Introduction

This Flight Operations Manual (FOM or “manual”) provides guidance for the conduct for the small unmanned aircraft system (sUAS or drone) flight operations.

The City of Gaithersburg is dedicated to highly professional flight operations. Safety is always the first priority, and the sUAS team will be persistent in continuously demonstrating an effective program.

The sUAS program builds upon federal regulations, providing more detail and guidance when necessary to ensure the highest levels of safety. Gaithersburg recognizes compliant sUAS operations includes obeying all local, state and federal laws and regulations.

All sUAS personnel are to be familiar with this manual and are to comply with its provisions. Changes to this manual will be promptly disseminated to all sUAS personnel.

Shall vs. should vs. may vs. will — each of these implies specific requirements:

- Use of the word *shall* implies that a procedure or statement is mandatory and must be followed to comply with this standard. Since *shall* statements are requirements, they include sufficient detail needed to define compliance.

- *Should* implies recommended. *Should* statements are provided as guidance towards the overall goal of improving safety and could include only subjective statements.

- *May* implies optional at the discretion of the manufacturer, or operator. *May* statements are provided to clarify acceptability of a specific item or practice, and offer options for satisfying requirements.

- *Will* implies compliance with future, not yet realized activities or events.
Record of Manual Changes

Changes are promulgated as required by the sUAS Manager and are issued to each document holder.

Each amended page shall record the appropriate amendment number and date.

It is the responsibility of the document’s holder to insert all amendments issued to him/her in a timely manner.

Record of Changes

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1. General Information

1.1 Purpose

This document applies to all sUAS flight operations conducted by the City of Gaithersburg, Maryland (hereafter known as the “City”), including designated locations in accordance with Federal Aviation Administration (FAA) requirements. This document describes the management of sUAS aircrew training. The policies and procedures in this document are issued by the authority of the City Manager (hereafter known as “Executive”).

Unless otherwise stated, all sUAS operations described herein are based upon compliance with applicable FAA Regulations, at 14 CFR Part 107. Any new authorizations or waivers shall require an update to this document and training for affected personnel before conducting those operations.

1.2 Authority

The Executive retains ultimate authority for the conduct and operation of the sUAS program, receiving strategic guidance and fiscal support from the City. This document applies to all City personnel involved in the sUAS program and those who request their services. The Executive has delegated authority to the sUAS Manager (hereafter known as “Manager”) for daily program management unless otherwise noted herein.

1.3 Administration

This manual addresses sUAS flight operations as the procedures existed when this document was drafted. Personnel, equipment, environment, and other factors change over time. A systematic approach to monitoring change is critical to ensuring this manual remains relevant. The entire document will be reviewed annually by the Manager to ensure it is current. Changes to this document must be approved by the Manager. The program is administered under these documents:

- sUAS Flight Operations Manual
- sUAS Aircrew Training Program
- sUAS Maintenance Program
- sUAS Field Guide

1.4 State and Local Laws

The City shall adhere to all applicable federal, state and local laws pertaining to the use and operation of sUAS.

1.5 Regulatory Compliance

City personnel shall comply with Title 14 CFR Part 107, to include any special provision, exemptions, or authorizations issued to the City. FAA guidance in the form of Advisory
Circulars, Orders, Notices, and Bulletins will be reviewed to assist the City in remaining compliant.

1.6 Distribution of Information

The City will disseminate operational information to aircrew personnel through the use of City communications, quarterly (or more frequent) safety/staff meetings, and memoranda. This includes items such as FAA updates, safety concerns, equipment management, and information that benefits the sUAS team.
2. Program Description

2.1 Regulatory Requirements

The City exceeds FAA regulatory requirements by requiring personnel to complete an in-house training program before being designated as a Remote-Pilot-in-Command (RPIC). This includes additional classroom and practical training, culminating in an evaluation to achieve a higher level of safe sUAS operations as specified in the City’s Aircrew Training Program document. No personnel shall be designated a RPIC until meeting prescribed performance-based standards, and only designated City RPICs shall be used for field operations when operating City sUAS.

2.2 Organization

The organizational structure offers a system of checks and balances to provide a repeatable, effective, and sustainable program with scalability. The Executive provides executive leadership while the Manager is responsible for the overall direction and performance of daily operations. The Safety Manager, Lead Remote Pilot, Remote Pilots, Visual Observers, Camera Operators, Maintenance Supervisor, and Data Supervisor report to the Manager as depicted in Figure 1. These are collateral duties assumed by City personnel and may not require individual staff for each duty.

Figure 1 – sUAS Organization Chart
2.3 Designation Requirements and Responsibilities

2.3.1 Manager

Appointed by the Executive, the Manager is responsible for the daily program management, operation, and administration. The Manager is accountable for the overall safe operation of the sUAS team and achievement of safety goals.

- **Requirements**
  - City Employee
  - Current FAA Remote Pilot certificate with sUAS rating
  - Organizationally designated as a RPIC
  - Organizationally designated as an Instructor (optional)

- **Duties**
  - Organizing and directing
    - Budget
    - Operations
    - Safety
    - Scheduling
    - Training programs
    - Maintenance programs
    - Data management
    - Procurement
      - Liaison with the local, state, and federal stakeholder organizations
      - Developing and implementing the safety management systems
      - Developing and maintaining program manuals and documents
      - Liaising with internal departments
      - Ensuring local, state, and federal compliance
      - Ensuring that all crewmembers are kept informed of any changes to the regulations and operating standards
      - Disseminating aircraft safety information, both internally and externally
      - Supporting approved missions
Ensuring that qualifications are complete, currency requirements are satisfied
Facilitating Crew Resource Management (CRM) training
Performing additional responsibilities as delegated by the Executive

Field attire. Per City policy, otherwise a safety vest.

2.3.2 Lead Remote Pilot (LRP)
The Manager will appoint the LRP. The LRP is primarily responsible for the training program administration and its updates and revision. The LRP, or his or her designated representative, develops and executes the training plan, ensures all crewmembers are qualified, and manages training records.

Requirements
City Employee
Current FAA Remote Pilot certificate with sUAS Rating
Organizationally designated as a RPIC
Organizationally designated as an Instructor

Duties
Evaluating initial qualification and annual proficiency check flights for RPIC
Developing and implementing all required training programs for the flight crews
Maintaining training and flight records for flight crews
Maintaining records for each sUAS
Issuing directives and notices to the flight crews as required
Taking action on and distributing mishap, incident, and other occurrence reports
Supervising sUAS crews as necessary
Supporting approved missions
Administering evaluations
Providing instruction
Facilitating CRM training
Performing responsibilities delegated by the Manager

Field attire. Per City policy, otherwise a safety vest.
2.3.3 Remote Pilot-in-Command (RPIC)

The Manager must approve all City personnel before they initiate training to become a RPIC. The RPIC of a flight is directly responsible for, and is the final authority for the safe and effective operation of the sUAS. Deviation from specified flight and operating instructions is only authorized during an in-flight emergency situation when, in the judgment of the RPIC, safety justifies such action. Responsibility for starting or continuing flight with respect to weather or any other condition affecting the safety of the sUAS rests with the RPIC.

Only City-designated RPICs may operate City sUAS or supervise the person manipulating the controls. Training requirements are defined in the City Aircrew Training Program manual.

