Uncrewed Aircraft Systems (UAS)

534.1 PURPOSE AND SCOPE

The purpose of this policy is to establish guidelines for the use of Uncrewed Aircraft Systems (UAS), and for the storage, retrieval, and dissemination of images and data captured by the UAS during emergency and non-emergency use.

The Scappoose Fire District intends to use UAS to enhance the situational awareness on emergency scenes, damage assessment, investigations, making maps as part of planning activities or other lawful requests from a partner agency. This policy requires that all UAS operations account for preservation of privacy, civil rights and civil liberties, accountability for the RPIC and data collected, but accomplished in a manner that allows for transparency to the public, the board of directors and other government agencies. This policy shall be posted on the district website.

534.2 DEFINITIONS

Definitions related to this policy include:

Personnel Accountability Report (PAR) - A roll call of all operations members assigned to an incident at specified times; a PAR is designed to account for each member's location and activity and to verify his/her safety.

ADS-B In—Equipment that receives Automatic Dependent Surveillance–Broadcast (ADS-B Out) transmissions from other aircraft on 1090 MHz and 978 MHz and displays traffic to the RPIC. All District ground control stations and controllers are equipped with ADS-B In.

Autonomous Flight—Set of equipment/computers, and internal navigation systems (INS) GPS navigation units which allow a UAS to navigate and fly autonomously. Autonomous flight generally means the vehicle is capable of reasoning and decision making without oversight or intervention from human controllers, a level of autonomy that is not presently contained in most UAS.

Beyond Visual Line of Sight (BVLOS)—Any flight in which neither the RPIC, the person manipulating the controls, nor a visual observer can see the UAS with unaided vision. District BVLOS flights are conducted only as shielded operations under the District CoW/A.

C-Band—Frequency band selected and used by a UAS system to operate an aircraft from its control station when in line-of-sight. C-Band is from 4GHz to 8GHz and is one of several bands used to control UAS.

Civil Aircraft—Aircraft other than public aircraft (public aircraft include military and other government-use aircraft). Civil aircraft include those which are privately owned such as

general aviation (GA) aircraft governed by 14 CFR Part 91, and those operated for commercial purposes such as those which fall under 14 CFR Part 121 and 14 CFR Part 135 operations.

Class A Airspace—Generally, airspace from 18,000 feet MSL up to and including FL 600, including the airspace overlying the waters within 12 nautical miles of the coast of the 48 contiguous states of the United States and Alaska. Unless otherwise authorized, all persons must operate their aircraft under Instrument Flight Rules (IFR) in Class A airspace.

Class B Airspace—Generally, airspace from the surface to 10,000 feet MSL surrounding the nation's busiest airports having very high numbers of airport operations or passenger enplanements. The configuration of each Class B airspace area is individually tailored and consists of a surface area and two or more layers (some Class B airspace areas resemble upside-down wedding cakes) and is designed to contain all published instrument procedures once an aircraft enters the airspace. An ATC clearance and two-way communication is required for all aircraft to operate in the area, and all aircraft that are so cleared receive separation instructions within the airspace.

Class C Airspace—Generally, that airspace from the surface to 4,000 feet above the airport elevation surrounding those airports that have an operational control tower, are serviced by a radar approach control, and have a certain number of IFR operations or passenger enplanements. Although the configuration of each Class C area is individually tailored, the airspace usually consists of a surface area with a five nautical mile (NM) radius, a circle with a 10 NM radius that extends no lower than 1,200 feet up to 4,000 feet above the airport elevation, and an outer area that is not charted. Each person must establish two-way radio communications with the ATC facility providing air traffic services prior to entering the airspace, and thereafter maintain those communications while within the airspace.

Class D Airspace—Generally, airspace from the surface to 2,500 feet above the airport elevation surrounding those airports that have an operational control tower. The configuration of each Class D airspace area is individually tailored and when instrument procedures are published, and the airspace will normally be designed to contain the procedures. Arrival extensions for instrument approach procedures may be within Class D or Class E airspace. Unless otherwise authorized, each person must establish two-way radio communications with the ATC facility providing air traffic services prior to entering the airspace and thereafter maintain those communications while in the airspace.

Class E Airspace—Generally, if the airspace is not Class A, Class B, Class C, or Class D, and it is controlled airspace, it is Class E airspace. Class E airspace extends upward from either the surface or a designated altitude to the overlying or adjacent controlled airspace. When designated as a surface area, the airspace will be configured to contain all instrument procedures. Also, in this class are federal airways, airspace beginning at either 700 or 1,200 feet AGL used to transition to/from the terminal or en route environment, en route domestic, and offshore airspace areas designated below 18,000 feet MSL. Unless designated at a lower altitude, Class E airspace begins at 14,500 MSL over the United States, including that airspace overlying the waters within 12 NMs of the coast of the 48 contiguous states and Alaska, up to, but not including 18,000 feet MSL,

and the airspace above FL 600. Class E surface areas are designated E2; extensions to Class D surface areas are designated E3; and extensions to Class E surface areas are designated E4.

