil, unmanned aircraft systems into the national airspace system. Federal regulation of UAS's is currently evolving. The FAA is taking an incremental approach to this task; however, regulations for small, commercial UAS's (under 55 lbs.) are now being finalized.

Small UAS Notice of Proposed Rulemaking (NPRM)

The Department of Transportation's Federal Aviation Administration has proposed a framework of regulations that would allow routine use of certain small unmanned aircraft systems (UAS) in today's aviation system, while maintaining flexibility to accommodate future technological innovations. The FAA's proposal offers safety rules for small UAS (under 55 pounds) conducting non-recreational operations. The rule would limit flights to daylight and visual-line-of-sight operations. It also addresses height restrictions, operator certification, optional use of a visual observer, aircraft registration and marking, and operational limits.

The new rules would not apply to model aircraft. However, model aircraft operators must continue to satisfy all of the criteria specified in Sec. 336 of Public Law 112-95, including the stipulation that they be operated only for hobby or recreational purposes.

The 60-day public comment period for the small UAS Notice of Proposed Rulemaking closed on April 24, 2015.

Model Aircraft Operations

Model aircraft operations are for hobby or recreational purposes only. As noted above, the statutory parameters of a model aircraft operation are outlined in Section 336 of Public Law 112-95 (the FAA Modernization and Reform Act of 2012). Individuals who fly within the scope of these parameters do not require permission to operate their UAS; however, any flight outside these parameters (including any non-hobby, non-recreational operation) requires FAA authorization. For example, using a UAS to take photos for your personal use is recreational; using the same device to take photographs or videos for compensation or sale to another individual would be considered a non-recreational operation.

The FAA has partnered with several industry associations to promote "Know Before You Fly", a campaign to educate the public about using unmanned aircraft safely and responsibly. Individuals flying for hobby or recreation are strongly encouraged to follow safety guidelines, which include:

- Fly below 400 feet and remain clear of surrounding obstacles
- Keep the aircraft within visual line of sight at all times
- Remain well clear of and do not interfere with manned aircraft operations
- Don't fly within 5 miles of an airport unless you contact the airport and control tower before flying
- Don't fly near people or stadiums
- Don't fly an aircraft that weighs more than 55 lbs

- Don't be careless or reckless with your unmanned aircraft – you could be fined for endangering people or other aircraft

Although the Federal Aviation Administration (FAA) has promulgated regulations through its register process for UAS operated for commercial purposes, those regulations do not apply directly to the hobbyist as this was omitted under the requirements of Public Law 112-95. While, these items have been applauded by the hobby industry for their relative reasonableness, there may be concerns about the extent of flexibility that might exist therein and enforcement effectiveness. Several federal legislators expressed concerns about how the privacy issues were not addressed

Additionally, other organizations have partnered with the Federal Aviation Administration (FAA) to promulgate supplemental rules under a combined campaign named “Know Before You Fly” and these components include the following:

- a. Follow community-based safety guidelines, as developed by organizations such as the [Academy of Model Aeronautics](#) (AMA).
- b. Fly no higher than 400 feet and remain below any surrounding obstacles when possible.
- c. Keep your sUAS in eyesight at all times, and use an observer to assist if needed.
- d. Remain well clear of and do not interfere with manned aircraft operations, and you must see and avoid other aircraft and obstacles at all times.
- e. Do not intentionally fly over unprotected persons or moving vehicles, and remain at least 25 feet away from individuals and vulnerable property.
- f. Contact the airport and control tower before flying within five miles of an airport or heliport. (Read about best practices [here](#))
- g. Do not fly in adverse weather conditions such as in high winds or reduced visibility.
- h. Do not fly under the influence of alcohol or drugs.
- i. Ensure the operating environment is safe and that the operator is competent and proficient in the operation of the sUAS.
- j. Do not fly near or over sensitive infrastructure or property such as power stations, water treatment facilities, correctional facilities, heavily traveled roadways, government facilities, etc.
- k. Check and follow all local laws and ordinances before flying over private property.
- l. Do not conduct surveillance or photograph persons in areas where there is an expectation of privacy without the individual’s permission (see AMA’s [privacy policy](#)).

Some of these guidelines reflect the regulations and rules of the federal government, but all of them, regardless of origins, define a hobby or enterprise that needs to be appropriately regulated to protect the public’s health, safety, and general welfare.