- **Requirements**
  - City Employee
  - Current FAA Remote Pilot certificate with sUAS Rating
  - Organizationally designated as a RPIC

- **Duties**
  - Complying with federal, state, and local regulations and laws
  - Supporting approved missions
  - Supervising City personnel that manipulate the controls
  - Performing responsibilities delegated by the Manager

- **Field attire. Per City policy, otherwise a safety vest.**

2.3.4 Instructor

As directed by the LRP, Instructors provide training support. Instructors should be selected based on RPIC knowledge, skills, and aptitude required to be an effective trainer. Those that are designated as Instructors should strive to maintain a high degree of professionalism in all sUAS activities. Training requirements are defined in the Aircrew Training Program manual.

- **Requirements**
  - City Employee
  - Organizationally designated as a RPIC
  - Organizationally designated as an Instructor

- **Duties**
  - Providing instruction
  - Facilitating CRM training
2.3.5 Person Manipulating the Controls

The person manipulating the controls is a person who has not been designated a RPIC. This individual may operate the sUAS as long as he or she is directly supervised by a RPIC, and the RPIC has the ability to immediately take direct control of the sUAS. The person manipulating the controls must be an employee and been approved by the Manager.

2.3.6 Visual Observer (VO)

The VO is responsible to the RPIC for ensuring the sUAS does not operate in unsafe proximity to any manned air traffic or other hazards. VOs are required for all missions unless waived by the Manager. Training requirements are defined in the Aircrew Training Program manual.

- Requirements
  - City Employee
  - Designated as a VO

- Duties
  - Communicating sUAS location, attitude, altitude, and direction of flight.
  - Communicating the position of other aircraft or hazards in the airspace.
  - Communicating the determination that the sUAS does not endanger the life or property of another.
  - Supporting approved missions

- Field attire. Per City policy, otherwise a safety vest.

2.3.7 Camera Operator (CO)

The CO is responsible for operating the camera installed on the aircraft. CO’s are optional crewmembers, and in some instances the sUAS may not have a separate camera control device for a CO. The CO may, on occasion, be responsible for training new CO’s. The CO responds to the RPIC regarding issues of safety. Training requirements are defined in the Aircrew Training Program manual.

- Requirements
  - City Employee
  - Organizationally designated as a VO
• Duties:
  o Coordinating with RPIC on camera direction and data collection goals
  o Supporting approved missions
  o Supporting with data management
• Field attire. Per City policy, otherwise a safety vest.

2.3.8 Maintenance Supervisor (MS)

Assigned by the Manager, the MS or designated representative, is responsible for the design, planning, management, and implementation of all maintenance activities on sUAS. His or her primary responsibility is to ensure that all sUAS are maintained through effective maintenance systems so that each sUAS operates in a safe and reliable airworthy condition.

The MS utilizes all current and applicable manufacturer’s, technical, and regulatory materials, manuals, releases, and publications necessary to perform these duties. The MS removes any sUAS identified or believed as not airworthy. The MS may also be a crewmember.

The MS’s duties include:

• Developing and implementing maintenance schedules and tasks to include high-time components and forced-removal components per manufacturer’s guidance and, where none exists, developing a schedule.
• Maintaining all maintenance records for each ground control station (GCS), aircraft, and software system required for operating sUAS.
• Maintaining liaison with the manufacturer and its suppliers for replacement parts and reliability-based systems.

2.3.9 Data Supervisor (DS)

The DS is responsible for managing the lifespan of collected data, from its collection to its destruction. The DS is trained in fundamentals of information technology, data handling, analysis, and related privacy and security considerations. The DS is responsible for all equipment and software that stores and processes data. The DS complies with federal, state, and local data policies and provides training to flight crews on data management. The DS manages the sUAS data policy. The DS may also be a crewmember.

2.3.10 Safety Manager

The final authority and accountability for all aspects of the safety program rests with the Safety Manager. The Safety Manager is responsible for:

• Final authority for safety programs
• Responsible for implementing Safety Management System (SMS)
• Assists in hazard analysis and risk assessments
• Direct access to management on matters of safety
• Conducts an Annual Safety Management System Audit
• Conducts SMS Indoctrination Training for new personnel
• Conducts quarterly safety training
• May also be a crewmember

2.4 Authorized Uses for sUAS

All missions must be conducted in a manner that protects the rights of citizens, in compliance with all applicable laws, and supports the City goals. Mission examples include marketing videography and project site aerial photographs. This list gives direction to crews and provides for accountability for unauthorized missions. All personnel must be properly trained, equipped and have demonstrated their proficiency to perform these missions. Absent exigent circumstances, every sUAS operation shall be subject to pre-mission review and authorization by the Manager. New missions (not on authorized list) may not be flown until approved by the Manager.

2.5 Recurring Reports, Certifications and Approvals

The sUAS program consists of several milestones as summarized below.

• Annual Safety Management System Audit (Safety Manager)
• Biennial (every 24 months) FAA Remote Pilot knowledge test (administered by the FAA)
• Training
  o SMS Indoctrination Training (new personnel)
  o Annual Crew Resource Management (CRM) Training (RPICs and Crewmembers)
  o Quarterly Aviation Safety Meeting (RPICs and Crewmembers)
  o Annual RPIC Evaluation (RPICs)
3. Safety Management System (SMS)

SMS is the formal, top-down, organization-wide approach to managing safety risk and assuring the effectiveness of safety risk controls. It includes systematic procedures, practices, and policies for the management of safety risk. The four components of a SMS program include:

- Safety Policy and Objectives
- Safety Risk Management
- Safety Assurance
- Safety Promotion and Training

3.1 Safety Policy and Objectives

3.1.1 Policy

Safety is the program’s highest priority with zero accidents as the primary goal. City management is committed to providing safe, healthy, secure working conditions and attitudes with the objective of having an accident free work environment. The City promotes a “Just Culture” of open reporting all hazards in which management will not initiate disciplinary action against any personnel who, in good faith, discloses a hazard or safety occurrence due to unintentional conduct. The policy embraces the following safety principles:

- Always operate in the safest manner possible
- Never take unnecessary risks
- Recognize that safe does not mean risk free
- Hold everyone accountable and responsible for the identification and management of risk

3.1.2 Objectives

Two primary objectives of the safety policy are to manage safety proactively and effectively. This is accomplished by:

- Obtaining consistent, optimal sUAS and human performance
- Identifying and managing safety risks specific to flight operations
- Actively seeking feedback on and improving safety management activities

3.2 Safety Risk Management (SRM)

The SRM strategy is comprised of philosophical and practical facets. Philosophically, safety is the most important aspect of the mission. Practically, the safety level of missions performed by personnel is enhanced through risk identification and risk mitigation processes. This is accomplished through:

- Hazard Identification and Analysis
• Risk Assessment and Mitigation

Mission Assessments are carefully and thoughtfully completed for each new mission. Preflight and post-flight briefings contain risk analyses, risk mitigation options, and lesson-learned reviews. Quarterly Aviation Safety Meetings provide a forum for open discussion of topics of concern, new ideas, and lessons learned.

