Skagit County Public Works Department
small Unmanned Aircraft System (sUAS) Policy

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Preface:

The following operating policies and procedures (herein "County sUAS policies") are intended to promote safe, efficient, and lawful operation of the Skagit County Public Works small Unmanned Aircraft System (sUAS) program. Safe and lawful operation of sUAS are the primary goals of every sUAS operation performed by Skagit County regardless of the nature of the mission. This policy is written as a policy applicable to survey operations (and associated matters) conducted by the Skagit County Public Works Department.

Administration:

The policies and procedures contained in this document (the "County sUAS policies") are approved by the Skagit County Board of County Commissioners pursuant to Resolution #R20220915. These County sUAS policies are considered to be supplemental to any other existing Skagit County policies and/or any other applicable Federal, State, and local laws, rules, and regulations (including, but not limited to, applicable FAA regulations and applicable Washington State laws, rules, and regulations). To the extent that these County sUAS policies may be (or become) inconsistent with any such applicable Federal, State, and local laws, rules, and regulations (herein "sUAS laws"), such sUAS laws shall prevail. To the extent reasonably possible and practicable applicable County staff will use, operate, and maintain each sUAS aircraft in accordance with the applicable manufacturer's flight operations manual. These County sUAS policies may be reviewed periodically and updated when other sUAS laws, rules, regulations and/or policies may change and/or when revisions and/or updates to these County sUAS policies are otherwise deemed to be appropriate by the County.

Definitions:

small Unmanned Aircraft Systems (sUAS) - (Also known as Unmanned Aerial Vehicle UAV or Drone), is a remotely piloted aircraft that weighs less than 55 pounds upon takeoff. This weight includes all payload systems and other accessories attached to the aircraft for communication links and components that operate the sUAS.

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.

Federal Aviation Regulations (FAR) - Rules prescribed by the Federal Aviation Administration (FAA) governing all aviation activities in the United States.

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.

FAA 14 CFR Part 107 – A set of rules for operating a sUAS commercially in the United States under the authority of the FAA. It refers specifically to the certification sUAS pilots must have before they can legally perform professional sUAS services.

Certificates of Waiver or Authorization (COA) - An authorization issued by the Federal Aviation Administration (FAA) to a public operator for a specific sUAS activity.

Pilot In Command (PIC) - Personnel licensed under the FAA 14 CFR part 107 and has approval authority for all sUAS missions and will keep a record for each sUAS deployment and mission. The PIC ensures compliance with all sUAS laws, including FAA regulations and policy, Washington State regulations, and County sUAS policies. The PIC will confirm that all sUAS Pilots, Observers, and Systems Operators are trained to current standards and regulations. The PIC may be augmented by supplemental pilots or System Operator; however, the PIC retains complete and overall responsibility of the flight, regardless of who may be piloting the sUAS mission.

System Operator (SO) - System Operators will be designated as a supplemental pilot and will comply with all sUAS laws, including requirements as outlined in FAA Part 107 regulations, State and local law, and these County sUAS policies. The SO operates the sUAS in a safe and effective manner in accordance with the sUAS manufacturer's operation manual and may manually control the sUAS when the PIC is not controlling the sUAS. The SO must remain under direct supervision of the PIC.

Visual Observer (VO) – Visual Observer Complies with all requirements of sUAS laws, including as outlined in FAA Part 107 regulations, State and local law, and these County sUAS policies; The VO assists the PIC and the SO to see and avoid other air traffic or objects aloft or on the ground. The VO acts as a safety officer in direct contact with the PIC and the SO during a sUAS operations and will maintain situational awareness of the environment

Notification to Airman (NOTAM) - Is a notice containing information essential to personnel concerned with flight operations but not known far enough in advance to be publicized by other means. It states the abnormal status of a component of the National Airspace System.

National Oceanic & Atmospheric Association (NOAA) - is an American scientific and regulatory agency within the United States Department of Commerce that forecasts weather, monitors oceanic and atmospheric conditions, charts the seas, conducts deep sea exploration, and manages fishing and protection of marine mammals and endangered species in the U.S.

Meteorological Terminal Air Report (METAR) - Routine aerodrome meteorological report containing data for the temperature, dew point, wind speed and direction, precipitation, cloud cover and heights, visibility, and barometric pressure.

