

# Corbett Fire District #14

## Policy: UAS for Deployment and Use

### ***Mission Specific Deployment***

Corbett Fire District No. 14 responds to all calls for help. Although not meant to be “all inclusive” or exclusive of any emergent incident type, the following are primary scenarios under which the District UAS can be requested, deployed, and utilized:

**Structure Fires** – Deployment of UAS’s to structure fires, in particular buildings suspected of structural compromise, i.e., roof, walls, or floors related to and during the initial action phase and final mitigation of an incident.

**Hiker (Hi/Low Angle Rescue) Incidents** – Deployment of UAS’s in wilderness areas to (1) verify the existence and location of lost or injured persons who have called 911 for assistance while hiking, camping, or climbing and (2) confirm the safest and most effective means of dispatching District rescue team members to make contact with such persons.

**Swift Water Incidents** – Deployment of UAS’s to District waterways, large bodies of water or during precipitous weather events (heavy rains) for the purpose of verifying the existence of and identifying the location of trapped or injured persons in swiftly moving water (at least three miles per hour and depths greater than six inches).

**Extended/Expanded Incidents** – Deployment of UAS’s to incidents lasting more than 12 hours in duration.

**Wildfire Mitigation** – Deployment of UAS’s In Local, State and Federal areas for the purpose of GPS topographic mapping, planning, and implementing control objectives. For developing hazard mitigation strategies, i.e., structure defense, perimeter control (hot spots) and containment assessment. **Under NO circumstances will a UAS be operated while manned aircraft are in operation.**

**Natural Disaster Response and Assessment** – Deployment of UAS’s to accelerate situational awareness necessary to begin the recovery process. To collect and disseminate information through visual images sent back to the incident command post, DOC or EOC for various agencies to have a collective viewpoint of a disastrous event and strengthens the assessment process by capturing community vulnerabilities.

**Hazardous Material Mitigation** – Deployment of UAS’s with dual-purpose sensor payload, high resolution camera to identify containment areas and amount of content for liquid.

**Wide Area Search and Rescue** – utilizing Infrared (IR) sensors to locate a lost person in low light tracking and deploying resources in areas where radio or cellular communication is impacted, diminished or unavailable.

**Structure Collapse/Confined Space Search and Rescue** – Deployment of UAS’s utilizing IR sensors to provide night-vision footage to track heat signatures of bodies, pinpointing the locations of survivors, and providing hazard assessment for rescuers access and egress.

**Planned Training Events** – Use of UASs for training exercises intended to simulate any of the above mentioned “real” scenarios.

Corbett Fire District No. 14’s primary intention for integrating UAS technology into its initial action hazard mitigation and response matrix is to increase the incident commanders “situational awareness” to fully understand the challenges of a given incident in “real time” thereby providing critical information necessary to guide decision-making. Ultimately, those decisions impact the amount of risk the incident commander is willing to assume with firefighters’ lives.

### ***Flight Procedures***

The UAS is an operational tool to be used by certain authorized District personnel in response to “all hazard” scenarios, which include active structure fires; post-extinguishment phases of a structure fire; brush (wild land) fires and natural disaster damage assessment; hazardous material identifications; and confined area search operations such as “river rescue” and “hiker” incidents. The UAS is also intended to be used for training exercises, such as operational pre-planning training (drills) and related video production.

Corbett Fire District No. 14’s UAS **will not** be used to monitor members of the public or provide surveillance for law enforcement purposes. Its intended use is to provide greater situational awareness to incident commanders thereby enhancing firefighter safety in response to and mitigation of emergent situations and incident types unrelated to citizen monitoring or surveillance.

1. The District UAS will only be operated by trained, certified and (FAA part 107 or higher) licensed members (operators and observers) of the District. A member of lesser or no license status may operate under a PIC (Pilot in Command) who holds an FFA part 107 license or higher.
2. The UAS will be used for District-related purposes only. The District might, as part of Oregon regional partnerships, Mutual Aid or Automatic Aid agreements, operate the UAS outside of “District” boundaries when dispatched to assist another regional Fire District, District, Squad, or Agency.

