



INFORMATIONAL MEMORANDUM

TO: Public Safety Committee

FROM: Mike Villa, Chief of Police

BY: Bruce Linton, Deputy Chief of Police

CC: Mayor Ekberg

DATE: September 18, 2017

SUBJECT: The Tukwila Police Unmanned Aircraft Systems Program Update

ISSUE

The Tukwila Police Department wishes to update the Public Safety Committee as to its progress on the implementation of the Unmanned Aircraft Systems (UAS) program.

BACKGROUND

The Tukwila Police Department implemented a UAS pilot program to validate whether this technology can enhance the department's ability to save lives, protect property and document crime and collision scenes. The Department briefed that it would report back to committee in six months' time with information on the pilot program.

RECOMMENDATION

The police department will conduct the final update to the committee regarding the pilot program by the end of December 2017.

ATTACHMENTS

UAS Information Update (Article)

Tukwila Police Department Unmanned Aircraft Systems—Leveraging Technology To Better Serve Our Citizens

On May 12, 2017, The Tukwila Police Department Unmanned Aircraft System (UAS) Team consisting of eight highly skilled Police Officers, completed the UAS Training program and was given the go ahead to conduct operations based on a proposed pilot program. This article highlights the Tukwila Police Department UAS Program, focusing on deployment strategies and the benefits of UAS for public safety. In addition, it will address privacy concerns associated with the use of UAS, and our actions to mitigate those concerns. Finally, we will share some of our deployment successes to date.



The intent of the Tukwila Police Department (TPD) is to deploy UAS resources to enhance the department's ability to save lives, protect property and infrastructure and document crime and collision scenes. To accomplish this, the department UAS remote pilots have trained and studied hard while always keeping in mind the need to protect the public's reasonable expectation of privacy. The department's UAS Remote Pilots will also seek proper authorization as established by department UAS policy and adhere to Federal Aviation Administration (FAA) regulations for UAS flight within the national airspace system.

Over the last several years, the department has been monitoring the advances in UAS technology while awaiting the FAA regulations for integration of commercial and public use of UAS in the national airspace. Once the FAA Part 107 rules governing commercial and public use went in effect, The Tukwila Police Department began the detailed research necessary to support its request for permission from the Tukwila City leadership to implement a UAS pilot program.

The formal request process began communicating the benefits of UAS to the City Council and community groups in an effort to gain both community support and City Council approval. Communicating the benefits was the easy part of the process as there have been multiple examples nationwide of successful public safety UAS operations in the following areas:



- Enhanced search and rescue operations
- Crime scene reconstruction (3D mapping)
- Timely accident scene reconstruction (3D mapping)
- Improved officer safety by providing an aerial perspective for better situational awareness during responses to critical incidences
- Conducting critical infrastructure and damage assessments during disaster response

“We cleared the roadway in a fraction of the time it would take to map the scene solely by traditional methods”

Due to privacy concerns involving the use of UAS by public safety organizations, we solicited tactics, techniques, and procedures for deployment strategies from organizations who have a vested interest in the proper use and success of UAS in public safety. The department adopted several recommendations by and identified proven strategies for success from organizations such as:

- The Department of Justice – COPS Office
- The International Association of Chiefs of Police model policy and employment strategies
- FAA strategies for the employment of public safety UAS
- The American Civil Liberties Union (ACLU) for recommendations based on privacy concerns
- The Washington State Office of Privacy Protections for recommendations based on concerns voiced by legislative bodies and the constituents they represent

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Based on the information gathered, the department set out to develop a policy and operations manual. The policy and manual addressed the above mentioned concerns and incorporating specific language regarding authorizations for use, supervision and reporting, retention and management of data, restrictions for using UAS and training.

The second part of our strategy for implementing UAS involved communicating our intent as widely as possible in the community. We began with the City Council and then went to citizen groups such as the Community Oriented Policing Citizen Advisory Board and the Tukwila International Boulevard Advisory Committee. This gave us an opportunity to share our information and report directly to our citizens the benefits of UAS technology, and how we plan to use it responsibly. Our elected leaders had many tough questions related to privacy issues and our intended use. Referring to our proposed policy and operating procedures, we were able to address their concerns.