Terminal Aerodrome Forecast (TAF) - Is a concise statement of the expected meteorological conditions at an airport during a specified periods. TAFs are issued at least four times a day, every six hours, for major civil airfields: 0000, 0600, 1200 and 1800 UTC (Coordinated Universal Time).

Low Altitude Authorization and Notification Capability (LAANC) – Is a collaboration between FAA and industry, and directly supports sUAS 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.

Temporary Flight Restrictions (TFR) - The FAA maintains the safety and efficiency of our National Airspace System. As with cars on the road, there are rules that cover aircraft in the sky to ensure safety. In special circumstances, the FAA may temporarily restrict access to certain designated areas of our airspace

Air Traffic Control (ATC) **–** Air Traffic Control. A service operated by appropriate authority to promote the safe, orderly and expeditious flow of air traffic.

Compliance with Laws and Policies:

sUAS Pilot in Command (PIC) and flight team members shall reasonably ensure compliance with sUAS laws and County sUAS policies, which are key components in any decision to deploy the sUAS.

Depending on the circumstances, the PIC and flight team members shall reasonably attempt minimize the extent to which sUAS operations may intrude on the citizens of Skagit County. The PIC and flight team members shall limit sUAS operations to the specific, approved sUAS application.

Skagit County sUAS Program shall operate in compliance with current sUAS laws and County sUAS policies, including appliable Federal, State, and local laws and regulations.

Operations Over People General Overview:

The ability to fly over people varies depending on the level of risk that a sUAS operation presents to people on the ground. Operations over people are subject to the requirements found pursuant to sUAS laws, including as may be provided for informational purposes on the FAA website.

Records Retention and Public Disclosure:

Data collected by the sUAS shall be retained as provided by State law and County established records retention schedule or as evidence. Primary "records" created using sUAS may include photos, videos, flight logs, and scene reconstructions. Documents or records created by the use of sUAS are subject to applicable public records laws, rules, regulations, and County policies, including, but not necessarily limited to, the State Public Records Act, RCW 42.56., Preservation and Destruction of Public Records RCW 40.14., and Skagit County Resolution #R20070276. Applicable County staff should initially inquire with the County Records Management Coordinator with questions concerning such requirements.

Risk Management:

Risk management will assist in developing standard operating procedures, evaluating insurance coverage programs, developing training materials, and investigating accidents and incidents that may arise.

An operation briefing and risk assessment shall be completed prior to each flight. Report all incidents and near-misses to risk management resulting in injury to any person or damage to property other than to the sUAS vehicle. The Pilot-in-Command (PIC) shall report all accidents and incidents, as required, to the FAA. See Appendix for more information.

Mission Operations:

Skagit County sUAS Program will operate in accordance with sUAS laws and County sUAS policies, including local, State and Federal laws and regulations and comply with FAA 14 CFR part 107 rules. In regulated and/or restricted airspace, a Certificate of Waiver Authorization (COA) must be obtained either through Low Altitude Authorization and Notification Capability (LAANC) or through the online FAA waiver application prior to the flight.

Inspections will be completed by the PIC using the pre-flight checklist, Flight Log, and Post Flight Summary and recorded in the Skagit County sUAS logbook. Flight logs shall be retained as provided by State law and County-established records retention schedules.

The following routine applications require no additional approval or oversight whether performed for the Skagit County Public Works department, or for another applicable County department and/or third party public agency on a reimbursable basis (via duly executed interlocal agreement):

- Mapping and Surveying: Provide data collection and mapping for County infrastructure projects such as road, facility, trail, bridge, park and solid-waste projects and collection of data useful for the county's geographic information system.
- Volumetric Measurement: Provide volumetric measurement for management of County pits, quarries, and stockpile material resources.
- Inspection: Provide inspection for County infrastructure including roads, bridges and facilities.
- Disaster Response: Provide situational awareness and damage assessment of storms, floods, earthquakes, and landslides by providing video, still photos and other electronic data of the disaster area.
- Public Outreach: Provide video and still photos of County projects and facilities for communication with the public.

sUAS applications outside the scope of the above typical applications shall be reviewed for authorization by the Public Works Director.

The following applications are prohibited:

- The sUAS Program shall not be used to unlawfully harass or intimidate persons.
- The sUAS Program shall not be used to conduct personal business of any type.
- The sUAS Program shall not be used for any flight operations prohibited by 14 CFR Part 107 regulations unless FAA waivers or authorizations have been acquired.