3. The UAS will **NOT** be lent to any other District or agency. However, if dispatched or properly requested, the UAS, operated by a District UAS team member(s), can be utilized in accordance with the provisions of the COA and the District UAS Policy.
4. For District UAS flights during live incidents, the “pilot in charge” SHALL ensure or request the UAS be added to the existing Incident. In all cases, incident information SHALL include launch time, exact location, pilot in charge, mission type and UAS ID.

Upon request of the Incident Commander or District Representative, when the District is an assisting agency, the UAS flight team (operator and an observer) will deploy to the designated location within the District’s fire protection area, as well as its surrounding Automatic Aid, Mutual Aid, Mutual Threat Zones, and regional response areas. The UAS flight team will conduct a pre-flight assessment of the incident environment to ensure the proposed operation is within COA guidelines and District UAS Policy.

The UAS Operator along with UAS Observer will determine if safe operation of the UAS can be accomplished as requested. The decision will be contingent upon several factors to include physical features of the area, obstructions to flight, terrain, and the weather. **The UAS Operator will make the final determination if flight operations can be initiated.**

The Incident Commander and/or UAS Operator will coordinate with the District’s Air Operations Section Commander or Chief Pilot for final clearance for **ALL** UAS flight operations.

### ***UAS Teams***

UAS Teams are made up of an operator (pilot) and observer. The “team” concept is established to train for and respond to each authorized UAS mission (Fire Ground Over-watch, Search and Rescue, Swift Water Rescue, etc.).

Each UAS Team will operate with at least two members of the District (Pilot-In-Command and Observer). Each member will be assigned a specific role prior to the flight. Additional team members may be needed for complex missions, including Liaison and Auxiliary Remote Controller (for independent gimbal/sensor control). The UAS Team will always have at least one certified pilot; this can be comprised of (2) pilots or (1) pilot and (1) observer.

## ***UAS Pilot***

The District UAS will only be operated by District personnel trained in its safe and effective operation.

The PIC (Pilot-In-Command) must have at minimum, an FAA part 107 license and a minimum of **two** hours of knowledge-based training and a minimum of **four** hours of skills. This generally includes simulator flights, a knowledge test of Federal Aviation Regulations, safety, maintenance, a proficiency test on the UAS, training conducted by a designated District UAS instructor and **two** hours of supervised in-flight operation.

PICs must maintain his/her FAA part 107 license, maintain flight logs and all necessary records to meet the FAA's requirements. Additional regularly scheduled training/proficiency tests, as determined by the Fire Chief, must be completed and documented.

The PIC will also be the team leader. The PIC will be ultimately responsible for the operation and solely responsible for oversight of commands during flight. The PIC will also be responsible for UAS assembly, flight preparation, post flight procedures, UAS disassembly/storage procedures and documenting all UAS flights.

## ***UAS Observer***

The UAS Flight Observer will maintain a visual observation of the UAS while in flight and alert the PIC of any conditions (obstructions, terrain, structures, air traffic, weather, etc.), which may affect the safety of a flight. UAS Flight Observer will also ensure that the operator is not interrupted during flight.

The Flight Observer's added function is to coordinate and communicate operations between the PIC and ground personnel.

Additionally, the Flight Observer will be responsible for all aviation-related communications required by Federal Aviation Regulations (FARs).

To accomplish this, the observer should be in close-proximity and have constant communication with the PIC to ensure instant relaying of information.

## ***UAS Data Technician***

The UAS Data Technician will be utilized anytime the documentation captured by the UAS needs to be processed and transmitted in "real time" or in the initial action phase of an incident.

# **Safety Policy**

## ***Commitment to Safety***

Corbett Fire District No. 14 is committed to having a safe and healthy workplace.

It is the duty of every District member with UAS responsibilities to contribute to the goal of continued safe operations. This contribution may come in many forms and includes always operating in the safest manner and avoiding unnecessary risks. Any safety hazards, whether procedural, operational, or maintenance related should be identified as soon as possible. Any suggestions in the interest of safety should be made to the Team Leader without reservation.

If any member of a District UAS Flight Team observes or has knowledge of an unsafe or dangerous act committed by another member, the incident commander shall be notified immediately so that corrective action may be taken.