Class G Airspace—Airspace not designated as Class A, B, C, D or E.

Note for Airspace definitions: There are also minimum equipment requirements for aircraft to operate in each class of airspace. This in many ways can be a limiting factor to UAS operators. (FAA 2014d)

Certificate Of waiver or Authorization (COA)— COA is an authorization issued by the Air Traffic Organization to a public operator for a specific UA activity. After a complete application is submitted, FAA conducts a comprehensive operational and technical review. If necessary, provisions or limitations may be imposed as part of the approval to ensure the UA can operate safely with other airspace users.

Certificate of Waiver or Authorization, 91.113 (CoW/A)—A waiver issued by FAA Flight Standards to a public safety organization operating public aircraft, granting relief from 14 CFR § 91.113(b) and related sections for obstruction-shielded VLOS and BVLOS operations, operations over people, and operations over moving vehicles. The CoW/A includes a limited airspace authorization for Class G airspace and for Class B, C, D, and E surface areas within UAS Facility Map limits.

Collision Avoidance—The sense and avoid (detect-and-avoid) system function where the UAS takes appropriate action to prevent an intruder from penetrating the collision volume. Action is expected to be initiated within a relatively short time horizon before the closest point of approach. The collision avoidance function engages when all other modes of separation fail. (See SAA; see DAA)

Communication Link—The voice or data relay of instructions or information between the UAS pilot and the ATC and other NAS users. It is generally understood that there are two possible communication links: one from the UAS operator to/from the vehicle and the other from the payload operator to/from the vehicle.

Control Station—The equipment used to maintain control, communicate with, guide, or otherwise pilot an unmanned aircraft. The control station includes the communications equipment, computers, control inceptors, and displays used to control the vehicle as well as the physical enclosure, support systems, and power sources.

Crewmember [UAS]—In addition to the crewmembers identified in 14 CFR Part 1, a UAS flight crewmember includes pilots, sensor/payload operators, and visual observers, but may include other persons as appropriate or required to ensure safe operation of the aircraft.

Data-link—Typically, a ground-to-air communications system that transmits information via digital coded pulses. However, data-link can also be air-to-air, ground-to-ground, and ground-to-space.

Fire Traffic Area Protocol (FTA) —Firefighting aircraft follow a communications protocol known as the FTA, which is a 12-mile radius from the center point of an incident. UAS are typically launched and recovered from inside the FTA. UASPs must follow this protocol before the aircraft is launched.

Lost Link—Describes the state of the aircraft when it has no communication with ground control. Once the link is lost, the operator is no longer in control of the airplane until link is regained. In the event of lost link, the UAS executes preprogrammed lost link procedures, which can be loaded prior to takeoff or during flight depending on the type of UAS. The aircraft will strictly follow the procedures preprogrammed by the operator. A few examples of lost link procedures are listed below:

- Fly to the recovery field
- Fly to a specific set of coordinates using GPS
- Take any action it was preprogrammed to take (such as flight termination).

Mishap—An accident, incident, or occurrence involving a District UAS that results in injury, damage to property or the aircraft, a loss of control, or a fly-away.

Recreational UAS (formerly Model Aircraft)—An unmanned aircraft flown strictly for recreational purposes under the exception for limited recreational operations in 49 U.S.C. § 44809, which requires the operator to pass The Recreational UAS Safety Test (TRUST). District operations are never conducted under this exception.

NASA Aviation Safety Reporting System (ASRS)—A confidential, voluntary safety reporting system operated by NASA for the FAA. The District files an ASRS UAS report for every accident, mishap, and near miss so that equipment, battery, wildlife, and human factors are tracked at the national level.

Narrow Beam Antenna—High gain antenna with a focused narrow sector for a long distance.

Near Miss—Any event in which a District UAS operated less than 500 feet vertically or horizontally from an aircraft with at least one person on board, or any other event in which a collision with a crewed aircraft was narrowly avoided.

Notice To Air Mission (NOTAM) —A 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 (NAS) – not the normal status.

Obstruction—Any physical object, man-made or natural, that would stop or impede the flight of the UAS if physical contact is made. Smoke, fog, and vapor plumes are not obstructions.

OMNI Antenna—Omnidirectional antenna that sends and receives signals equally in all directions.

Operations Over Moving Vehicles (OOMV)—Flight of a UAS over a moving vehicle, or launch and operation of a UAS from a moving vehicle.

Operations Over People (OOP)—Flight of a UAS directly over any part of a person, including participating personnel.

Operator—The person or organization responsible for the operation of a UAS. For District operations, the Scappoose Fire District is the operator. The RPIC is the person directly responsible for, and the final authority as to, the operation of the aircraft.

Parachute Recovery System (PRS)—A parachute system that meets ASTM F3322-18 (or newer) and limits the impact energy of a UAS after failure. The District uses the ParaZero SafeAir M30 Pro on the DJI M30T and the Skydio Parachute System for X10 on the Skydio X10.

Payload—Set of sensors and cameras carried on board a UAS.