Summary of the Small UAS Notice of Proposed Rulemaking

Operational Limitations

- Visual line-of-sight (VLOS) only; the unmanned aircraft must remain within VLOS of the operator or visual observer.
- At all times the small unmanned aircraft must remain close enough to the operator for the operator to be capable of seeing the aircraft with vision unaided by any device other than corrective lenses.

- Small unmanned aircraft may not operate over any persons not directly involved in the operation.
- Daylight-only operations (official sunrise to official sunset, local time).
- Must yield right-of-way to other aircraft, manned or unmanned.
- May use visual observer (VO) but not required.
- First-person view camera cannot satisfy “see-and-avoid” requirement but can be used as long as requirement is satisfied in other ways.
- Maximum airspeed of 100 mph (87 knots).
- Maximum altitude of 500 feet above ground level.
- Minimum weather visibility of 3 miles from control station.
- No operations are allowed in Class A (18,000 feet & above) airspace.
- Operations in Class B, C, D and E airspace are allowed with the required ATC permission.
- Operations in Class G airspace are allowed without ATC permission
- No person may act as an operator or VO for more than one unmanned aircraft operation at one time.
- No careless or reckless operations.
- Requires preflight inspection by the operator.
- A person may not operate a small unmanned aircraft if he or she knows or has reason to know of any physical or mental condition that would interfere with the safe operation of a small UAS.
- Proposes a microUAS option that would allow operations in Class G airspace, over people not involved in the operation, provided the operator certifies he or she has the requisite aeronautical knowledge to perform the operation.

Operator Certification and Responsibilities

- Pilots of small UAS would be considered “operators”
 - Operators would be required to:
 - Pass an initial aeronautical knowledge test at an FAA-approved knowledge testing center.
 - Be vetted by the Transportation Security Administration.
 - Obtain an unmanned aircraft operator certificate with a small UAS rating (like existing pilot airman certificates, never expires).
 - Pass a recurrent aeronautical knowledge test every 24 months.
 - Be at least 17 years old.
 - Make available to the FAA, upon request, the small UAS for inspection or testing, and any associated documents/records required to be kept under the proposed rule.
 - Report an accident to the FAA within 10 days of any operation that results in injury or property damage.
 - Conduct a preflight inspection, to include specific aircraft and control station systems checks, to ensure the small UAS is safe for operation.

Aircraft Requirements

- FAA airworthiness certification is not required. However, the operator must maintain a small UAS in condition for safe operation and prior to flight must inspect the UAS to ensure that it is in a condition for safe operation. Aircraft registration is required.

- Aircraft markings are required (same requirements that apply to all other aircraft). If aircraft is too small to display markings in standard size, then the aircraft simply needs to display markings in the largest practicable manner.

Model Aircraft

- Proposed rule would not apply to model aircraft that satisfy all of the criteria specified in Section 336 of Public Law 112-95.
- The proposed rule would codify the FAA’s enforcement authority in part 101 by prohibiting model aircraft operators from endangering the safety of the NAS.

FAA Requirements for UAS Registration

Anyone who owns a small unmanned aircraft that weighs more than 0.55 lbs. (250g) and less than 55 lbs. (25kg) must register with the Federal Aviation Administration’s UAS registry before they fly outdoors. People who do not register could face civil and criminal penalties.

Who must register a UAS?

- The owner must be:
 - 13 years of age or older. (If the owner is less than 13 years of age, a person 13 years of age or older must register the small unmanned aircraft.)
 - A U.S. citizen or legal permanent resident.

Which unmanned aircraft do I have to register?

- Owners must register their UAS online if it meets the following guidelines:
 - Weighs more than 0.55 lbs. (250 g) and less than 55 lbs. (25 kg). Unmanned Aircraft weighing more than 55 lbs. cannot use this registration process and must register using the Aircraft Registry process.
- Owners must register their UAS by paper if it meets the following guidelines:
 - Your Aircraft weighs more than 55 lbs
 - You intend to operate your aircraft outside of the United States
 - Your aircraft is owned by a trustee
 - The aircraft owner uses a voting trust to meet U.S. Citizenship requirements

CURRENT REQUEST

To this end, the Planning and Zoning Commission is seeking the direction of the Board of Public Safety on whether Wildwood should memorialize the appropriate regulations and rules, as part of its Zoning Ordinance, and, thereby, add a local enforcement component to their application for the public’s health, safety, and general welfare. Principal among the issues of discussion on this matter are individuals’ right to privacy and security from trespass. These rights, although not viewed by hobbyists as being effected by the use of small drones, remain one (1) of the major focus points of discussion across the country.

