

VILLAGE OF LOMBARD POLICE DEPARTMENT



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Chief of Police

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TO: Chief Newton #83
FROM: Deputy Chief Grage #754
DATE: 08/11/2021
SUBJECT: Police Department Small Unmanned Aircraft Systems "Drone" Proposal

Chief,

As you are aware the use of Small Unmanned Aircraft Systems (sUAS) colloquially known as "drones" is slowly but surely becoming an industry standard among law enforcement agencies. The purchase of sUAS and operation of them historically has been cost prohibitive and unclear when it comes to federal aviation laws and state laws. Fortunately, the cost of sUAS have reduced significantly and federal aviation and state laws have been implemented. These laws now provide clear guidance on the operation of sUAS by law enforcement agencies in Illinois. The use of sUAS by law enforcement has shown operational clear benefits that will be outlined in this document. I am proposing that the Lombard Police Department begin a sUAS program.

FEDERAL AVIATION AUTHORITY AND FEDERAL LAW

The use of sUAS is governed by federal law under 14 CFR Part 107. This section of law requires that sUAS being operated for law enforcement purposes be registered with the Federal Aviation Authority (FAA). The cost for this registration is \$5 and the registration is valid for three (3) years. 14 CFR Part 107 also requires that any person operating the

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drone for law enforcement purposes be a FAA certified sUAS pilot. The certification test costs approximately \$160 plus the cost of Part 107 training. The training can be completed online. The costs for this training vary with them being as little as \$100 on the lower end. Once certified, sUAS pilots must have their certificate available when operating the sUAS. The certificate must be renewed every 24 months.

ILLINOIS STATE LAW: “FREEDOM FROM DRONE SURVEILLANCE ACT”

The “Freedom from Drone Surveillance Act” (725 ILCS 167) regulates the use of sUAS by law enforcement in Illinois. This law seeks to protect the privacy of the public while allowing law enforcement use of sUAS under certain circumstances. Per the Act, sUAS being operated for law enforcement may only be used under the following circumstances:

1. To counter a high risk of terrorist attack by a specific individual or organization if the United States Secretary of Homeland Security determines that credible intelligence indicates that there is risk.
2. If a law enforcement agency first obtains a search warrant based on probable cause issued under Section 108-3 of the Code of Criminal Procedure of 1963. The warrant must be limited to a period of 45 days, renewable by the judge upon a showing of good cause for subsequent periods of 45 days.
3. If a law enforcement agency possesses reasonable suspicion that, under particular circumstances, swift action is needed to prevent imminent harm to life, to forestall the imminent escape of a suspect, or the destruction of evidence. The use of a drone for this purpose is limited to 48 hours with a requirement that the chief executive officer of the law enforcement agency report the use of the sUAS to the local State’s Attorney in writing within 24 hours.
4. If a law enforcement agency is attempting to locate a missing person, and is not also undertaking a criminal investigation.
5. If a law enforcement agency is using a sUAS solely for crime scene and traffic crash scene photography. Use under this section must be time limited and geographically confined. A search warrant or lawful consent is required if the sUAS is being operated on private property.

6. If a law enforcement agency is using a sUAS during a disaster or public health emergency to monitor weather or emergency conditions, survey damage, or to coordinate response and recovery efforts.

Use of sUAS by law enforcement agencies for purposes other than those outlined in the Act are prohibited. Information obtained by sUAS under the permissible uses must be destroyed within 30 days unless there is a reasonable suspicion that the information contains evidence of criminal activity or the information is relevant to an ongoing investigation or pending criminal trial.

Law enforcement agencies in Illinois that operate sUAS must report their use in writing annually to the Illinois Criminal Justice Information Authority. Law enforcement agencies are prohibited from acquiring or directing the acquisition of information from sUAS owned by a private party.

sUAS Applications for the Lombard Police Department

Based on the above, our department could benefit from the use of sUAS under the following circumstances and examples:

1. Missing Person Searches
 - a. Great for quickly searching large areas
 - b. Enhanced application with thermal imaging at nighttime
 - c. Able to more thoroughly check areas officers are not able to physically get to
2. Natural Disasters or Public Health Emergencies
 - a. Search for victims
 - b. Damage assessments
 - c. Coordinate response and recovery efforts
3. Crime Scene Photography
 - a. Video and still images of crime scenes that may cover larger areas
 - b. Images that cover a wider view than a 35 mm DSLR camera can take
4. Active shooters/Critical Incidents
 - a. Provide bird's eye view of incident to enable police to gain a quick understanding of the scope of the incident
 - b. Help provide the location of a shooter
 - c. Identifying escape routes for victims
 - d. Prevent escape of subject
 - e. Real time information provided to command staff
 - f. Live video of incident at command post via remote control or other screen.