Public Aircraft—An aircraft operated by a governmental entity (including federal, state, or local governments, and the U.S. DOD and its military branches) for certain purposes as described in 49 U.S.C. §§ 40102(a)(41) and 40125. Public aircraft status is determined on an operation-by-operation basis. See 14 CFR Part 1, § 1.1 for a complete definition of a public aircraft.

Public Aviation—Public Aircraft Operation (PAO) is limited by statute to certain government operations within U.S. airspace. Although these operations must comply with certain general operating rules (including those applicable to all aircraft in the NAS), other civil certification and safety oversight regulations do not apply. Whether or not an operation may be considered public is determined on a flight-by-flight basis, under the terms of the statute (49 U.S.C. 40102 and 49 U.S.C. 40125) and depends on factors such as aircraft ownership, operator, the purpose of the flight, and the persons on board the aircraft.

Public Safety Organization (PSO)—An entity that primarily engages in activities related to the safety and well-being of the general public, as defined in Public Law 118-63, § 926(e) (49 U.S.C. § 44806(e)). The Scappoose Fire District is a PSO.

PII - Publicly Identifiable Information

Remote ID—The broadcast of identification and location information by a UAS in flight, as required by 14 CFR Part 89. All District BVLOS flights use Standard Remote ID.

Remote Pilot Certificate—The FAA remote pilot certificate with a small UAS rating, issued under 14 CFR Part 107, Subpart C. It is a certificate, not a certification, and the FAA may suspend or revoke it (14 CFR §§ 107.57 and 107.59; 49 U.S.C. § 44709).

Remote Pilot in Command (RPIC)—The person who has final authority and responsibility for the operation and safety of a UAS flight. Only one RPIC is designated at any time, and each RPIC operates one UAS at a time.

SATCOM—Satellite communications: Term used to describe controlling the aircraft in BLOS using a satellite system and equipment.

SCAPPOOSE CoW/A—The 91.113 CoW/A issued to the Scappoose Fire District, together with any ATO COA issued to the District for Class E3/E4 airspace.

Self-Separation—Sense and avoid system function where the UAS maneuvers within a sufficient timeframe to remain clear of other airborne traffic.

Sensor—set of equipment that can be installed on board the UAS for the purpose of information gathering.

Shielded Operations—UAS operations conducted at or below 200 feet AGL, or within 100 feet above an obstruction that is within 100 feet laterally of the UAS (not to exceed 400

feet AGL), so that obstructions keep the UAS out of the airspace where crewed aircraft normally operate.

Special Airworthiness Certificate –Experimental Category (UAS)—Airworthiness certification for a civil experimental UAS. The FAA defines the Experimental Category as follows: A special airworthiness certificate in the experimental category is issued to operate an aircraft that does not have a type certificate or does not conform to its type certificate and is in a condition for safe operation. Additionally, this certificate is issued to operate a primary category kit-built aircraft that was assembled without the supervision and quality control of the production certificate holder.

Special Government Interest (SGI) — First responders and others organizations responding to natural disasters or other emergency situations may be eligible for expedited approval through our Special Governmental Interest (SGI) process. Operations that may be considered include: Firefighting. Search and Rescue. Law Enforcement.

Temporary Flight Restriction (TFR) —Temporary Flight Restrictions (TFR) are tools used by the Federal Aviation Administration (FAA) to restrict aircraft operations within designated areas.

Test Range—A defined geographic area where research and development are conducted. Test ranges are also known as test sites in related documents, such as the FAA's Screening Information Request.

UAS Facility Map (UASFM)—An FAA map showing the maximum altitudes at which UAS may be authorized to operate in controlled airspace near airports.

Unmanned aerial system (UAS) - An unmanned aircraft of any type that is capable of sustaining directed flight, whether preprogrammed or remotely controlled (commonly referred to as an unmanned aerial vehicle (UAV)), and all the supporting or attached systems designed for gathering information through imaging, recording or any other means.

Unmanned Air Systems Pilot (UASP)— The Unmanned Aircraft Systems Pilot provides data to tactical and strategic decision makers and is responsible for flying, managing, and coordinating Unmanned Aircraft Systems (UAS) missions on emergency and non-emergency incidents.

Unmanned Air Systems Leader (UASL)— The Unmanned Aircraft Systems Leader is the conduit between an Unmanned Aircraft Systems Pilot (UASP) and an Incident Management Team (IMT) or other governing body. The UASL coordinates the missions with operations, air operations, and planning personnel and is the designated representative for the operation. If three or more aircraft are operating on an incident, this position needs to be filled to deconflict the aircraft.

Visual Line-of-Sight—Unaided (corrective lenses and/or sunglasses exempted) visual contact between a remote pilot in command or a visual observer and a UAS sufficient to maintain safe operational control of the aircraft, know its location, and be able to scan the airspace in which it is operating to see and avoid other air traffic or objects aloft or on the ground.

Visual observer - A designated person who is not located with the UAS operator but is in communication with the pilot and can see the UAS in operation.

Wide Antenna—Directional antenna, perhaps on a UAS ground data terminal, which sends and receives signals equally distributed in a wide sector of interest with a variety of ranges that are specific to the operation.