ANALYSIS

The general public, a wide variety of organizations, including private sector (e.g., commercial companies), non-governmental (e.g., volunteer organizations), and governmental entities (e.g., local agencies) continue to demonstrate significant interest in UAS. The benefits offered by this type of aircraft are substantial and the

FAA is committed to integrating UAS into the National Airspace System (NAS). This introduction, however, appears focused primarily on safety and security considerations with regard to the NAS by commercial UAS operators, and less so the everyday use of UAS by the hobbyist, and without any concern for privacy issues.

There is evidence of a considerable increase in the unauthorized use of small, inexpensive Unmanned Aircraft Systems (UAS) by individuals and organizations, including companies. It is important to note that the FAA retains the responsibility for enforcing Federal Aviation Regulations, including those applicable to the use of UAS. The FAA recognizes though that State and local Law Enforcement Agencies (LEA) are often in the best position to deter, detect, immediately investigate, and, as appropriate, pursue enforcement actions to stop unauthorized or unsafe UAS operations.

Model Aircraft Operations

An important distinction to be aware of is whether the UAS is being operated for hobby or recreational purposes or for some other purpose. This distinction is important because there are specific requirements in the FAA Modernization and Reform Act of 2012, Public Law 112-95, (the Act) that pertain to “Model Aircraft” operations, which are conducted solely for hobby or recreational purposes. While flying model aircraft for hobby or recreational purposes does not require FAA approval, all model aircraft operators must operate safely and in accordance with the law. The FAA provides guidance and information to individual UAS operators (for hobby or recreational purpose) about how they can operate safely under current regulations and laws.

Model Aircraft that Operate in a Careless or Reckless Manner

Section 336(b) of the Act, however, makes it clear that the FAA has the authority under its existing regulations to pursue legal enforcement action against persons operating Model Aircraft when the operations endanger the safety of the NAS, even if they are operating in accordance with section 336(a) and 336(c). So, for example, a Model Aircraft operation conducted in accordance with section 336(a) and (c) may be subject to an enforcement action for violation of 14 C.F.R. § 91.13 if the operation is conducted in a careless or reckless manner so as to endanger the life or property of another.

Safety

The use of drones continues to be in the news with frequently cited reports of unauthorized UAS operations in close proximity to airports, encroaching into commercial airlines’ flight paths, trespassing onto individuals’ properties, or crashing into buildings. Collectively, the instances appear to be limited, but the discussion of needed regulations and rules in this regard should be considered sooner rather than later, so as to prevent, not react to, potential issues in the City of Wildwood, if such is determined to be appropriate by the Planning and Zoning Commission and the City Council.

In the identified list of regulations and rules regarding the hobbyists’ use of drones, the important factor is controlling the aircraft and ensuring the operator maintains line of sight with it at all times. Observers, in cooperation with the operator, can be used for this purpose as well. Additionally, a consensus seems to exist that drones should not be flown over people/crowds, unless participating in the event and aware of it as well. Also creating concerns is the distraction a drone can create to the unsuspecting and unaware public. For example, a driver on a busy roadway, not expecting to encounter a UAS may react in an unsafe manner when distracted by a drone.

Right to Privacy / Nuisance Concerns

An additional concern is the reasonable presumption of individual of privacy on private property. This can easily be violated when an UAS is flying overhead potentially with photographic or video capabilities. At the same time, a significant concern also exists with regard to the nuisance created by the operation of UAS's over both private and public property. It seems likely that both complaints will become common as the use of UAS is expected to increase significantly in the future.

SUMMARY AND RECOMMENDATION

The numerous benefits and potential applications of drones easily justify their popularity; however, the management of them does appear to be an appropriate topic for discussion by the Planning and Zoning Commission. Therefore the Department is supportive of **PZ15-15**, which proposes to amend Chapter 415 of the City of Wildwood's Code of Ordinances by adding new requirements to Section 415.380, Miscellaneous Regulations, to ensure the use of drones in all zoning district designations complies with air space rights associated with public and privately-owned properties in the City of Wildwood.