



Administrative Report

H.17., File # 24-0137

Meeting Date: 3/5/2024

To: MAYOR AND CITY COUNCIL
From: JOSEPH HOFFMAN, CHIEF OF POLICE

TITLE

APPROVE AN AGREEMENT WITH AERODOME, INC. FOR UNMANNED AERIAL SUPPORT SERVICES FOR A TOTAL AMOUNT NOT TO EXCEED \$104,172 AND THE TERM MARCH 5, 2024 TO JUNE 30, 2024

APPROVE A REVOCABLE LICENSE AGREEMENT AND EQUIPMENT OWNERS CONSENT WITH BEACH CITIES HEALTH DISTRICT FOR THE USE OF THEIR FACILITIES FOR UNMANNED AERIAL SUPPORT OPERATIONS FOR THE TERM MARCH 5, 2024 TO MARCH 5, 2025 WITH AN OPTION TO RENEW FOR TWO ADDITIONAL ONE-YEAR PERIODS

EXECUTIVE SUMMARY

The Police Department plans to upgrade existing Unmanned Aerial Support (UAS) capabilities utilizing drones. The existing Agreement with Flying Lion, Inc. (Flying Lion) expired on February 14, 2024 and the Police Department (Department) seeks to enter into an Agreement with Aerodome, Inc. (Aerodome) to become the City's UAS provider.

The Aerodome UAS system utilizes advanced technology to respond to calls for service from a centralized City location while being operated from a console within the Police Department Communications center. The program has been successful in enhancing safety and service to the community by reducing response times to emergency calls and delivering valuable data to first responders dispatched to calls. With approval of the Revokable License Agreement, the program will be allowed to use the rooftop of the Beach Cities Health District property to base, launch, and monitor drone activity.

BACKGROUND

The Redondo Beach Police Department began using UAS for law enforcement purposes in April of 2017. The original Agreement with Flying Lion provided for 20-hours of callout service per month. Several members of the Police Department were trained and certified by the Federal Aviation Administration (FAA) to operate UAS equipment during nighttime hours and in populated areas, pursuant to Part 107 of the Code of Federal Regulations. These personnel operate as Remote Pilots in Command (RPIC) and are responsible for navigating the aircraft and camera during flight missions. During the term of the original agreement, members of the Police Department became significantly more proficient in the use of UAS's and the volume of monthly callout hours for Flying Lion's services decreased.

In April of 2019, the City Council approved a modified agreement with Flying Lion for a two-year term. The updated Agreement decreased the service to 15-hours of callout service per month, provided for the recertification of 10 RPIC's, and facilitated the lease of 2 UAS vehicles for 24/7 use. As a result of advancements in UAS technology, and the arrival of the COVID-19 pandemic, an internal evaluation was conducted to determine if UAS could provide a more efficient and safer way to provide law enforcement services.

This evaluation process led to the discovery of the Chula Vista, California Police Department's (CVPD) Drone as a First Responder (DFR) program which began in 2018. CVPD deploys UAS's to calls for service and provided an extensive case study of how to best integrate UAS technology in police operations. The CVPD management team described the program as a transformational method of policing that demonstrated a tangible ability to increase both officer and community safety through enhanced situational awareness, while also reducing police response times. The CVPD DFR program utilizes RPICs operating the UAS from a building rooftop, while trained Teleoperators manipulated the UAS and communicated critical intelligence to people on the ground via two-way radio.

On April 14, 2020, the Redondo Beach Police Department began a 4-week DFR pilot program to evaluate the value of an expanded UAS program. Consistent with the CVPD model, the pilot program sent UAS's directly to calls for service, providing rapid air support for officers in the field. These UAS's were generally utilized in the same manner as law enforcement helicopters, however, they were utilized at a much higher frequency and at a much lower cost than helicopter deployment. It should be noted that the UAS only responded to active calls-for-service and were at no time utilized for general surveillance or proactive enforcement efforts. The program was a measurable success, resulting in both an increase in situational awareness, as well as a quantifiable increase in efficiency for checking and clearing calls. During the four-week period, the equipment aided or resulted in the detention of 22 suspects by patrol personnel, and the arrest of a robbery suspect that had fled in a vehicle. Outside of the pilot period, the Department's UAS program has provided ongoing value by aiding in the capture of criminal suspects and by providing an enhanced level of awareness during special events like the regular 5K and 10K runs and other large-scale events, such as the BeachLife concert series.

The DFR program was not implemented in isolation. The Police Department actively requested feedback from the community regarding the DFR program. The program was also presented to the Public Safety Commission and is featured on the Police Department's website. Additionally, community members were encouraged to provide feedback at events where the Department's UASs were deployed to demonstrate its capabilities and familiarize the public with the DFR program. Since the DFR program was launched, UAS have safely responded to more than 5,708 calls for service in the City of Redondo Beach without incident.

