BOARD OF COUNTY COMMISSIONERS
DOUGLAS COUNTY, WASHINGTON

In the Matter of	)	
	)	
Adoption of Department of Transportation and Land Services Flight and Operation Policies for Unmanned Aerial Systems.	)	Resolution TLS 18-35

WHEREAS, technology advances in unmanned aerial systems have led to operational effectiveness and affordability for county governments and systems can provide an array of valuable information and resources for emergency management responders, surveying, mapping, photographing topography and infrastructure inspections; and

WHEREAS, the Department of Transportation and Land Services is implementing an unmanned aerial system program and has drafted flight and operation policies to comply with federal and state laws and regulations.

THEREFORE, BE IT RESOLVED, the Board of County Commissioners hereby adopts the Douglas County Department of Transportation and Land Services Unmanned Aerial System Policy attached as Attachment A.

ADOPTED this 7th day of August, 2018, in regular, open session in the Commissioners' Chambers, Douglas County Courthouse, Waterville, Washington.

BOARD OF COUNTY COMMISSIONERS
DOUGLAS COUNTY, WASHINGTON

COMMISSIONERS COURT * * * SEAL * * * DOUGLAS COUNTY, WASHINGTON

Dan Sutton, Chair

Kyle Steinburg, Vice Chair

Steven D. Jenkins, Member

ATTEST:

Tiana Rowland, Deputy Clerk of the Board

Douglas County Transportation & Land Services

Title: **Unmanned Aerial System (UAS) Policy**

Applies: **All Douglas County Employees**

Adoption Date: August 7, 2018

1. **Preface**
   The following operating policy and procedures are intended to promote safe, efficient and lawful operation of the Douglas County Unmanned Aerial Systems (UAS) program. Safe operation and privacy above all else are the primary goals of every UAS operation performed by Douglas County regardless of the nature of the mission. This policy has been closely modeled after the County Road Administration Board (CRAB) UAS policy and the Washington Counties Risk Pool sample policies.

2. **Protection of Civil Rights and Privacy**
   UAS Supervisors, UAS Pilots, and Systems operators will ensure the protection of civil rights and reasonable expectations of privacy, which are key components in any decision to deploy the UAS. UAS supervisors, UAS pilots, and Systems operators will minimize the extent that UAS operations intrude on the citizens of Douglas County, Washington State.

   Data collected by the UAS shall be retained as provided by State law and county established records retention schedule or as evidence. Primary "records" created by the use of UAS's may include: photos, videos, flight logs, scene reconstructions. Documents or records created by the use of UAS's are subject to the State Public Records Act, RCW Ch. 42.56 and may be subject to disclosure as allowed under that Act and current law. If in doubt about retention schedules and requirements, or public disclosure requirements, consult legal counsel.

3. **Authorized UAS Missions within Douglas County**
   a. **Training/Mapping/Surveying/Infrastructure Inspections.** Provide Douglas County a tool to provide mapping and surveying of lands within its boundary and to assist with road and bridge projects, landfills, pits/quarries, inspection of infrastructure such as bridges, and updating and maintaining the DCTLS infrastructure database.
   b. **Disaster Response.** Provide situational awareness and damage assessment to Emergency Management, Command Staff, County Public Works, and First Responders during natural and man-made disasters by providing real-time video, still photos, and other electronic data of the disaster area.
   c. **Law Enforcement.** DCTLS may provide UAS flights and services to the Douglas County Sheriff's Office (DCSO) upon request to enhance and support law legitimate enforcement public safety and emergency response missions, law enforcement training, or demonstration purposes. All DCTLS UAS assistance shall be conducted in accordance with federal and state requirements and DCSO UAS operating policies.