3.2.1 Hazard Identification & Analysis

Hazard Identification and Analysis is a collective term that encompasses all activities involved in identifying and analyzing hazards throughout the mission’s life cycle. The goal is to make certain that risks to employees, the public, or the environment are consistently controlled within the risk tolerance. This typically addressed three main questions:

- Hazard – What can go wrong?
- Consequences – How bad could it be?
- Likelihood – How often might it happen?

RPICs shall develop a Preliminary Hazard List (PHL), addressing the: who, what, where, when, why and how. For example, a reasonable hazard to consider is the aircraft impacting an object, such as a tree or building. This should be listed on the PHL. The PHL may remain the same for repetitive and similar missions, but if the flight location changes, the PHL should be reassessed to determine if a new hazard was introduced, or an existing one removed. The PHL is used to inform the Risk Assessment.

Every member of the sUAS program must understand their role in identifying, reporting and mitigating hazards. The reporting system must process hazard reports in a timely manner in order to communicate hazard information to all concerned members.

3.2.2 Risk Assessment & Mitigation

By their very nature, sUAS operations involve some element of risk. In keeping with the Program’s operational and safety policy, the Risk Assessment and Mitigation effort is an essential element of the primary safety goal of no accidents.

The program places the highest emphasis on safety, ethics and the rule of law in all aspects of the program’s operation. This philosophy uses risk management as a means of identifying, assessing and mitigating risks. No mission is so critical that would necessitate acceptance of a high risk wherein hazards associated with or causing the higher risk cannot be mitigated or require deviation from safety policies, procedures, training standards or the prudent judgment of the aircrew. No mission is so critical that unethical, or legally questionable tactics are permitted.

The Risk Assessment determines and analyze the risk factors related to the severity and likelihood of potential events associated with the PHL, and identifies appropriate risk mitigation strategies. At a minimum, the Risk Assessment process shall:
• A Risk Assessment shall be completed by the assigned RPIC.
• If the risk is scored as Medium or High, the RPIC and Manager shall analyze the risk and develop mitigation measures to reduce the risk to an acceptable level.
• See Enclosure (1) for the Risk Assessment.

Additional risk mitigation or elimination procedures are applied, when possible. The RPIC, however, has authority to cancel the proposed flight without further consultation anytime that he or she deems it appropriate. The City will not question decisions made by the RPIC regarding risk assessment.

3.3 Safety Assurance

Regular evaluation of safety related issues, including training; operations; maintenance; equipment and communications, helps identify hazards and risks. The goal is to properly mitigate risk in order to reduce it to the lowest possible level.

The Manager shall monitor operational data to ensure the effectiveness of safety risk controls and assess system performance. An annual SMS audit by the Safety Manager helps ensure effectiveness of the safety program. If the City contracts for services, they shall be monitored on a regular basis and inspected annually to ensure compliance with the standard.

3.4 Safety Promotion and Training

Safety training and education are essential for the SMS program to achieve its goals. SMS Indoctrination Training for new personnel are intended to familiarize new personnel with the purpose and process of SMS as well as hazards associated with unit operations.

SMS Indoctrination Training shall be provided to all members of the sUAS program and shall address the purpose of the SMS, individual responsibilities, and general hazards associated with sUAS operations. Initial safety training shall be completed prior to assuming sUAS duties. All training shall be documented.

3.5 Change Management Process

When a decision is made to modify a process, procedure, or program, the proposed change shall be reviewed by the Manager. If the change is approved, it is implemented in accordance with the following procedures.

• The change process, including the risk assessment, is recorded
• The amended process or procedure or information in the amended program is distributed to all sUAS team members via e-mail by the Manager or person assigned the task
• The operations manual and other associated documentation is amended and distributed to all document holders.
Prior to undergoing any significant change that could impact the program, a change management process is undertaken. Some events that could indicate the need for such a process are as follows.

- The introduction of a new sUAS
- Significant change in the nature of the operation (e.g., new operating environment, etc.);
- Changes in hiring or scheduling practices
- Changes to City structure
- Significant change in aircraft maintenance arrangements, etc.

As soon as it has been determined that the change event will occur, the Manager, or the person to whom the responsibility is delegated, will develop a Change Management Plan. The Change Management Plan will include a risk analysis of the change event and an assessment of the changes required to items such as:

- Operating and maintenance procedures and processes
- Personnel training and competency certification
- Aircraft Standard Operating Procedures (SOPs)
- A plan for development of the required changes

When the required changes have been developed, a SMS Audit is conducted by the Safety Manager before the change is implemented. After implementation of the change, the Manager will review system performance at regular intervals. If there is any doubt of the effectiveness of the change management process, a more comprehensive post-implementation review or a SMS Audit is conducted.

### 3.6 Deviations to Flight Operations Manual (FOM or “manual”)

The Manager may approve temporary amendments to the FOM or deviations to specified FOM provisions. Temporary amendments shall be distributed in the same manner as other operational information. They shall also be transmitted to all sUAS team members via e-mail along with information on the conditions under which such deviations may or must be used, if such considerations apply.

Unless otherwise stated, all sUAS operations described herein are based upon compliance with 14 CFR Part 107. Any new authorizations or waivers shall require an update to this manual and training for affected personnel before conducting those operations.

### 3.7 Safety Management System Audit

A SMS Audit is an independent evaluation of the safety management system. While such an audit may be done to meet an external requirement, the prime purpose of an audit is to identify areas in which safety performance may be evaluated and enhanced. An audit is used to validate
the program safety-risk profile, which in turn shall be employed as the basis to evaluate safety performance. It may include the following.

- Interviews with managers and operational staff within and outside of the City
- Document reviews (e.g., for completeness, currency, and appropriateness)
- An evaluation of the safety management tools being employed by the City

For assistance in analyzing hazards and the associated safety-risks, the City will use the Safety Manager to conduct the Audit unless an outside entity is identified. When the Audit is completed, it is submitted to the Manager.
4. Mission Workflow

4.1 General

Mission planning activity is conducted by the RPIC prior to takeoff to ensure that the flight will be conducted safely and in accordance with all applicable standards and regulations. The activity includes, but is not limited to, such things as checking weather, airspace analysis, equipment configuration, identifying crewmembers, and notifying property owners. The standard workflow for coordinating operations is depicted in Figure 2.

Figure 2 – Mission Workflow
4.1 Mission Workflow
The Manager shall designate a RPIC and a VO for each flight. Only the Manager can waive the requirement for a VO. Once a flight is authorized by the Manager, the RPIC may commence mission planning activities as depicted below.

4.2 Mission Workflow Steps
It is imperative that constant and open communication occurs during all phases of the Mission Workflow.

- Step 1: Complete Mission Assessment Form (Manager), see Enclosure (2). If the Manager approves the request for sUAS support, proceed to Step 2. If disapproved, the Manager notifies organization or person their request for support was denied.
- Step 2: Assign crew (Manager) from Personnel List, see Enclosure (3).
- Step 3: Complete Mission Prep Checklist (RPIC), see Enclosure (4).
- Step 3a: Complete Risk Assessment (RPIC), see Enclosure (1). If risk is assessed as Medium or High, contact Manager to review before proceeding.
- Step 4: Dispatch (Manager), see Enclosure (5) for contact information.
- Step 5: Complete Mission Brief (RPIC), see Enclosure (6).