534.3 POLICY

It is the policy of this district that any district pilots or pilots contracted by the district adhere to this policy. A UAS may be utilized to enhance the Scappoose Fire District mission of protecting lives and property when other means and resources are not available or are less effective. Any use of a UAS will be in strict accordance with constitutional and privacy rights and Federal Aviation Administration (FAA) regulations. All pilots shall ensure proper waivers, authorizations, and exemptions have been secured when needed and all reports are compiled for public transparency. This policy will be reviewed every two years. Any mission conducted under the Scappoose Fire CoW/A, an ATO COA, or an SGI shall comply with the provisions of that authorization. Flights in a Temporary Flight Restriction (TFR) area shall comply with the CoW/A and with 534.18.3.

534.4 PRIVACY

The use of the UAS potentially involves privacy considerations. Absent an authorized reason, operators and visual observers shall not intentionally record or transmit images of any location where a person would have a reasonable expectation of privacy. Operators and visual observers shall take reasonable precautions to avoid inadvertently recording or transmitting images of areas where there is a reasonable expectation of privacy. Additionally, Scappoose Fire shall only collect information using a sUAS, or use sUAS-collected information, to the extent that such collection or use is consistent with and relevant to an authorized purpose.

Locations where a person may have a reasonable expectation of privacy include:

a. In a residence.

b. In the enclosed yard of a residence.

c. On private property where activity cannot be seen from the street or ground level.

Methods that may be used to avoid recording private activity include:

a. Deactivating a recorder or imaging device until the UAS is away from the potentially private activity.

b. Turning the recorder or imaging devices away from persons or locations during UAS operations.

534.5 PROGRAM COORDINATOR

The Fire Chief shall appoint a program coordinator who will be responsible for the management of the UAS program. The program coordinator will ensure that policies and

procedures conform to current laws, regulations, and best practices and will have the following additional responsibilities:

- Coordinating the FAA Certificate of Waiver or Authorization (CoW/A) and ATO COA application processes and ensuring that each is current (OAR 738-080-0045), and/or coordinating compliance with FAA Part 107 Remote Pilot Certificate, as appropriate for agency operations.
- Ensuring that each flight conducted as a public aircraft operation meets the requirements of 49 U.S.C. §§ 40102(a)(41) and 40125, and that RPICs declare the operating authority (public aircraft under the CoW/A, or Part 107) before each flight.
- Maintaining current records of District pilots, aircraft, and aircraft maintenance in digital form, and making them available to the FAA on request.
- Submitting all required NTSB, FAA, NASA ASRS, and SAFECOM reports under 534.18.6.
- Ensuring that all authorized UAS pilots and visual observers have completed all required FAA and Scappoose Fire District approved training in the operation, applicable laws, policies, and procedures regarding use of the UAS.
- Developing uniform protocols for submission and evaluation of requests to deploy a UAS, including urgent requests made during ongoing or emerging events. Deployment of a UAS shall require authorization of the Fire Chief or the on-scene IC, depending on the type of mission.
- Coordinating the completion of the FAA Emergency Operation Request Form in emergency situations, as applicable (e.g., natural disasters, search and rescue, emergency situations to safeguard human life).
- Developing protocols for conducting criminal fire investigations involving a UAS, including coordinating with local law enforcement.
- Implementing a system for public notification of UAS deployment.
- Developing operational protocols governing the deployment and operation of a UAS, including but not limited to:
    - Safety oversight.
    - Use of visual observers.
    - Establishment of lost link procedures and secure communication with air traffic control facilities.
    - Shielded BVLOS operations, operations over people, and operations over moving vehicles.
- Developing a protocol for fully documenting all missions.
- Developing a UAS inspection, maintenance, and record-keeping protocol to ensure continued airworthiness of a UAS up to and including its overhaul or service life limitations.
- Developing protocols to ensure that all data intended to be used as evidence for fire investigations are accessed, maintained, stored, and retrieved in a manner that ensures its integrity as evidence, including chain-of-custody requirements. Electronic trails, including encryption, authenticity certificates, and date and time stamping, shall be used as appropriate to preserve individual rights and to ensure the authenticity and maintenance of a secure evidentiary chain of custody.

- Developing protocols that ensure retention and purge periods are maintained in accordance with established records retention schedules.
- Recommending program enhancements, particularly regarding safety and information security.
- Ensuring that established protocols are followed by monitoring and providing periodic reports on the program to the Fire Chief.
- Maintaining familiarity with FAA regulatory standards, state laws and regulations, and local ordinances regarding the operations of a UAS.
- Ensuring all District UAS are registered with the Oregon Department of Aviation (ORS 837.360).
- Developing protocols for storage, security, and access to data collected by the UAS (ORS 837.362).
- Developing protocols if a third party is used for the storage of data, including handling, security, and access to the data by the third party (ORS 837.362).
- Developing protocols for disclosing data collected by the UAS through intergovernmental agreements (ORS 837.362).
- Publishing the District policies and procedures regarding the use, storage (including third-party storage), accessing, sharing, and retention of data collected by the UAS, including the text of ORS 192.345 on the District website or other publicly accessible system (ORS 837.362).