With authorization to proceed with the pilot program, we did not waste time. Over the next several months, the selected officers/crewmembers studied for their FAA Remote Pilot Certificate examinations. This was not an easy task. All future aircrew member candidates received a first-time go on their FAA exams and were awarded their FAA Part 107 UAS Remote Pilot Certificate. This is a requirement to pilot UAS within the national airspace for commercial and public use.

Attaining the certificate was just the first step in the education process. The next step was a 40-hour course of instruction focused on additional academics and hands-on flight training with the department-provided DJI Mavic Pro and Inspire 2 UAS. The academics covered the TPD's UAS policy and operations manual, UAS equipment overview, data management solutions, aircraft and battery maintenance along with hands-on flight training which involved pre-flight procedures, maneuvering flight, mission planning, scenarios and safety and standardization considerations.

At the completion of our training and certification, the team was ready. Unfortunately, it did not take long to get the opportunity to demonstrate the benefits of the use of this new tool in law enforcement.



On May 25, 2017, our SWAT supervisor and UAS pilot assisted Valley SWAT in conducting a high-risk search warrant. This was TPD's first operational UAS mission. The warrant service was of substantial risk due to the target residence being potentially occupied by gang members who were involved in a series of drive-by shootings that have plagued Seattle and the south Puget Sound area. The back of the target residence, located on very steep slope, was covered with thick vegetation that made access and containment difficult. This was a

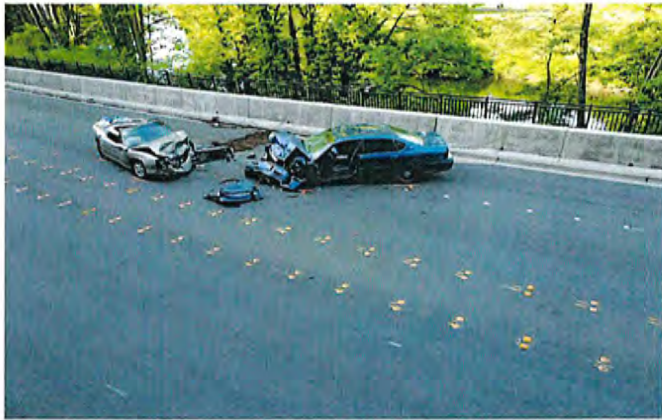
perfect scenario to deploy the UAS to maintain an aerial perspective and help ensure officer safety. During the flight, the UAS kept watch on the rear of the residence while other perimeter units maintained a physical presence to prevent escape as the SWAT team made entry.

As a result of the warrant service, we recovered weapons and information. This led to follow-up warrants and arrests of multiple individuals responsible for two Tukwila drive-by shootings and up to four additional shootings in the greater Seattle and surrounding area.

In early June, our UAS team was requested to map two of the grimmest accident scenes we have responded to in a while. The first was a T-bone accident at West Valley Highway and Strander Boulevard, which resulted in a driver being transported to Harborview Medical Center in critical condition. The 3D mapping capability of the UAS and associated programs allowed us to clear the roadway in a fraction of the time that traditional mapping and reconstruction methods would allow.

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The second accident was on June 7th, the team mapped a head-on collision in the 15200 block of Interurban Ave S. This was a vehicular assault case where an intoxicated individual crossed the centerline and collided head on with another vehicle. This resulted in another person being transported to Harbor View Medical Center in critical condition. Again, the use of UAS technology and 3D mapping software proved its worth. The scene was mapped in record time and the roadway was opened much earlier for the commute and the facilitation of commerce.



The use of UAS by the Tukwila Police Department has proven its worth during the first month of operations. As we move forward with more training and incident responses, UAS technology will become an even more valuable tool for the department. We enjoy sharing the results of using this technology with you and will continue to do so on our social media outlets as the opportunities arise.

“The use of UAS by the Tukwila Police Department has proven its worth”



Please direct any questions or inquiries to Deputy Chief Bruce Linton at b.linton@tukwilawa.gov regarding Tukwila Police Department UAS technology.