***Fly Mission***
- Step 7: Submit a Mission Report (RPIC), see Enclosure (8).

4.3 Authorized Uses for sUAS
Only authorized missions listed in Enclosure (9) shall be flown. Absent exigent circumstances, new missions that are not on authorized list, may not be flown until approved by the Manager.

4.4 Weather and Night Operations
Prior to commencing flight operations, the RPIC must ensure all weather conditions will support safe and compliant operations. The RPIC must ensure that the available weather information indicates that the meteorological conditions will permit flight under the following conditions:

- Minimum weather visibility is 3 statute miles from control station.
- Aircraft must remain 500 feet below and 2000 feet horizontally from clouds.

Operations are not permitted at night, which is defined as the hours between end of evening civil twilight to beginning of morning twilight, unless approved by FAA waiver.

4.5 Property Access
RPIC’s may need to obtain permission before conducting flight operations, to include the following: 
• Government
• Private property owners

In some instances, verbal permission is acceptable, otherwise written permission forms will be maintained at the mission site until flight operations are completed and should be maintained per organization policy. See Enclosure (10) for the Property Access sample form.

4.6 Airspace

The RPIC shall conduct an analysis of the airspace before flight operations. Operations are restricted or prohibited without additional permissions or waivers in the following areas:

• Above 400 feet AGL
• Airports with controlled Class B, C, D, or E airspace
• Special Use Airspace which includes Restricted and Prohibited areas
• Temporary Flight Restriction
• Special Flight Rules Area
• Special Security Instruction Areas

4.6.1 Airspace Tool

There are several technologies to help assess airspace, to include the FAA’s partner web site, “Know Before You Fly” (http://knowbeforeyoufly.org/air-space-map/) and its companion mobile app.

4.6.2 NOTAMS

RPIC’s are required to comply with all existing Notice to Airman (NOTAM) regardless of the type of UAS operation, per federal regulations. NOTAM information may be accessed at www.pilotweb.nas.faa.gov/PilotWeb, or calling Flight Service at 1-800-992-7433.

4.6.3 Takeoff and Landing Area

Multirotors or vertical lift aircraft have minimal requirements for takeoff and landings. Consider proximity to hazards such as power lines, trees, people, and vehicular traffic. Other factors include locating a level and debris free ground.
5. Operational Requirements

The City shall comply with federal, state, and local regulations and laws. Operation of the sUAS will be within the parameters and limits set forth by its manufacturer, using qualified, trained, and proficient operators flying missions that are within the scope and approval of City.

5.1 Field Guide

City crewmembers shall reference the sUAS Field Guide while in the field supporting sUAS missions. The Field Guide is a condensed version of the City’s sUAS program.

5.2 Operational Control

Operational control is defined as the exercise of authority over the preparation with respect to the flight of sUAS, using a three-level system.

- **Level 1**: The Executive, who is responsible for the program.
- **Level 2**: The Manager, who controls the daily routine and no flight is undertaken unless it is approved by the Manager. The Manager directs and provides guidance, standards, processes, procedures, missions and personnel for the program.
- **Level 3**: The RPIC.

5.3 Flight Watch

Current information on the location of sUAS is maintained by the Manager at all times or his or her designee. The RPIC will ensure that first takeoff and last landing for the mission is communicated to the Manager.

5.4 Aircraft Logs

All flight operations require record keeping. Data taken during flight mission is cataloged and recorded according to the prevailing regulations and laws of the state. Flight data recording is saved and assessed for safety implications, efficiency adjustments, and privacy protection. See the City’s Maintenance Program manual for more details.

5.5 Privacy

The sUAS program participants shall adhere to the City’s Use and Privacy Policy, as well as the City’s Good Neighbor guidance described in Enclosures (11 and 12) during sUAS operations that can, or have the potential to, capture, store, transmit, and/or share data, including audio, video, visual images, or other personally identifiable information which may include the time, date, and geographic location where the data were captured.
5.6 Medical Condition

Personnel may not participate in the operation of a sUAS if they know or have reason to know that they have a physical or mental condition that could interfere with the safe operation of the sUAS.

5.7 Training

All qualification and training requirements are described in the organization’s Aircrew Training Program.

5.8 RPIC Proficiency

Prior to conducting missions, RPICs must have made, within the previous 90 days, a minimum of three takeoffs and landings in the same sUAS category (e.g., quad copter, fixed wing, etc.).

5.9 Air Traffic Control (ATC) Communications

The RPIC must comply with FAA directed communications plan and per FAA requirements when stipulated. Most 14 CFR Part 107 operations do not require ATC communications.

5.10 Inter-Communication Requirements

Any VO, CO, or other person charged with providing see-and-avoid assistance must have immediate direct voice communication with the RPIC. When the RPIC pilot is in communication with ATC, monitoring of the ATC frequency by all sUAS crew is required for shared situational and navigational awareness. However, unless it is approved for others to do so, the RPIC is the only crewmember that will communicate with ATC.

5.11 Minimum Crew Composition for UAS Operations

The minimum crew shall consist of a RPIC and at least one other crewmember performing the duties of a VO, unless waived by the Manager.

5.12 Electronic Devices

The use of electronic devices, such as cellular phones, other than for sUAS mission-required usage shall be avoided so as not to interfere with the sUAS operation.

5.12.1 Flight Area Boundaries

During the mission, the sUAS shall remain in controlled flight, within the designated boundary as defined by the RPIC, and within regulations. During autonomous operations, any sUAS appearing uncontrolled or moving beyond the boundary limit is subject to immediate manual override. Failure of manual override will result in flight termination.

Aircraft location and altitude will be displayed in real-time with respect to the boundaries and approved altitude limits; this is a prerequisite for any flight that is flown autonomously.
5.12.2 Sterile Cockpit
The RPIC will ensure nonparticipating persons do not interfere with safe operations to include maintaining a sterile, distraction free, sterile cockpit for the RPIC.

5.12.3 Precipitation
Unless the manufacturer specifications state otherwise, sUAS are not water proof and flight in precipitation (rain or snow) may result in aircraft damage and ultimately unsafe flight characteristics.

5.12.4 Cold Weather
Cold temperatures will affect equipment and the operators controlling the sUAS. Freezing temperatures will adversely impact LiPo batteries found on most sUAS today, reducing their available power output. LiPo batteries may require special handling (warming) before use to ensure the internal chemical reaction provides the expected power output. Operators may find controlling the aircraft with gloved hands cumbersome, with reduced tactile feeling through their fingers that hinders switch movement. Crews shall prepare in advance before the first cold weather operation to ensure appropriate personal gear, equipment handling, and procedures are established.

Where frost, ice, or snow exists, the RPIC shall not commence a flight unless the aircraft has been inspected to determine whether any frost, ice, or snow is adhering to the critical surfaces as defined. Such inspection shall be carried out by the RPIC.

When any frost, ice, and/or snow are found adhering to any critical surface, the contaminant will be removed completely before any flight is attempted. If a clean aircraft cannot be assured, the only acceptable alternative is to cancel or postpone the flight until conditions are acceptable.

No RPIC shall commence a flight in or continue a flight into known or expected icing conditions where the formation of ice on the aircraft may adversely affect the safety of the flight.

5.12.1 Maritime Operations
Operations over water is permitted, however, launch and recovery from a vessel that is underway requires Manager approval.