534.6 RESPONSIBILITIES

It is the responsibility of the Remote Pilot in Command (RPIC), to follow all FAA regulations, circulars, district policy, the RDPO Standards for UAS Operations, the District CoW/A, and all applicable guidelines when flying on federal and state lands. The RPIC is responsible for all pre and post flight checks, accident reporting, Loss Of Signal (LOS) reporting, or any other mishap or near miss (534.18.6). The RPIC is responsible to check for local TFR's or other requirements of a flight that may be out of the local district. Furthermore, all data collected must be in accordance with the RDPO Standards for UAS Operations, Oregon Revised Statutes (ORS) and agency retention policies. If a mission request comes from a Law Enforcement Agency, a Probable Cause Affidavit must be filed with the court having jurisdiction in accordance with ORS.

534.7 REPORTING

Every flight shall be recorded with a flight log. All flight records shall be kept in digital, electronic form. Specific areas of information to be collected include:

- Date
- Time
- Location
- Incident Number or Agency authorizing flight (if applicable)
- Aircraft Number
- RPIC and Remote Pilot Certificate Number
- Operating authority (public aircraft under the CoW/A, or Part 107)

- Airspace (What Type)
- Weather (Visibility, Ceiling, Wind and KP Index) and weather source
- Pre and Post Flight Checks (Including Battery used)
- Go / No-Go Checklist
- Flight Type (Software Controlled, Free Flight, Combined)
- VLOS or BVLOS, and whether the flight included operations over people or moving vehicles
- Software (Programs used for the flight operations)
- Flight Data (What type of data was collected, was it logged, if evidence, was the evidence logged appropriately.

The District shall keep a record of all flight times, including monthly total flight time, for the duration of the CoW/A, and make it available to the FAA on request.

534.8 USE OF UAS

Only authorized operators who have completed the required training shall be permitted to operate the UAS.

UAS operations shall only be conducted consistent with FAA regulations and the District CoW/A.

534.8.1 PERMISSIBLE USES

Situations where a UAS may be considered for use include:

- Hazardous materials incidents.
- Structure fires.
- Mass casualty incidents.
- Search and rescue.
- Wildland fires (Tier 2 pilots only; see 534.17).
- High-rise incidents.
- Natural and manmade disaster response.
- Video/photographs for investigative support.
- Incidents that threaten life or property
- During training activities.
- Anytime an aerial view of the emergency scene is appropriate.

534.8.2 PROHIBITED USES

Scappoose Fire UAS shall not be used:

- To conduct random surveillance activities.
- To target a person based solely on actual or perceived characteristics, such as race, ethnicity, national origin, religion, sex, sexual orientation, gender identity or expression, economic status, age, cultural group, or disability.
- To harass, intimidate, or discriminate against any individual or group.
- To conduct personal business of any type.
- The UAS shall not be used in any way that causes interference with an aircraft that is in the air, taking off, or landing (ORS 837.374).

534.9 USE OF INFORMATION COLLECTED

Data shall only collect information using a sUAS, to the extent that such collection or use is consistent with and relevant to an authorized purpose and shall only be collected, used and stored under the following conditions:

Criminal Cases
Fire Investigations
Active Fire responses
Crash Reconstruction
Search And Rescue (SAR)
Authorized Mapping Missions
Training

Information must be checked for any violations of civil liberties, civil rights and or First Amendment violations. Additionally, any information collected as part of a criminal investigation must be in accordance with OAR and ORS. Consultation with the local District Attorney is advised when in doubt of collected information. Personally Identifiable Information (PII) shall only be stored or kept in circumstance involving a legally authorized investigation. All applicable laws governing investigations shall be followed, including PII.

All data captured shall be stored on a department owned RAID hard drive that is partitioned to provide a redundant backup. All data shall be recorded by date, incident number in a folder for the specific year that the data was captured.

Any information that is captured in an investigation shall be kept on the recording device and logged into evidence (Micro SD Card).

Comply with the Privacy Act of 1974 (5 U.S.C. 552a) in applicable circumstances and prohibit the collection, use, retention, or dissemination of data in any manner that would violate the First Amendment or in any manner that would discriminate against persons based upon their ethnicity, race, gender, national origin, religion, sexual orientation, or gender identity, in violation of law.

534.10 RETENTION OF DATA

Data collected by the UAS shall be retained as provided in the established records retention schedule (ORS 837.362).

534.11 OWNERSHIP AND USE OF DATA

The use of any photography or electronic imaging made by Scappoose Fire members while using a UAS shall comply with the requirements of the Photography and Electronic Imaging Policy and the Patient Medical Record Security and Privacy Policy.

534.12 DISSEMINATING INFORMATION COLLECTED

To promote transparency and foster confidence with the public about UAS operations, all flight logs shall be available to the public for review.

All requests for data sharing must be made in writing and have the approval of the chief. In certain circumstance, the Fire District's attorney may be consulted to ensure accordance with this policy and all applicable laws.

