



Starting a Public Safety UAS Program

Creating a Public Safety Drone Program is a complex undertaking, but the benefits are well worth it. Based on our experience with successful programs, we offer the following to assist in building your own public safety program.

1. Know what you are getting into. Creating a UAS program requires governance, policies and procedures, defined missions, selection of unmanned aircraft and payloads, training/proficiency, data management, maintenance, and thorough documentation of training and flights.
2. Understand the cost implications for the unmanned aircraft system, extra batteries, various sensors, data storage, software applications, video streaming, training and operational overtime costs.
3. Your agency's remote pilots should be [Federal Aviation Administration \(FAA\) 14 CFR Part 107 certified](#) which requires passing a written knowledge test and \$150 fee for each remote pilot every 2 years.
4. As a public agency, it is recommended to obtain an [FAA Certificate of Authorization \(COA\)](#) which provides additional operational flight options. The combination of Part 107 and COA offer the most versatile options for flight.
5. As a remote pilot, there is a great responsibility as each is considered an aviation pilot as they are flying in the National Airspace (NAS) and potentially flying among other UAS and/or manned aircraft.
6. When considering a program, understand the airspace in the respective public safety UAS operational area. Areas that include military bases, commercial airports, national parks and other restricted airspace require additional planning and potentially waivers.
7. Mature public safety UAS programs have generally learned:
 1. They fly more missions than they ever expected.
 2. They fly many more types of missions than originally planned.
 3. Most agencies start out small with one aircraft to learn.
 4. If they had known what they know now, they would have purchased a different UAS with different payloads. One of the most common combinations is a regular camera and an infrared camera (HD digital images and video).

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If your desire is to implement an agency public safety UAS program, DroneUp offers the following tips:

- Engage your jurisdiction's administration and elected officials from the start. Be transparent, with elected officials and the public.
- Provide success stories from other localities (there are plenty), learn from and share them with officials and the public.
- Plan to use the UAS for multiple mission types (define them early on). Identify mission types from the beginning and learn from other agencies experiences.
- Purchase UAS that will be able to meet your defined mission requirements. Consider one or two smaller/less expensive UAS to learn on and to use in precarious situations where the UAS may be contaminated.
- In Public Safety, there is the 2 = 1 UAS rule, as you must always be prepared should one fail or another is needed to maintain flight overwatch.
- Once UAS is purchased, you will need to identify if the UAS has programmed geofencing. If so, you can work with the manufacturer to have it removed. Most will remove for one year periods and require renewal.
- Where possible, create a multidiscipline public safety UAS team. This brings disciplines together and shares the burden of cost and staffing resources.
- Where possible, create a regional team from multiple jurisdictions.
- Develop a clear policy as to when UAS will be used for law enforcement surveillance and evidentiary purposes.
- Use search warrants as required.
- Provide safeguards within policy to ensure privacy.
- Develop and explain the data streaming/recording and retention policy (just as police do with body-worn cameras).
- Develop and explain the training and skills proficiency plan and safety protocols.
- Now that UAS is being used by your agency, it is imperative to address this as an air operation and must be incorporated into the Incident Command System (ICS) to ensure airspace deconfliction from other UAS and manned aircraft (medical helicopter, wildland firefighting aircraft, news media, etc.). [DroneUp also offers an unmanned traffic management \(UTM\) solution that could be used to coordinate airspace.](#)
- Identify liability issues and implement appropriate insurance.
- Consider involving the local American Civil Liberties Union (ACLU) affiliate in the review of department UAS policies.

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- Hobbyist and recreational remote pilots should NOT be used in public safety missions as they are not allowed to do so by FAA Rules and regulations.
- Utilize Public Safety UAS Standards & Information:
 1. Public Safety Aviation Accreditation Commission UAS Standards as a reference which can be accessed by visiting www.publicsafetyaviation.org.
 2. National Fire Protection Association Public Safety UAS Standards (will be available in 2019 – www.nfpa.org/2400)
 3. ASTM Operational Standards for Small UAS - <https://www.astm.org/standardization-news/?q=update/operations-standards-for-small-unmanned-aircraft-systems-mj14.html>
 4. For various examples of Public Safety UAS policies and procedures, visit the National Council on Public Safety UAS – www.publicsafetyUAS.org

You may also consider a UAS service that may be able to meet your needs and/or if your agency requires additional technology and resources. DroneUp's project managers can work with your staff to assist with building a comprehensive UAV program. Call us at (877) 601-1860 to discuss options.



Charles L. Werner, a national leader in public safety, serves as the DroneUp's Chief of Public Safety. In this position, Werner is responsible for ensuring unmanned aerial systems (UAS) public safety is upheld in DroneUp initiatives, including pilot training and certifications, strategic partnerships and best practices. Werner served 37 years in the City of Charlottesville, Va., Fire Department, where he retired as Fire Chief. Among his notable accomplishments while in office, the Department achieved a Class 1 ISO Fire Protection Rating, considered the highest rating for a department. He is a sought-after subject matter expert on FirstNet, communications, interoperability, geographic information systems (GIS), homeland security technology and UAS. With over 100 nationally published articles, he is a contributing editor for Firehouse magazine and contributes regularly to Urgent Communications magazine, sUAS News, Fire Rescue 1 and Domestic Preparedness magazine. Contact Charles at charles.werner@droneup.com.

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