5.12.2 Inflight Battery Power Minimum
Flight planning should always allow for executing an entire mission and landing with at least 25 percent reserve battery capacity. RPICs shall not operate sUAS below 25 percent battery reserve.
5.12.3 Night Vision Technology

Night vision technology is permitted, however, night time sUAS operations requires a FAA waiver.

5.12.4 Fire Extinguishers

Fire extinguishers, appropriate for the types of hazards encountered, shall be readily available, consistent with laws and regulations. All personnel shall be properly trained on the proper use of the equipment.

5.12.5 Operations from a Moving Vehicle

With prior approval from the Manager, the RPIC may operate the sUAS from a moving land or water-borne vehicle over a sparsely-populated area. However, operation from a moving aircraft is prohibited.

5.12.6 Visual Line of Sight (VLOS) Operation

The RPIC and person manipulating the controls must be able to see the sUAS at all times during flight. Therefore, the sUAS must be operated closely enough to the control station to ensure visibility requirements are met during operations. This requirement also applies to the VO if used during the aircraft operation. VLOS must be accomplished and maintained by unaided vision, except vision that is corrected by the use of eyeglasses (spectacles) or contact lenses. “Daisy chaining” VO’s is not permitted.

5.12.7 Remaining Clear of Manned Aircraft

The RPIC has a responsibility to operate the aircraft so it remains clear and yields to all manned aircraft.

5.12.8 Minimum Standoff Distances and Maximum Altitudes

Regulations prohibit flying a sUAS directly over a person who is not under a safe cover, such as a protective structure. However, a sUAS may be flown over a person who is directly participating in the operation of the sUAS, such as the RPIC, other person manipulating the controls, a VO, or crewmembers necessary for the safety of the sUAS operation, as assigned and briefed by the RPIC. A stationary vehicle is considered safe cover, while a moving vehicle is not considered safe shelter.

Although not stipulated by the FAA, for City organizational operations the minimum aircraft standoff from people is 10 feet laterally.

5.12.9 Transportation of Property

With prior approval from the Manager, the RPIC may transport property (such as medical supplies) with the sUAS. These operations must be conducted in compliance with regulations.
5.12.10 Prohibiting Arming sUAS

Organization sUAS are prohibited from attaching or deploying weapons of any kind from the aircraft.

5.12.11 Wind Limitations

In the absence of manufacturer’s guidance, the Manager shall establish wind limitations appropriate for the intended sUAS mission and known aircraft operating parameters. When no limitations exist, the max sustained wind limit is 25 knots.

Operations in winds greater than the above shall require the Manager’s approval.

5.13 Required Documents

All missions shall dispatch with the following required documents.

- Field Guide
- sUAS Manufacturer Flight/Operations Manual
- Remote Pilot Certificate for RPIC
- FAA airspace authorizations/waivers (if applicable)

5.14 Aircraft Weight and Balance

The RPIC is responsible for the proper loading, including load security, weight, and weight distribution. The load shall be distributed to ensure that the center of gravity will remain within the prescribed limits throughout the entire flight.

5.15 Checklists

Unless otherwise provided by the manufacturer, supplemental checklists have been established for sUAS operations. Each checklist contains the date of the last revision. Every crewmember shall follow the checklist in the performance of their assigned duties.

5.16 Special Operations

Special operations, defined as missions not conducted on a routine basis, shall be thoroughly evaluated to ensure that the operation does not exceed the capabilities of the sUAS program. Each special operations mission should be evaluated to determine if specific procedures, training and/or equipment are in place to accomplish the mission. Special operations missions shall not be authorized until all of these requirements have been met and the Manager approves.
6. Emergency Procedures

Even though there are recommended procedures within this guide, they are not a substitute for sound judgment. Situations affecting the lives and property of others may require deviation from the recommended procedure.

6.1 Accident Reporting

Per 14 CFR Part 107, an accident report must be made within 10 calendar-days of the operation that created the injury or damage as defined below:

- Serious injury: if a person requires hospitalization, but the injury is fully reversible. Including, but not limited to, head trauma, broken bone(s), or laceration(s) to the skin that requires suturing.
- Damage to any property, other than the small AV, if the cost is greater than $500 to repair or replace the property (whichever is lower).

The report may be submitted to the appropriate FAA Regional Operations Center (ROC) electronically or by telephone. Reports may also be made to the nearest jurisdictional FSDO. See Enclosure (13) for Incident Report guidance.

6.2 Abnormal Procedures

When provided, crews should adhere to manufacturer’s procedures and use the following as supplemental guidance. If the manufacturer provided no guidance, then crews may tailor the following to satisfy organizational requirements.

6.2.1 Lost Link

Lost Link occurs when there is a loss of command and control link between the control station and sUAS. One outcome is the sUAS performs a Lost Link Procedure per design specifications established in the aircraft operator’s manual and as planned during preflight, such as an autonomous return-to-home.

1. Verify Lost Link – RPIC
2. Announce “Lost Link” to crew – RPIC
3. Attempt to regain link (cycle power, switches, antenna) – RPIC
4. If link regained, continue at RPIC discretion
5. If link not gained, monitor Lost Link Procedure, prepare for recovery – RPIC
6. Assist with preparing landing area - VO
6.2.2 Global Positioning System (GPS) Failure

GPS is not required for safe flight, but does enable many features that increase aircraft flight stability and enables flight automation. Most systems provide warning signals to alert when there is a loss of GPS.

1. Upon receiving an alert, or observing no GPS for more than 10 seconds, proceed with manual flight control and land – RPIC
2. Announce loss of GPS to crew - RPIC

6.2.3 Fly-Away

Fly-away is an interruption or loss of the control link, or when the pilot is unable to effect control of the aircraft and, as a result, the sUAS is not operating in a predictable or planned manner. In event of a fly-away, the pilot and flight crew and team shall make every effort to reestablish control of the sUAS and land it as soon as possible. Information on location, direction of travel, altitude, and expected vehicle behavior will be relayed to all appropriate authorities.

1. Attempt changing flight modes to regain control – RPIC
2. Announce Fly away to crew – RPIC
3. Notify ATC as required – RPC
4. Assist with tracking last known course and speed - VO
5. Attempt recovery - RPIC

6.2.4 Loss of Control

Loss of control may be the result of mechanical, software, or battery related problems that adversely affect flight characteristics and result in out-of-control flight.

1. Attempt to regain control and land – RPIC
2. Announce loss of control – RPIC
3. Assist in clearing all personnel from area - VO

6.2.5 In-Flight Fire

1. Land immediately in safe area away from personnel – RPIC
2. Locate and use fire extinguisher – VO
3. Contact fire department (if required) - RPIC
7. **Data Management and Privacy**

As with information collected by federal, state and local governments using any technology, where sUAS is the platform for collection, information must be collected, used, retained, and disseminated consistent with the City’s Use and Privacy Policy, as provided in Enclosure (11), and any applicable regulations and policies. Organizations must, for example, comply with the Privacy Act of 1974 (5 U.S.C. 552a) (the "Privacy Act"), which, among other things, restricts the collection and dissemination of individuals' information that is maintained in systems of records, including personally identifiable information (PII), and permits individuals to seek access to and amendment of records.