534.13 ACCOUNTABILITY OF UAS OPERATIONS

UAS operations shall be conducted in accordance with this policy and all applicable rules governing a specific mission or location of a mission. The RPIC is accountable for all actions that occur during the flight, up to including the logging and storing of any data collected.

This policy also allows for accountability to the general public in the safe, lawful use of UAS during the course of district operations or requests for flights that are legally authorized. This policy will be posted on the aviation website where the public has access.

534.14 COMPLAINTS

All complaints regarding a RPIC, mission or district UAS must be made in writing or via the online form on the aviation page (www.ccfiremarshal.com/uas-complaint). The complaint must include a violation of ORS, Federal Aviation Regulation Violations, or district policy violation.

Any complaint that does not contain a standard, rule or law will still be reviewed, however, any decision rendered will be final.

The district shall have a 21-day review period when a complaint is filed. After the review is complete, a final decision by the Fire Chief shall be recorded and be provided to the complainant. The decision shall include any laws or policies violated, corrective action and recommendations that will be implemented to prevent a violation from occurring in the future.

534.15 SHARING DATA WITH OTHER ORGANIZATIONS / JURISDICTIONS

Any information collected during an incident or special request from another entity shall be made available to that entity as long as that information is not subject to PII.

Information collected that may contain PII, shall not be retained for more than 180 days, unless retention of the information is determined to be necessary to an authorized mission of the retaining agency. Additionally, the information retained must be done using a system of records covered by the Privacy Act.

Information that is part of an ongoing investigation shall not be shared or released unless it is specific to the investigation activities and the outside agency(s) requesting the data. Members of the public or media seeking to obtain information obtained with a UAS that is part of an investigation, must obtain a court order before the district will release such information and conform to all applicable laws, regulations and policies.

534.16 TRANSPARENCY OF UAS OPERATIONS

The District will make this policy available to the public. This policy will be posted on the public facing aviation website.

Under the District's CoW/A, the Fire District may conduct public aircraft operations nationwide in Class G airspace, and in Class B, C, D, and E surface-area airspace within UAS Facility Map limits, including shielded Beyond Visual Line of Sight (BVLOS) operations, operations over people, and operations over moving vehicles. Operations in Class E3/E4 airspace are conducted under an ATO COA. When feasible, the RPIC will file a NOTAM.

The Fire District will keep digital records of all flights, including monthly total flight time, and make them available to the FAA on request, and will provide a year-end summary to the Oregon Department of Aviation and post on our website. This report will include categories of missions flown, mutual aid and complaints about the program.

534.17 TRAINING

Training requirements shall be followed and outlined in the RDPO Standards for UAS Operations and the RDPO Certification Standards for Remote Pilot Operations.

All training will be completed in accordance with all applicable FAA requirements, State requirements and standards identified in the aforementioned document. All pilots in the Scappoose Fire / RDPO program must hold a current FAA Part 107 remote pilot certificate prior to being a part of the Scappoose Fire / RDPO program.

District pilots qualify in two tiers, as set out in the RDPO Certification Standards for Remote Pilot Operations, Chapter 2:

- Tier 1, All-Hazards Remote Pilot: FAA Part 107 remote pilot certificate, A-450 (Small UAS Basic Remote Pilot Course), NIST Level 3, and the All-Hazards UAS Incident Operations course (in development; expected February or March 2027). Tier 1 pilots may respond to all incidents except wildland fire. Until the all-hazards course is released, the RDPO UAS Program Manager may approve an interim equivalent and document it in the pilot's training record.
- Tier 2, Wildland Fire Remote Pilot: all Tier 1 requirements plus S-373 (UAS Incident Operations), and any additional qualification required by the ordering or host agency on interagency incidents. Only pilots holding the Wildfire endorsement on the pilot card shall fly on wildland fire incidents.

Tier 1 pilot cards use green lettering and Tier 2 pilot cards use red lettering. Mission specialty endorsements (Hazardous Materials, which requires NIST Level 5 plus additional training to be determined; Fire Investigation / Crime Scene Documentation; Aerial Ignitions; and Drone as a First Responder, a placeholder until standards are adopted) are issued as set out in the RDPO Standards for UAS Operations, Chapters 3 and 6. Each new or different aircraft platform or specialized ground control station (GCS) software is added to a pilot card only after the A-454 Small UAS Add-on Course and a check ride (RDPO Standards for UAS Operations, Chapter 3). The A-454 add-on, including the manufacturer-required training for the device, is also required before a pilot

uses a parachute recovery system, conducts operations over people or moving vehicles, flies above 400 feet AGL, or conducts payload delivery.

RPICs conducting BVLOS operations shall hold a current pilot card with the ELOS/BVLOS endorsement (tasks BV 01–BV 35). RPICs conducting night operations shall complete documented night training, including night visual illusions. All crew members shall read the current CoW/A and any ATO COA before operating under them.

A refresher will be required to be completed every two years or earlier based upon FAA guidance. In addition, any refresher training added to the IAT portal will be required to be completed.