4. **Definitions**
   a. **Unmanned aircraft systems (UAS)** - Sometimes referred to as a drone, is an aircraft without a human pilot onboard – instead, the UAS is controlled from an operator on the ground.
   b. **Ground Control Station (GCS)** - is a land or sea-based control center that provides the facilities for human control of Unmanned Aerial Vehicles (UAVs or "drones").
   c. **Federal Aviation Administration (FAA)** - The division of the Department of Transportation that inspects and rates civilian aircraft and pilots, enforces the rules of air safety, and installs and maintains air-navigation and traffic-control facilities.
   d. **Federal Aviation Regulations (FAR)** - Rules prescribed by the Federal Aviation Administration (FAA) governing all aviation activities in the United States.
   e. **Code of Federal Regulations (CFR)** - the codification of the general and permanent rules and regulations (sometimes called administrative law) published in the Federal Register by the executive departments and agencies of the federal government of the United States. The CFR is divided into 50 titles that represent broad areas subject to federal regulation.
   f. **Certificates of Waiver or Authorization (COA) -** An authorization issued by the Federal Aviation Administration (FAA) to a public operator for a specific UAS activity. One of two options the Federal Aviation Administration allows for the flying of "Public Aircraft".
   g. **National Airspace System (NAS) -** All of the airspace controlled or regulated by the FAA and a part of which UAS's are authorized to operate.
   h. **Pilot in Command (PIC) -** A person with a small UAS rating and responsible for the operation and safety of a UAS under 14 CFR Part 107 of the FAA rules.
   i. **Visual Observer (VO)** - a person who is designated by the remote pilot in command to assist the remote pilot in command and the person manipulating the flight controls of the small UAS to see and avoid other air traffic or objects aloft or on the ground.
   j. **Supplemental Pilot -** Additional pilot on-site to assist PIC.
   k. **Low Altitude Authorization and Notification Capability (LAANC)** - the Low Altitude Authorization and Notification Capability, a collaboration between FAA and Industry. It directly supports UAS integration into the airspace. It provides access to controlled airspace near airports through near real-time processing of airspace authorizations below approved altitudes in controlled airspace.

5. **Administration**
   a. The policies and procedures contained in this manual are issued by the authority of Douglas County Board of County Commissioners.
   b. This manual is considered a supplement to existing Douglas County policy, FAA regulations and policy, Washington State regulations and each UAS aircraft manufacturer's flight operations manual.
   c. This policy will be reviewed periodically and updated when other rules, regulations or policies change or when updates are deemed necessary.

6. **Organization**
   a. UAS flights operated by Douglas County are considered "Public Aircraft Operations" by the FAA.
   b. Supervision and command of the UAS program is conducted by the Douglas County UAS Supervisor.
   c. UAS operated by Douglas County are regulated by FAA 14 CFR part 107, a Certificate of Authorization (COA) or an emergency COA (e-COA) under special circumstances.

7. **Personnel**
   a. **UAS Supervisor/Chief Pilot**: Has approval authority for all UAS missions and will keep a record for the Douglas County administration for when the UAS has been deployed. Supervises the UAS Team and ensures compliance with all FAA regulations and policy, Washington State regulations and Douglas County policy. The UAS Supervisor/Chief Pilot will ensure that all UAS Pilots, Observers and Systems Operators are trained and licensed to current standards & regulations. The Chief Pilot will maintain the UAS Team training records.
   b. **UAS Pilot:** Will comply with all requirements as outlined in FAA CFR part 107 and Washington State Legislative regulations and Douglas County Policy. It will also be the UAS Pilots duty to operate the UAV in a safe and effective manner in accordance with the UAV manufacturer's operation manual. Pilots will be designated as either Pilots-in-Command (PIC) or a Supplemental Pilot. The designated PIC is the pilot responsible for the UAS flight operation. The PIC may be augmented by supplemental pilots; however the PIC retains complete and overall responsibility of the flight, regardless of who may be piloting the UAS.
   c. **Systems Operator:** Will be trained to assist the UAS Pilot in interpreting downlink data received from the UAS.
   d. **Visual Observer (VO)**: Will be trained to assist the UAS Pilot, if needed, in scanning the airspace surrounding the UAS Operations .