Maintenance & Training:

The PIC shall be responsible for ensuring pre-flight and post-flight inspections, together with scheduled and unscheduled maintenance according to the manufacturer's operator's manual and/or guidelines. Discrepancies will be logged in the Skagit County sUAS logbook.

The PIC shall be responsible for obtaining, maintaining, and tracking all assigned sUAS equipment. The PIC will register the sUAS equipment per the requirements of 14 CFR Part 107. The PIC will coordinate with Skagit County staff to obtain, install, and update all software associated with the sUAS program.

The Skagit County Public Works Pilot in Command (PIC) will oversee the sUAS training program. The System Operator (SO) and Visual Observer (VO) 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 91.155 (basic Visual Flight Rules); 14 CFR 91.111 (Operating Near Other Aircraft); 14 CFR 91.113 (Right-of-Way Rules); 14 CFR 91.117 (Aircraft Speed); 14 CFR 91.119 (Minimum Safe Altitude).

Recurrent Training: Each PIC will be 14 CFR Part 107 FAA certified. This certification must be renewed every two years.

Appendix:

Mitigating Risk

1. Illness-Am I sick? Illness is an obvious pilot risk.
2. Medication-Am I taking any medicines that might affect my judgment or make me drowsy?
3. Stress-Am I under psychological pressure from the job? Do I have money, health, or family problems? Stress causes concentration and performance problems. While the regulations list medical conditions that require grounding, stress is not among them. The pilot should consider the effects of stress on performance.
4. Alcohol-Have I been drinking within 8 hours? Within 24 hours? As little as one ounce of liquor, one bottle of beer, or four ounces of wine can impair flying skills. Alcohol also renders a pilot more susceptible to disorientation and hypoxia.
5. Fatigue-Am I tired and not adequately rested? Fatigue continues to be one of the most insidious hazards to flight safety, as it may not be apparent to a pilot until serious errors are made.
6. Emotion-Am I emotionally upset?

The PAVE Checklist

Pilot-in-command (PIC), **A**ircraft, en**V**ironment, and **E**xternal pressures **(PAVE)** which form part of a pilot's decision-making process. Once a pilot identifies the risks of a flight, he or she needs to decide whether the risk, or combination of risks, can be managed safely and successfully. If not, make the decision to cancel the flight. If the pilot decides to continue with the flight, he or she should develop strategies to mitigate the risks. Limits are unique to that individual pilot's current level of experience and proficiency.

P = Pilot-in-Command (PIC)

- The pilot is one of the risk factors in a flight. The pilot must ask, "Am I ready for this flight?" in terms of experience, recency, currency, physical, and emotional condition. The **IMSAFE** checklist provides the answers.

A= Aircraft

- Is this the right aircraft for the flight?
- Am I familiar with and current in this aircraft?
- Can this aircraft carry the planned load?

V = Environment Weather

- What is the current ceiling and visibility?
- Consider the possibility that the weather may be different than forecast.
- Are there any thunderstorms present or forecast?
- If there are clouds, is there any icing, current or forecast? What is the temperature/dew point spread and the current temperature at altitude?
- **Terrain =** Evaluation of terrain is another important component of analyzing the flight environment.
- **Airspace** = Check the airspace and any temporary flight restriction (TFRs).

E = External Pressures
External pressures are influences to the flight that create a sense of pressure to complete a flight-often at the expense of safety. Factors that can be external pressures include the following:

- The desire to demonstrate pilot qualifications
- The desire to impress someone (Probably the two most dangerous words in aviation are "Watch this!")
- The pilot's general goal-completion orientation
- Emotional pressure associated with acknowledging that skill and experience levels may be lower than a pilot would like them to be. Pride can be a powerful external factor!

Managing External Pressures
Management of external pressure is the single most important key to risk management because it is the one risk factor category that can cause a pilot to ignore all the other risk factors.
The use of personal standard operating procedures is one way to manage external pressures.

Human Factors
Human conditions, such as fatigue, complacency, and stress, are important to consider in aviation. Human factors directly cause or contribute to many aviation accidents and have been documented as a primary contributor to more than 70 percent of aircraft accidents.

REFERENCE FAA FLIGHT RISK GUIDELINES