534.18 OPERATIONS

All Operational requirements shall be followed and outlined in the RDPO Standards for UAS Operations.

All flight Operations will include components of Aeronautical Decision Making (ADM), Crew Resource Management (CRM), Operational Risk Management (ORM), Safety Management Systems (SMS) and use all of the integrated UAS checklists.

Law enforcement missions (including other public safety organizations supporting Law Enforcement) shall follow all applicable Oregon Revised Statutes (ORS) related to UAS. Specifically, ORS 837.

534.18.1 AIRSPACE AUTHORIZATION

Public aircraft operations require an airspace authorization in all airspace, including Class G. The District CoW/A provides that authorization for Class G airspace and for Class B, C, D, and E surface areas within UAS Facility Map limits. Operations in Class E3/E4 airspace require an ATO COA. Operations that exceed these authorizations require an SGI from the FAA System Operations Support Center (SOSC).

534.18.2 SHIELDED BEYOND VISUAL LINE OF SIGHT (BVLOS) OPERATIONS

BVLOS operations shall be conducted only as shielded operations under the District CoW/A, and only by an RPIC holding the ELOS/BVLOS endorsement. The RPIC shall:

- Remain at or below 200 feet AGL, or within 100 feet above an obstruction within 100 feet of the UAS, not to exceed 400 feet AGL, in Class G airspace; and at or below 200 feet AGL or the UAS Facility Map altitude, whichever is lower, in Class B, C, D, or E surface areas.
- Never use smoke, fog, or vapor plumes as shielding.
- Use Standard Remote ID, anti-collision lighting visible to 3 statute miles (on for the entire flight, day and night), and ADS-B In on 1090 MHz and 978 MHz.
- Complete the pre-flight air and ground hazard checklist covering 1 statute mile around the operating area.
- Program return-to-home before takeoff to clear all obstructions while remaining within CoW/A limits.
- Meet the weather minimums in the Program Guide: 3 statute miles flight visibility for all operations, except no less than 1 statute mile during wildland fire operations when

visibility is reduced by smoke; and the UAS at least 500 feet below and 2,000 feet horizontally from clouds.
- Do not fly into known or forecast icing conditions: an outside air temperature of 41 °F (5 °C) or lower with visible moisture, a temperature-dew point spread of 5 °F (3 °C) or less, or frost or ice forming. Manufacturer temperature ratings do not approve flight in icing. The only exception is an imminent threat to life, under the cold weather and icing procedures in the RDPO Standards for UAS Operations, Chapter 4 (see SAFECOMs 23-0164 and 23-0202).
- Fly no faster than 87 knots, with a takeoff weight of less than 55 pounds including all attachments.

534.18.3 TEMPORARY FLIGHT RESTRICTIONS (TFR)

Flying within an incident TFR (14 CFR § 91.137) requires the approval of, and operation under the direction of, the official in charge of on-scene emergency response activities or that official's designated aviation authority (Air Operations Branch Director, aerial supervision, or UAS Coordinator). Consistent with guidance received from the FAA SOSC, an SGI is not required for these operations when conducted under the District CoW/A. All CoW/A limits apply inside the TFR. For other TFRs (VIP, security, or special event), the RPIC shall meet the requirements stated in the NOTAM before flight, which may include an SGI or TSA waiver. The exception is a Red Flag Warning TFR: for pre-ignition monitoring in a Red Flag Warning area, the District may request an SGI from the FAA SOSC, which may issue a TFR to support the operation. The UAS team shall complete the TFR Flight Documentation Form (RDPO Standards for UAS Operations, Appendix G) for every operation in a § 91.137(a)(1), (a)(2), or (a)(3) TFR or a Red Flag Warning TFR, once per operational period and again for each new or amended NOTAM. Approval under a previous NOTAM does not carry over to a subsequent TFR (RDPO Standards for UAS Operations, Chapter 4).

534.18.4 OPERATIONS OVER PEOPLE AND MOVING VEHICLES

Routine operations shall be planned to avoid flight over people and moving vehicles. Flight over people or moving vehicles is permitted only when one of the following applies:

- The UAS is listed on the FAA Declaration of Compliance for Category 1, 2, 3, or 4 operations over people and is operated within its declared category.
- The UAS weighs 0.88 pounds or less and has a mechanism that prevents rotating parts from cutting human skin.
- The UAS is equipped with a PRS that meets ASTM F3322-18 (or newer) and a mechanism that prevents rotating parts from cutting human skin, is operated in accordance with the PRS manufacturer's manual, and is flown over people only at or above the PRS minimum effective deployment altitude. The PRS manual shall be available to the RPIC at all times. The District's approved PRS units are the ParaZero SafeAir M30 Pro (ASTM F3322-18) and the Skydio Parachute System for X10 (ASTM F3322-22, FAA Declaration of Compliance for Categories 2 and 3). PRS checklist items for pre-flight, takeoff, before landing, and after landing are part of the aircraft checklist.
- The flight is necessary to safeguard human life. The RPIC shall then fly no lower, closer, or longer over people or moving vehicles than the mission requires.