Particularly in light of the diverse potential uses of sUAS, expected advancements in sUAS technologies, and the anticipated increase in sUAS use in the future, the City shall take steps to ensure that privacy protections and policies relative to sUAS continue to keep pace with these developments. Accordingly, the City Data Manager shall, prior to deployment of new sUAS technology and at least every three years, examine their existing sUAS policies and procedures relating to the collection, use, retention, and dissemination of information obtained by sUAS, to ensure that privacy, civil rights, and civil liberties are protected. The City shall update their policies and procedures, or issue new policies and procedures, as necessary.

In addition to requiring compliance with the Privacy Act in applicable circumstances, organizations that collect information through sUAS shall ensure that their policies and procedures, with respect to such information, incorporate the requirements described in example provided for in Enclosure (14).

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1 Presidential Memorandum: Promoting Economic Competitiveness While Safeguarding Privacy, Civil Rights, and Civil Liberties in Domestic Use of Unmanned Aircraft Systems, Feb 15, 2015

City of Gaithersburg, Maryland
8. Training

All qualification and training requirements are described in the City Aircrew Training Program document.
9. Maintenance

All maintenance requirements are described in the City Maintenance Program document.
# Enclosure 1 – Risk Assessment

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Likelihood</th>
<th>Consequence</th>
<th>Risk Score①</th>
</tr>
</thead>
<tbody>
<tr>
<td>sUAS impacts ground object</td>
<td>2</td>
<td>2</td>
<td>Low</td>
</tr>
</tbody>
</table>

* Medium and High risk scores require Manager’s Review

Example: sUAS impacts ground object

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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<tbody>
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</tr>
</tbody>
</table>

City of Gaithersburg, Maryland
## Flight Operations Manual for sUAS

### Severity of Consequence vs. Likelihood of Occurrence

<table>
<thead>
<tr>
<th>Severity Level</th>
<th>Definition</th>
<th>Value</th>
<th>Likelihood Level</th>
<th>Definition</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catastrophic</td>
<td>Equipment destroyed, person killed</td>
<td>5</td>
<td>Frequent</td>
<td>Likely to occur many times</td>
<td>5</td>
</tr>
<tr>
<td>Hazardous</td>
<td>Large reduction in safety margins. Serious injury to a person, requires hospitalization. Major equipment damage.</td>
<td>4</td>
<td>Occasional</td>
<td>Likely to occur sometimes</td>
<td>4</td>
</tr>
<tr>
<td>Major</td>
<td>Significant reduction in safety margins. Serious incident, person treated on scene.</td>
<td>3</td>
<td>Remote</td>
<td>Unlikely to occur</td>
<td>3</td>
</tr>
<tr>
<td>Minor</td>
<td>Nuisance. Use of emergency procedures. Minor incident</td>
<td>2</td>
<td>Improbable</td>
<td>Very unlikely to occur</td>
<td>2</td>
</tr>
<tr>
<td>Negligible</td>
<td>Little consequence</td>
<td>1</td>
<td>Extremely Remote</td>
<td>Almost inconceivable that the event will occur</td>
<td>1</td>
</tr>
</tbody>
</table>

### Risk Matrix

<table>
<thead>
<tr>
<th>Severity</th>
<th>Negligible</th>
<th>Minor</th>
<th>Major</th>
<th>Hazardous</th>
<th>Catastrophic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Likelihood</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Frequent</td>
<td><strong>Green</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Occasional</td>
<td>Green</td>
<td><strong>Yellow</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remote</td>
<td>Green</td>
<td>Yellow</td>
<td><strong>Red</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improbable</td>
<td>Green</td>
<td>Yellow</td>
<td>Red</td>
<td><strong>Orange</strong></td>
<td></td>
</tr>
<tr>
<td>Extremely Improbable</td>
<td>Green</td>
<td>Yellow</td>
<td>Red</td>
<td>Orange</td>
<td><strong>Red</strong></td>
</tr>
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</table>

*Unacceptable with Single Point and/or Common Cause Failures*
Enclosure 2 – Mission Assessment

<table>
<thead>
<tr>
<th>sUAS Mission Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requesting organization name and point of contact:</td>
</tr>
<tr>
<td>Is mission on approved list?</td>
</tr>
<tr>
<td>Type of services requested?</td>
</tr>
<tr>
<td>Mission date?</td>
</tr>
<tr>
<td>Mission location (address or lat/long)?</td>
</tr>
<tr>
<td>Mission dimensions?</td>
</tr>
<tr>
<td>Mission duration?</td>
</tr>
<tr>
<td>Does it comply with regulations?</td>
</tr>
<tr>
<td>Does it require permission to access property?</td>
</tr>
<tr>
<td>Is data processing required?</td>
</tr>
<tr>
<td>Will there be media interest?</td>
</tr>
<tr>
<td>MISC:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Approved</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Lead Remote Pilot</td>
<td></td>
</tr>
<tr>
<td>Safety Manager</td>
<td></td>
</tr>
<tr>
<td>Manager</td>
<td>* Optional</td>
</tr>
</tbody>
</table>

City of Gaithersburg, Maryland
## Enclosure 3 – Personnel List

<table>
<thead>
<tr>
<th>Last, First</th>
<th>Position</th>
<th>FAA Remote Pilot Certificate Number</th>
<th>Mobile Number</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>
## Enclosure 4 – Mission Prep Checklist

<table>
<thead>
<tr>
<th>Item</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Batteries</td>
<td>Charge</td>
</tr>
<tr>
<td>2 Controller battery</td>
<td>Charge</td>
</tr>
<tr>
<td>3 Camera battery*</td>
<td>Charge</td>
</tr>
<tr>
<td>4 Memory card</td>
<td>Remove stored data</td>
</tr>
<tr>
<td>5 Verify software</td>
<td>Confirm firmware</td>
</tr>
<tr>
<td>6 Airspace assessment</td>
<td>Consult aeronautical charts and NOTAMs</td>
</tr>
<tr>
<td>7 Terrain assessment</td>
<td>Review terrain and obstacles</td>
</tr>
<tr>
<td>8 Issue NOTAM*</td>
<td>Issue a NOTAM if required</td>
</tr>
<tr>
<td>9 Notification</td>
<td>Local authorities*</td>
</tr>
<tr>
<td></td>
<td>Airport*</td>
</tr>
<tr>
<td>10 Property access</td>
<td>Coordinate permission to enter property</td>
</tr>
<tr>
<td>11 Documents</td>
<td>Verify</td>
</tr>
<tr>
<td>12 Support equipment*</td>
<td>Fire extinguisher, Tables, chairs, chargers, generator, etc.</td>
</tr>
<tr>
<td>12 PPE*</td>
<td>Confirm what, if any, personal protective equipment is needed</td>
</tr>
<tr>
<td>14 Weather</td>
<td>Check forecast</td>
</tr>
<tr>
<td>15 Medical</td>
<td>Locate nearest medical facility</td>
</tr>
<tr>
<td>16 Crewmembers</td>
<td>Confirm crewmembers</td>
</tr>
<tr>
<td>17 Risk Assessment</td>
<td>Complete</td>
</tr>
</tbody>
</table>