## ***Ground Safety***

- The pilot and flight observer must always be aware of dangers to ground personnel from moving rotors.
- The pilot shall under no circumstances leave any unauthorized person in charge of the UAS controls while the UAS is running.
- If it is necessary for the pilot to leave the controls of the UAS, the engine will be shut down, battery removed, and the controls deactivated.
- Only mission essential personnel will be in proximity to UAS launch and recovery activities. When operating over-populated areas, the pilot will ensure that a “defined incident perimeter” exists to limit the potential of persons being present beneath the UAS flight path.

## ***Night Flight Operations***

- To assist the pilot, a secondary (auxiliary) Video Camera Remote Controller with a video monitor screen should be deployed for independent gimbal/sensor control.
- UAS team members should obtain the minimum altitude necessary to avoid obstructions in the operating area prior to nightfall if possible.

- Due to field of view and distortion issues, night vision goggles may not be used as the primary means for visual observation duties. Such devices are **ONLY** permitted for augmentation of the Flight Observer's visual capability.
- Flight Observers must use caution to ensure the UAS remains within normal line-of-sight.
- The use of UAS Staff and the use of lighting and/or IR beacons to identify the launch/recover areas is highly recommended.

### ***Deconfliction of Aircraft within Operational Air Space***

All UAS flights shall be grounded upon arrival of approved manned aircraft entering the operational air space.

Deconfliction shall be initiated by the Lead PIC of the aircraft.

Incident Commanders shall not approve UAS flights to resume until the Lead PIC of the aircraft designates UAS operating areas and approves UAS use during manned flight operations.

It is the responsibility of the UAS PIC and Flight Observer to confirm and maintain awareness of all manned aircraft activity during UAS operations.

In the event a non-District UAS is identified in our operational air space (incursion), the Lead PIC shall notify the Incident Commander and immediately ground the District UAS.

## Security Policy

### *Chain of Custody for Retained Material*

1. All recorded photo/video material related to a District emergent response shall be archived and cataloged immediately after the conclusion of the incident; then surrender any recorded photo/video material to the District's official custodian of records.
2. All recorded photo/video material **not** related to a District response, i.e., planned training event, shall be surrendered to the District's official custodian of records.
3. All recorded photo/video material **not** related to a District response, i.e., planned District training events, public relations events or involving non-District personnel, in public space or in and around public property or domains shall be edited/produced, reviewed, and approved by the Fire Chief.

### *Records Retention*

Corbett Fire District No. 14 strives to gain, develop, and maintain the trust of the public it serves. The District's primary intention for integrating UAS technology into its initial action hazard mitigation and response matrix is to increase the incident commanders' "situational awareness." Situational awareness is the ability to fully understand the challenges of a given incident in "real time," thereby providing critical information necessary to guide decision-making. Ultimately, those decisions impact the amount of risk he/she is willing to assume with firefighters' lives.

In most cases, "real time" information will be captured solely to transmit "live" footage to a District Incident commander or command post. Although there may be occasional benefits to sharing, recording, and retaining visual data, this is **NOT** the intended purpose when a UAS is launched in public space or in and around public property or domains.

Corbett Fire District No. 14, or any entity associated with the District UAS Program, will not engage in the indiscriminate, unobscured publication of footage depicting non-District personnel. Visual data shall never be displayed on the Corbett Fire District's public facing website or social media portals when not in the best interest of the public. It is the intent of the District, by policy and practice, to protect the privacy interests of members of the public or other "non-District personnel."

Corbett Fire District No. 14, or any entity associated with the District UAS Program, will not permit any retained visual data to be merged with other surveillance databases or retained solely for the purpose of mining the data at a later time by the District or other agencies.

It will be the District's policy and practice to record visual data of the emergent incident only where there is a specific, identified District need. Although this is not an exhaustive list, such needs would include footage that captured an unusual occurrence; occurrence of serious building compromise or collapse; roof compromise or collapse; large area involvement with fire (conflagration, flashover, backdraft, or explosion); injury or death to a firefighter or member of the public; or in connection with anticipated or pending litigation or compelling public interest.

It will be the District's policy and practice to retain visual footage after the conclusion of the emergent incident if that footage captured an unusual occurrence, such as: occurrence of serious building compromise or collapse, roof compromise or collapse, large area involvement with fire (conflagration, flashover, backdraft or explosion), injury or death to a firefighter or member of the public, or in connection with anticipated or pending litigation or compelling public interest.