The District will use the PRS whenever conditions allow. If the PRS cannot be used and the mission would require sustained flight over people, including participating personnel, the mission shall not be flown, except as necessary to safeguard human life.

Launching or operating a UAS from a moving vehicle is permitted only in uncongested areas, and the RPIC shall update the return-to-home point as the route changes.

534.18.5 DECONFLICTION WITH CREWED AIRCRAFT

Crewed aircraft always have the right-of-way. Before every flight, the RPIC shall call the regional air ambulance dispatch center in Boise, Idaho, to deconflict. On incidents, the RPIC shall follow Fire Traffic Area protocol and obtain clearance from aerial supervision or the UAS Coordinator when assigned. When crewed traffic is detected, heard, seen, or reported, the RPIC shall descend deeper into the shielded envelope, hold clear, or land.

Emergency procedures are printed on the back of the aircraft checklist used before every flight. The visual observer maintains the checklist. In a fly-away or emergency toward an area or airport where the UAS may create a hazard to aviation, the RPIC shall immediately contact the ATC facility having jurisdiction and report the nature of the emergency, the last known position, altitude, and direction of flight, and the maximum remaining flight time.

534.18.6 AVIATION SAFETY REPORTING

The following reports are required:

- NTSB: every accident, incident, or occurrence required by 49 CFR Part 830, by the most expeditious means available.
- FAA (9-AVS-AFS-751-91.113Waivers@faa.gov): every operation less than 500 feet vertically or horizontally from an aircraft with at least one person on board, including the closest point of approach; and the date and description of every loss of control.
- NASA ASRS UAS Report: every accident, mishap, and near miss, including events caused by a manufacturer defect, battery failure, or bird strike. ASRS provides national tracking of these causes across all UAS operators and is filed in addition to the NTSB, FAA, and SAFECOM reports.
- SAFECOM: required for every mishap, near miss, hazard, or unsafe condition on an interagency wildland fire assignment, in addition to the NASA ASRS UAS Report; and for incidents and hazards on other interagency incidents where the host agency uses SAFECOM.

ASRS and SAFECOM reports are in addition to, and never replace, NTSB and FAA reports.

534.18.7 OPERATIONS ABOVE 400 FEET AGL

The District is requesting an FAA waiver for operations up to 1,200 feet AGL in Class G airspace. Until it is issued, all operations remain at or below 400 feet AGL. When it is issued, operations above 400 feet AGL are flown only in Class G airspace, below the floor of overlying Class E airspace, by an RPIC holding the A-454 add-on, with a visual observer or second pilot, and in accordance with the waiver and the RDPO Standards for UAS Operations, Chapter 4.

534.18.8 PAYLOAD DELIVERY

Payload delivery is conducted only with the Freefly Alta X (District limit 20 pounds, including the release device) or the DJI M30T with a drop device, by an RPIC holding the A-454 payload delivery add-on. The aircraft as configured, including the payload, drop device, and any PRS, shall not exceed the manufacturer's maximum takeoff weight. Approved payloads are the Restube rescue buoy and the Motorola floating FRS radio. Any other payload requires written approval of the RDPO UAS Program Manager. Payloads shall not be released over people or moving vehicles or where they could create a hazard to persons or property, and hazardous materials shall not be carried (RDPO Standards for UAS Operations, Chapter 4).

534.18.7 RESPONSE CONFIGURATION (U-MOD)

Best practice is for the District to respond as a UAS Module (U-MOD): a U-MOD Supervisor, a UAS Pilot (RPIC), and a Visual Observer or second pilot. The U-MOD Supervisor is the single point of contact with the Incident Commander or Air Operations and does not fly while supervising. The minimum operational response is a qualified pilot and a second person. When a full U-MOD cannot be staffed, the RPIC also performs the U-MOD Supervisor duties (RDPO Standards for UAS Operations, Chapter 2).

534.19 REVIEW OF POLICY

This policy shall be reviewed every two years. This review is necessary to update any new laws, regulations the collection, use, retention, and dissemination of information pertaining to UAS. This is necessary to ensure that privacy, civil rights, and civil liberties are protected. With speed at which the industry is evolving, it is necessary to make sure the district is not missing anything.

534.20 AUDIT AND OVERSIGHT

In addition to the policy review every two years, Scappoose Fire District's UAS Management Team will perform an annual audit of the program to ensure that the sUAS program is adhering to the following:

a. Scappoose sUAS policy and procedures

b. Federal regulations regarding UAS operations, including the District CoW/A

c. State and Federal Regulations regarding storage of sensitive information

d. State and Federal Regulations regarding privacy

e. Include a yearly overview of the UAS program in the publicly published Annual Report

534.21 REPORTING

The deployment of any UAS should be documented in the National Emergency Response Information System (NERIS) report consistent with the requirements of NERIS. The report shall show the vehicle used to respond and the CAD identifier of the UAS flown.

534.22 STATE REPORTING REQUIREMENTS

The Scappoose Fire District shall provide an annual UAS report to the Oregon Department of Aviation in accordance with ORS 837.360.