8. **Operations**
   a. The Douglas County UAS program will operate strictly within local, state and federal laws and regulations.
   b. UAS flights will comply with either FAA CFR part 107 rules, a certificate of waiver or an approved COA.
   c. Flight number, date, flight start time, total flight time, mission description, aircraft registration number, waiver number (if necessary) and pilot name will be logged in a log book and maintained with each UAS. Flight logs should be audited semiannually. Flight logs shall be retained as provided by State law and county-established records retention schedules. Flight logs are public documents to the State Public Records Act, RCW Ch. 42.56 and are subject to disclosure under the PRA.
   d. The UAS pilot shall use a VO, if possible, whenever there is a flight in order to reduce the risk of accidents.

e. Flight team members will be designated as either UAS Pilot, Supplemental Pilot, systems operator or VO.
f. In high risk areas, risk assessments will be completed and briefed prior to each flight.
g. In regulated and/or restricted airspace, a waiver must be obtained either through LAANC or through the online FAA waiver application prior to the flight.
h. Inspections will be completed by the UAS pilot using the pre-flight/post-flight checklist and logged in the UAS logbook.
i. The pre-flight/post-flight checklist will be developed by the UAS supervisor.

9. Risk Management

a. Risk Management will assist in developing standard operating procedures, evaluating insurance coverage programs, developing training materials, investigating accidents, and other issues that may arise.
b. An operation briefing shall be completed by the PIC with all involved, prior to each flight in urban areas. Report all accidents to Risk Management resulting in injury to any person or damage to property other than to the small unmanned aircraft. The UAS Supervisor shall report accidents, as required, to the FAA.

10. Training

a. The Douglas County UAS supervisor will oversee the UAS training program.
b. Each UAS pilot will have a training folder located at the Douglas County Human Resources (HR) office. This folder will contain copies of training documentation and any licenses as needed.
c. VO's and systems operators must complete sufficient training to communicate to the pilot any instructions required to remain clear of conflicting traffic. This will include knowledge of the rules and responsibilities described in 14 CFR 91.111, *Operating Near Other Aircraft*; 14 CFR 91.113, *Right-of-Way Rules; Except Water Operations;* and 14 CFR 91.155, *Basic VFR Weather Minimums;* knowledge of air traffic and radio communications, including the use of approved ATC/pilot phraseology; and knowledge of appropriate sections of *the Aeronautical Information Manual.*
d. Recurrent Training. Pilots who do not have documented flight time within 90 days will demonstrate proficiency in their duties to the Chief Pilot or a UAS pilot who is current and proficient. PIC's must demonstrate three takeoffs and three landings in the specific UAS in the previous 90 days to remain current.
e. Each pilot will be 14 CFR Part 107 FAA certified. This certification must be renewed every two years.

11. Maintenance

a. Maintenance, pre-flight and post-flight inspections and scheduled and unscheduled maintenance will be performed according to the manufacturer's operators manual and/or guidelines. Discrepancies will be logged in the UAS logbook.
b. Software used in UAS operations will be updated regularly by the UAS supervisor. Software updates will reviewed by the UAS supervisor prior to widespread installation to insure safe operation.

References

FAA Small UAS Rule:

https://www.faa.gov/uas/getting_started/part_107/

FAA Waivers and Authorizations Supporting Emergency UAS Operations:

https://www.faa.gov/uas/getting_started/emergency_approval/

FAA Unmanned Aircraft Systems (UAS) Regulations & Policies:

https://www.faa.gov/uas/resources/uas_regulations_policy/

CRAB UAS Policy:

http://www.crab.wa.gov/dev/DesignSystems/UAS/policy.cfm

APPENDIX A

Unmanned Aerial System

FAA 14 CFR Part 107 – Select Operation Limits and rules:

- UAS must weigh less than 55 lbs.
- UAS must remain in VLOS of pilot and operator, or of observer
- UAS must remain close enough to be seen without extra visual devices
- Can't operate:
    - o over any persons not participating in the operation
    - o Under covered structure
    - o Inside a covered stationary vehicle
- Daylight only operations (or civil twilight)
- Must yield ROW to other aircraft
- Option to use a visual observer – but encouraged
- Mas. Speed = 100 mph (87 knots)
- Max. altitude of 400 ft. above ground level
- Minimum weather visibility of 3 miles from control station
- No operations from a moving aircraft
- No operations from a moving vehicle (unless over sparse area)
- No careless or reckless operations
- No carriage of hazardous materials

Certification Requirements:

- Government entities who want to operate drone have option of flying them under the operational rules of Part 107, OR obtain a blanket public "Certificate of Waiver or Authorization" (COA).
    - o COA permits flights below 400 feet, self-certification of the drone pilot, and the option to obtain emergency COAs under special circumstances.
- Person operating a small UAS must either:
    - o Hold a remote pilot airman certificate with a small UAS rating, OR

- Be under direct supervision of a person who does hold a remote pilot certificate (remote pilot in command)

▪ Review FAA regulations for specifics of training and certification

• Part 107 establishes a "remote pilot in command" position. For remote pilot certificate, person must:

- Demonstrate aeronautical knowledge
- Be vetted by TSA
- Be at least 16 years old

• A Remote pilot in command must:

- Make available to FAA the drone for inspection or testing, and records
- Report to FAA within 10 days of any operation that results in serious injury, loss of consciousness, or PD of $500 or more
- Conduct pre-flight inspections of all systems, etc.
- Ensure that the UAS complies with existing registration requirements
- Can deviate from these requirements in response to an in-flight emergency

Registration Requirements:

• All government UAS operators must register using the FAA aircraft registry process.

- Review FAA regulations for specifics of registry requirements (portal)

• Must register before first flight

• Provide:

- Operator's qualifications
- Type of equipment
- When, where, how used, etc.

• Get registration number; must mark on drone

Douglas County UAS Pre-Flight/Post-Flight Checklist

Day Before Flight

Checked	Task
1	Charge all UAS batteries
2	Charge UAS RC battery
3	Charge cell phone battery
4	Update UAS firmware if necessary
5	Update cellphone software if necessary
6	Check data card, clear/format in UAS if necessary
7	Clean lenses/sensors
8	Switch RC to P-mode/non-sport
9	Pack UAS case
10	*UAS
11	*Batteries
112	*4 Spare props
13	*Automobile charger
14	*documentation(license, logbook, policy, checklist)
15	Verify flight plan on desktop software
16	Verify airspace of flightplan
17	Notify airports/ATC if necessary
18	Obtain waiver through LAANC if needed

Pre-Flight

Checked	Task
1	**Controls**
2	Check RC battery is sufficient for flight
3	Check phone battery, switch to airplan mode
4	Switch periferral electronics to airplane mode
	Operations Area
1	No danger or nuisance to public
2	No obstacles in flight plan area
3	No people directly under flight path
4	Alternate landing locations
5	Obtain LAANC approval if necessary
	UAS
1	Check battery level
2	Remove gimble lock
3	Check battery latch
4	Verify SD card in place and working properly
5	Check gimble for obstructions
6	Check camera lense
7	Check props
8	Verify motors are obstruction free
9	Unfold props/check props

Takeoff Plan

Checked	Task
1	Power on UAS
2	Power on RC
3	Install phone to RC and start RC software
4	Update homepoint
5	Launch UAS to operating height
6	Verify Autofocus
7	Lauch mapping sofware and verify flight plan
8	Begin mission

Post-Flight

Checked	Task
1	UAS landing obstruction free
2	Verify image quality
3	Verify flight plan covered all areas needed
4	Power down UAS and RC
5	Install gimble lock
6	Let battery cool down before locking in case

Douglas County UAS Flight Log

#	Date	Launch Time	Duration (Min)	Mission Description	UAS Number	FAA Confirmation Number	FAA Aircraft Number	Remote PIC	Visual Observer
1									
2									
3									
4									
5									
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			0.00	Total Flight Time (hrs)					