5. Search Warrants(typically needs to be documented in search warrant)
 - a. Overview of house
 - b . Chase runners
 - c. Light up house
 - d. Searches of large areas

6. Forestall the escape of a subject(must notify SAO after use)
 - a. Suspects bailing from vehicles
 - b. Suspects fleeing on foot from scene of a robbery or shooting
 - c. Burglaries in progress

7. Prevent the destruction of evidence(must notify SAO after use)
 - a. Scene security of large scenes
 - b. Searching for weapons/contraband/evidence known to have been thrown

8. Prevent imminent harm to life(must notify SAO after use)
 - a. Hostage situations
 - b. Barricaded subjects
 - c. Active shooters

9. Crash Investigation
 - a. Overhead videos and still images
 - b. Images that cover a wider view than a 35 mm DSLR camera can take
 - c. Crash mapping and diagramming
 - d. On scene plotting that would normally take 4 hours, only takes 20 to 30 minutes. Officer diagram build time is also substantially reduced.
 - e. Significantly reduces the inconvenience to the motoring public as roads are closed for substantially less time

10. Bomb Inspections
 - a. Aerial drones can serve the same purpose as a ground-based robot commonly used to investigate suspicious packages
 - b. Provide initial assessment of situation

As you can see, the practical applications for law enforcement use are wide ranging and represent clear benefits.

sUAS Applications for the Village of Lombard

In addition to law enforcement use, the sUAS could be used to assist other Village of Lombard departments in a variety of non-law enforcement capacities. After consulting with other village departments, a police department sUAS would be able to assist other village departments in the following ways:

1. Special Events: Record video and/or photos of special events such as the Lilac parade and Cruise Nights for promotional purposes.
2. Marketing and Promotion: Record video and/or photos of the Village to promote tourism and development.
3. Construction Supervision/Management: Record video and/or photos of ongoing village construction projects.
4. Community Development: Record video and/or photos of ongoing or prospective of development areas or zoning issues within the Village.

EQUIPMENT

I have conducted research on what sUAS would work best for our agency. This research was based on technical data as well as anecdotal information from other law enforcement agencies' sUAS programs. Based on this research, I am proposing that we purchase a DJI Matrice 300 RTK with Zenmuse H20T camera. This sUAS is the latest version of the Matrice drone used by other area agencies. This sUAS is a commercial grade drone produced by DJI, a well-known sUAS manufacturer. Here are some quick facts/features of the Matrice 300 RTK equipped with the Zenmuse H20T camera.

- Maximum flight time: 55 minutes
- Maximum range from controller: 9.3 miles
- Self-heating intelligent batteries
- Automated collision avoidance/obstacle identification system
- Operating temperatures from -4F to 122F
- Automated hovering and landing
- The camera has a 200x zoom capability and thermal imaging.

A technical brochure for the Matrice 300 RTK is attached.

My research also found that many agencies have a second smaller sUAS as part of their sUAS programs. These sUAS are usually used for practice flight training as well as applications in large buildings such as warehouses or schools. An example of this use might be locating an active shooter within a warehouse with the sUAS in order to provide fast aid to injured people and address the threat effectively. For this sUAS I am proposing the purchase of a DJI Mini 2 sUAS. This sUAS is much smaller than the

Matrice 300 RTK and is housed in a bag the size of a standard DSLR camera bag. It has a flight time of 31 minutes and is equipped with a 12 MP camera that has a 4x maximum zoom.

Both sUAS come with one year of insurance that will cover 90% of the replacement or replacement cost for two crashes or instances of damage.

PRICING

I obtained three quotes for the above listed equipment (all quotes attached)

- DJI: \$29,525.00
- DRONENERDS: \$29,433.00
- Aerial Influence LLC: \$29,433.00

Aerial Influence LLC indicated that they provide free training on both sUAS as part of any purchase. In addition to this, they were the only Illinois-based business (Elburn) out of the three quotes. Based these facts along with their quote being tied for the lowest price I propose we purchased both sUAS from Aerial Influence LLC.

There are no additional annual software maintenance costs for the sUAV from any of the vendors.

FUNDING

The clear operational benefits of law enforcement use of sUAS give this purchase urgency. Because this purchase was not a budgeted item for FY 21, I propose that the purchase be made using 50% funding from the Federal Asset Seizure account funds and 50% funding from the DUI Technology account. Both of these accounts are restricted use for law enforcement purposes only. Both accounts can easily fund this purchase at this time.