* if applicable

## Enclosure 5 – Contact Information

City of Gaithersburg, Maryland
## sUAS Contact Information

<table>
<thead>
<tr>
<th>Role/Organization</th>
<th>Name</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manager</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RPIC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RPIC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RPIC</td>
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<tr>
<td>Public Affairs</td>
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<tr>
<td>Airport Manager</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weather</td>
<td>Flight Service</td>
<td>1-800-992-7433</td>
</tr>
<tr>
<td>NOTAMS</td>
<td>Flight Service</td>
<td>1-800-992-7433</td>
</tr>
<tr>
<td>Dispatch</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospital</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FAA Regional Office</td>
<td>DC, DE, MD, NJ, NY, PA, WV, VA</td>
<td>(404) 305-5150</td>
</tr>
<tr>
<td>FAA FSDO</td>
<td>Baltimore</td>
<td>(410) 787-0040</td>
</tr>
</tbody>
</table>
## Enclosure 6 – Mission Brief

### sUAS Mission Brief

<table>
<thead>
<tr>
<th>General</th>
<th>Intro and big picture*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weather</td>
<td>Review forecast*</td>
</tr>
<tr>
<td></td>
<td>Discuss inclement weather plan</td>
</tr>
<tr>
<td>Mission description</td>
<td>Review goals*</td>
</tr>
<tr>
<td></td>
<td>Provide general description of mission*</td>
</tr>
<tr>
<td></td>
<td>Crew assignments and duties</td>
</tr>
<tr>
<td></td>
<td>Takeoff and landing methods (auto or manual)*</td>
</tr>
<tr>
<td></td>
<td>Sensor use and settings*</td>
</tr>
<tr>
<td></td>
<td>Flight duration*</td>
</tr>
<tr>
<td></td>
<td>Flight area boundaries and obstructions</td>
</tr>
<tr>
<td></td>
<td>Update sUAS status*</td>
</tr>
<tr>
<td></td>
<td>Confirm necessary documents on site</td>
</tr>
<tr>
<td>Safety</td>
<td>Location of fire extinguisher</td>
</tr>
<tr>
<td></td>
<td>Airspace intruder plan</td>
</tr>
<tr>
<td></td>
<td>Maintain sterile cockpit</td>
</tr>
<tr>
<td></td>
<td>Personnel injury and care</td>
</tr>
<tr>
<td></td>
<td>ID nearest hospital</td>
</tr>
<tr>
<td></td>
<td>ID flightline/do not cross areas/danger zones</td>
</tr>
<tr>
<td></td>
<td>No overflight of personnel</td>
</tr>
<tr>
<td></td>
<td>Non-participants remain clear</td>
</tr>
<tr>
<td></td>
<td>Crewmembers are fit for duty</td>
</tr>
<tr>
<td>Hazards</td>
<td>Review Risk Assessment Form (as applicable)</td>
</tr>
<tr>
<td>Emergencies</td>
<td>Immediate landing scenarios</td>
</tr>
<tr>
<td></td>
<td>Fly away</td>
</tr>
<tr>
<td></td>
<td>Lost link</td>
</tr>
<tr>
<td></td>
<td>ID Flight Termination Point (as applicable)</td>
</tr>
<tr>
<td></td>
<td>Loss of Control</td>
</tr>
<tr>
<td></td>
<td>Others</td>
</tr>
<tr>
<td>Communications</td>
<td>Contact ATC</td>
</tr>
<tr>
<td></td>
<td>Confirm NOTAM submitted (if applicable)</td>
</tr>
<tr>
<td></td>
<td>Monitor ATC frequencies (if applicable)</td>
</tr>
<tr>
<td></td>
<td>Contact Manager at start and finish of flight operations</td>
</tr>
</tbody>
</table>

City of Gaithersburg, Maryland
## Enclosure 7 – Preflight Checklist

<table>
<thead>
<tr>
<th></th>
<th>sUAS Preflight Checklist (Supplemental)</th>
<th>Action</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Safety Brief</td>
<td>Complete</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Takeoff/landing area</td>
<td>Delineate and clear of debris</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Airworthiness check</td>
<td>Visually inspect aircraft</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Airworthiness check</td>
<td>Visually inspect control surfaces and linkages</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Airworthiness check</td>
<td>Visually inspect propulsion system</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Avionics</td>
<td>Inspect control link transceiver, com/nav equipment, and antennas</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Airworthiness check</td>
<td>Inspect props for balance, damage, connections, tighten nuts</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Airworthiness check</td>
<td>Check camera/gimbal security, wiring and free from obstructions</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Remote Control</td>
<td>Verify batteries</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Battery</td>
<td>Verify sUAS battery</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Monitor</td>
<td>Verify display panel working properly</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Compass</td>
<td>Calibrate compass, if necessary</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Navigation</td>
<td>Check navigation and telemetry connection</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Airworthiness check</td>
<td>Confirm weight and balance is within manufacturer’s recommendation</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Registration</td>
<td>Registration markings, for proper display and legibility</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Non-participants</td>
<td>Remove from takeoff area</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Camera</td>
<td>Check camera operation</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Failsafe/RTH</td>
<td>Enter max and min parameters</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Ground support equipment</td>
<td>Check proper operation and location</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Data Storage</td>
<td>Confirm data storage installed and functional</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Phone calls</td>
<td>Contact ATC and Manager as necessary</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>All clear check</td>
<td>Check takeoff area, airspace, flight area</td>
<td></td>
</tr>
</tbody>
</table>
Enclosure 8 – Mission Report

### sUAS Mission Report

<table>
<thead>
<tr>
<th>Mission Date</th>
<th>sUAS Model</th>
<th>Mission Name</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Location**

**Weather**

<table>
<thead>
<tr>
<th>Component Info</th>
<th>sUAS Flight Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
<td>Minutes</td>
</tr>
<tr>
<td>Battery #</td>
<td></td>
</tr>
<tr>
<td>Battery #</td>
<td></td>
</tr>
<tr>
<td>Battery #</td>
<td></td>
</tr>
<tr>
<td>Battery #</td>
<td></td>
</tr>
<tr>
<td>Data Storage Device #</td>
<td></td>
</tr>
<tr>
<td>Data Storage Device #</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks**

**Crewmember Flight Time**

<table>
<thead>
<tr>
<th>Last Name</th>
<th>Crew Position</th>
<th>Total Time (8:00)</th>
<th>Takeoffs</th>
<th>Landings</th>
</tr>
</thead>
</table>

**Mission Type (check all that apply)**

<table>
<thead>
<tr>
<th>Mission</th>
<th>Training</th>
<th>Maintenance</th>
<th>Evaluation</th>
<th>Other</th>
</tr>
</thead>
</table>

**List any Malfunctions (if applicable)**

**RPIC Signature**

| Date | |
|------||
**Enclosure 9 – Authorized Missions**

<table>
<thead>
<tr>
<th>Authorized sUAS Missions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>6</td>
</tr>
<tr>
<td>7</td>
</tr>
<tr>
<td>8</td>
</tr>
<tr>
<td>9</td>
</tr>
<tr>
<td>10</td>
</tr>
<tr>
<td>11</td>
</tr>
<tr>
<td>12</td>
</tr>
<tr>
<td>13</td>
</tr>
<tr>
<td>14</td>
</tr>
<tr>
<td>15</td>
</tr>
</tbody>
</table>
Enclosure 10 – Property Access Form (example)

<table>
<thead>
<tr>
<th>sUAS Property Access Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date:</td>
</tr>
<tr>
<td>Location/Address</td>
</tr>
</tbody>
</table>

“RPIC” and Location Owner or Authorized (“Owner”) agree as follows:
Owner agrees that RPIC and persons designated by RPIC may be in, on, or about the above location on the date(s) indicated above, for the purposes of supporting an organizational mission. RPIC shall hold Owner harmless from and indemnify Owner against any damage to the above location caused by any persons designated by RPIC to be on the location or against any injuries occurring to persons designated by RPIC to be on the location.