### ***Records Sharing***

Visual information will be captured to transmit "live" footage to a District Incident Commander or command post. Viewing such live footage may occur during exigent circumstances where an incident demands or impacts the resources or responsibilities of other entities such as law enforcement, public agencies, utility providers or political bodies. During these "Unified Command" scenarios, non-District personnel may have **visual** access to images captured by a District UAS **but only** for the purpose of providing critical information in "real time" necessary to guide decision-making and increasing "situational awareness."

Corbett Fire District No. 14, or any entity associated with the District's UAS Program, will not engage in the indiscriminate sharing or unwarranted surrendering of footage depicting non-District personnel. Moreover, the District will not freely surrender any footage captured via a UAS to any other governmental or non-governmental agency except in special circumstances, such as where doing so: is necessary to carry out a fire, rescue, disaster, or other Fire District mission; is for the purposes of a mutual-aid mission; is required under any laws governing the disclosure of government records; or is required pursuant to a duty issued court order.

It is the intent of the District, by policy and practice, to protect the privacy interests of members of the public or other "non-District personnel."



## Appendix

### ***Definitions:***

**Data Technician:** The person assigned to the Command Post to provide “real time” photo/video or other information, obtained from UAS mounted “sensors,” to the Incident Commander (this role can be filled by the EIT/Captain I Adjutant).

**Ground Control Station (GCS):** A component of the UAS. Consists of the OCU, GDT and associated cables and antennas. This GCS provides the interface between the PIC and the UA.

**Ground Data Terminal (GDT):** A component of the UAS. Contains all the necessary equipment for the communication links between the UA and the OCU for both data and video. Also contains a Global Positioning System (GPS) to enable the operator to determine the system’s location.

**National Airspace (NAS):** The National Airspace System is the network of the United States airspace, air navigation facilities, services, airports, regulations, procedures, technical information, manpower, and material shared jointly between the Federal Aviation Administration (FAA) and the military.

- Airspace is classified based on the activities therein which must be confined because of their nature.
- There are four types of airspace that fall under 2 Categories.

**Observer:** The Observer is responsible for visual observation and safety of the UA while in flight.

**Operator Control Unit (OCU):** A component of the UAS. Consists of the control transmitter or computer that is used to make changes to the aircraft position and altitude and the data/video transmitted by the UA.

**Payload:** The amount of equipment carried by the aircraft. Typically divided between command-and-control communications (radio receiver antenna) and video (camera, transmitter).

**Person Manipulating the Controls:** A person other than the Remote PIC who is controlling the flight of a UAS under the supervision of the Remote PIC.

**Pilot-In-Command (PIC):** The person directly responsible for all operations including safety of the UA as described by Federal Aviation Regulations (FARS) 91.3.

**Remote Controller:** The wireless communication device that provides the interface between the operator and the UAS.

**Remote Pilot in Command (Remote PIC or Remote Pilot)**: A person who holds a remote pilot certificate with a sUAS rating and has the final authority and responsibility for the operation and safety of a sUAS operation conducted under FAA part 107.

**Small Unmanned Aircraft (sUA)**: A UA weighing .5 pounds or more but less than 55 pounds, including everything that is onboard or otherwise attached to the aircraft, and can be flown without the possibility of direct human intervention from within or on the aircraft.

**Small Unmanned Aircraft System (sUAS)**: A small UA and its associated elements (including communication links and the components that control the small UA) that are required for the safe and efficient operation of the small UA in the NAS.

**Sensors**: High Resolution (zoom capable) cameras, Infrared/Thermal Sensors, Night Vision Image sensors, Gas/Chemical Sensors (Sniffers) - Not all use scenarios will use photo or video cameras.

**Unmanned Aircraft (UA)**: An aircraft operated without the possibility of direct human intervention from within or on the aircraft.

**UAS**: An Unmanned Aircraft System also known as a drone.

**Video Camera Remote Controller**: The person in control of the second or auxiliary remote control. Controls only the gimbal/sensor portion of the UAS. Needs constant communication with PIC for safe operation. (See Night Operations.)

**Visual Observer (VO)**: A person acting as a flight crew member who assists the small UA remote PIC and the person manipulating the controls to see and avoid other air traffic or objects aloft or on the ground.

This policy is effective May 10, 2023.