Owner represents and warrants that Owner has the right to enter into this agreement and that the rights Owner has granted hereunder will not conflict with or violate any commitment, agreement, or understanding Owner has or will have to or with, nor infringe upon any rights of, any person or entity. Owner expressly releases RPIC and RPIC’s employees, officers, agents, assignees, and licensees from all claims, losses, costs, expenses, settlements, demands and liabilities of every kind.

Owner hereby waives any claims they may have in connection with the use of the materials by Operator including without limitation claims for rights of privacy, publicity, defamation, infringement of copyright and trademark infringement. Further, Owner hereby waives any rights to equitable relief in connection with the use of the materials by Operator, his successors, licensees, designees or assigns.

| RPIC Name:  |
|            |
| RPIC Signature: |
| Date: |
| Owner Name: |
| Owner Signature: |
| Date: |
| Phone: |
Enclosure 11 – Use and Privacy Policy

The City shall not use any City sUAS for purposes of law enforcement by police or
neighborhood services, will rigorously respect the privacy of all persons, and will not use the
sUAS in violation of any other City policy, including but not limited to prohibitions on
discrimination and harassment.

City staff shall not use any City sUAS to interfere with any activities protected by the First
Amendment.

City staff shall not use any City sUAS in violation of any Fourth Amendment protection against
unreasonable searches and seizures in which a person has a reasonable expectation of privacy.

City staff shall not use any City sUAS to engage in any discrimination or any other act in
violation of City policy, including but not limited to policies prohibiting discrimination or any
harassment based on race, color, creed, religion, ancestry, sex, sexual orientation, national origin,
affection preference, gender preference, genetic testing, disability, age, marital status or status
with regard to public assistance or as a disabled veteran or veteran of the Vietnam era.

City staff shall only collect, use and dissemination information and data obtain from the use of
City sUAS for authorized purposes which comply with this Use and Privacy Policy as well as all
applicable court orders and local, state and federal laws.
Enclosure 12 – Good Neighbor Policy

This Policy applies in addition to the Use and Privacy Policy, Enclosure (11).

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**sUAS Data Policy (Good Neighbor)**

These voluntary guidelines provide a balance between your rights as a sUAS operator and other people’s rights to privacy. The overarching principle should be peaceful issue resolution.

| If you can, tell other people before taking pictures or video. |
| If you think someone has a reasonable expectation of privacy, don’t violate that privacy by taking pictures, video, or otherwise gathering sensitive data, unless you’ve got a very good reason. |
| Don’t fly over other people’s private property without permission if you can easily avoid their property. |
| Don’t gather personal data for no reason, and don’t keep it for longer than |
| If you keep sensitive data about other people, secure it against loss or theft. |
| If someone asks you to delete personal data about him or her that you’ve gathered, do so, unless you’ve got a good reason not to. |
| If anyone raises privacy, security, or safety concerns with you, try and listen to what they have to say, as long as they’re polite and reasonable. |
| Don’t harass people with your sUAS. |
## Enclosure 13 – Incident Report

<table>
<thead>
<tr>
<th>Item</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide medical treatment/call 911 (if necessary)</td>
<td></td>
</tr>
<tr>
<td>Secure area (if possible)</td>
<td></td>
</tr>
<tr>
<td>Notify your organization and Manager</td>
<td></td>
</tr>
<tr>
<td>Contact FAA within 10 days</td>
<td></td>
</tr>
<tr>
<td>RPIC’s name and contact information</td>
<td></td>
</tr>
<tr>
<td>RPIC’s FAA airman certificate number</td>
<td></td>
</tr>
<tr>
<td>sUAS FAA registration number</td>
<td></td>
</tr>
<tr>
<td>Location of the accident</td>
<td></td>
</tr>
<tr>
<td>Date of the accident</td>
<td></td>
</tr>
<tr>
<td>Time of the accident</td>
<td></td>
</tr>
<tr>
<td>Person(s) injured and extent of injury, if any or known</td>
<td></td>
</tr>
<tr>
<td>Property damaged and extent of damage, if any or known</td>
<td></td>
</tr>
<tr>
<td>Description of what happened</td>
<td></td>
</tr>
<tr>
<td>Weather conditions</td>
<td></td>
</tr>
<tr>
<td>Describe damage to UAS</td>
<td></td>
</tr>
<tr>
<td>Injured person name and contact information</td>
<td></td>
</tr>
<tr>
<td>Owner of damaged property name and number</td>
<td></td>
</tr>
<tr>
<td>Take photo’s of damage</td>
<td></td>
</tr>
<tr>
<td>Save all sUAS electronic information</td>
<td></td>
</tr>
<tr>
<td>Describe sUAS mode</td>
<td></td>
</tr>
<tr>
<td>Describe sUAS speed, altitude, heading</td>
<td></td>
</tr>
<tr>
<td>Witness name and contact information</td>
<td></td>
</tr>
</tbody>
</table>
Enclosure 14 - Data Policy

The City program participants shall adhere to the following guidance during sUAS operations that can, or have the potential to, capture, store, transmit, and/or share data, including audio, video, visual images, or other personally identifiable information which may include the time, date, and geographic location where the data were captured.

- **Digital Media Evidence (DME)** — DME shall be handled in accordance with the City Use and Privacy Policy, Enclosure (11) and existing City policy on data and record retention, where applicable.

- **Disposition of Non-DME** — All digitally recorded imagery (video, or still photography), or other data not required as evidence or for use in an ongoing investigation shall be managed in accordance with City policy. This includes: compliance with state and local records retention schedules; that City personnel may not edit, alter, erase, duplicate, copy, share or otherwise distribute the data, and instances where the data is made available for public inspection.

- **Personally Identifiable Information (PII)** — Any non-DME imagery that contains PII shall not be retained for more than 180 days, or per state or local record retention schedules.

- **Data Minimization and Limitation** — Only those technologies and only those data that are strictly needed to accomplish the specific objectives approved by the City will be deployed, and only for so long as it demonstrates continuing value and alignment with applicable constitutional, legislative, regulatory, judicial, and policy mandates.

- **Security** — City will ensure appropriate security of the technology (including networks and infrastructure) and the data it provides to safeguard against risks of loss, unauthorized access or use, destruction, modification, or unintended or inappropriate disclosure.

- **Auditing and Accountability** — City employees, subcontractors, and volunteers shall be held accountable for complying with organization, state, and federal policies surrounding the deployment and use of the technology and the data it provides. All access to data derived and/or generated from the use of relevant technologies shall be subject to specific authorization and strictly and regularly audited to ensure policy compliance and data integrity.

- **Public Domain** — expressed consent of the person(s) or property owner involved will be necessary when displaying videos or data publically in an outlet such as the City website.