The track record of success for the DFR program inspired the Department to seek out ways to further leverage UAS Technology. Aerodome's UAS technology platform replaces the need for a person to physically staff the RPIC position and utilizes a robotic docking station to change batteries and a proprietary air traffic control radar system that monitors other air traffic to keep City UAS vehicles out of active flight paths. This technology will allow the Police Department to launch drones 24/7 in response to 911 calls with enhanced response speed, longer flight times, and enhanced night vision camera capabilities. In addition, the elimination of a crewed RPIC simplifies staffing and reduces the total cost per flight by utilizing a single Teleoperator in the dispatch center, rather than a two-person

team. Officers will also have the ability to launch drones using mobile applications, expanding usage beyond the confines of the dispatch center.

The integration of augmented reality and laser rangefinders on the drones will allow operators to quickly locate incidents and suspects by providing information like addresses in the display overlay. Additionally, Aerodome's system facilitates immediate sharing of streaming video and real-time images with both Department and non-law enforcement personnel without the need for external registration or application downloads.

The computer aided dispatched (CAD) integration feature significantly reduces response times by populating 911 call information directly into Aerodome, enabling quick launch commands that reduce the human component of call response. The system will deliver enhanced video streaming quality (1080p vs. 480p) across various devices and provide automatically generated flight mission reports to ensure compliance with FAA and Police policy. The system will also improve operational efficiency by providing greater volume and quality of detailed information.

To promote transparency and accountability, all flight data will be accessible on a public portal, informing community members about daily drone activities and their purposes. Finally, Aerodome's unique "air traffic" system allows for safer drone operations without a visual observer within a 3.5-mile radius of the drone station, effectively eliminating the risk of collisions with other aircraft, a concern associated with traditional systems relying on human RPIC visual observers.

Aerodome UAS flights began responding to calls for service on November 9, 2023 and operated until January 1, 2024. The pilot program consisted of 10-hour shifts on Tuesdays, Wednesdays, and Thursdays responding from the same rooftop location as the Flying Lion service that operated on Fridays, Saturdays, and Sundays. During this period, the following observations were made regarding the system:

- Aerodome DFR was the first police resource at the scene 95% of the time, which is a 12.7% improvement from the previous system.
- Aerodome DFR had an average response time of 1 minute and 25 seconds, which is a 32.2% improvement from the previous system (2 minutes and 6 seconds). This is primarily because Aerodome drones are flying at 52-mph vs 33-mph (previous platform).
- Aerodome DFR had a high-definition video stream connected 99.8% of the time versus the previous system's 28% high-definition connectivity.
- Aerodome DFR had 0% of flights dropped due to control connectivity issues, versus 2.8% with the previous system.
- Aerodome DFR missions resulted in 28.5% of calls cleared without patrol resources, which marked a 66.7% improvement.
- Aerodome DFR flights resulted in suspects being located by the drone during 25% of missions, which is an 89.4% improvement from the previous system.

While the ability to respond to calls and aid in the capture of suspects is impressive, the use of the system for other circumstances also provides value. A clear example was the arrest of students with loaded firearms on two consecutive days at Redondo Union High School, during the pilot program, in December of 2024. The system was able to check the campus for other potential suspects and provide police leadership with real-time information regarding large crowds of concerned parents that gathered to remove their children from the campus. Instead of sending multiple uniform police

officers to the gates where this was occurring, the drone feed allowed police supervisors to keep officers focused on other safety activities, and avoid a potential inflammation of the already tense emotional circumstances involved in the event. This example demonstrates the ability of emerging technology to deliver new opportunities for service improvements that were not previously recognized.

Based on the enhanced capabilities provided by the platform, the Police Department is requesting approval of an agreement with Aerodome Inc., for unmanned aerial support services for a total not to exceed amount of \$104,172 and the term March 5, 2024 to June 30, 2024 and a revocable license agreement with Beach Cities Health District with a term of March 5, 2024 to March 5, 2025 with the option to extend the Agreement for two additional, one-year periods.

COORDINATION

The Police Department coordinated this report with the City Attorney's Office and the City's Risk Manager.

FISCAL IMPACT

There is no General Fund impact associated with a transition from Flying Lion to Aerodome. Funding for the UAS program is available in the Police Department's FY 2023-24 operating budget utilizing General Fund (\$59,680) and Supplemental Law Enforcement Services Fund (SLESF \$44,312) annual appropriations. The cost of the License Agreement with Beach Cities Health District is included in the Aerodome Agreement.

APPROVED BY:

Mike Witzansky, City Manager

ATTACHMENTS

- Agmt - Aerodome Inc.
- Insurance - Aerodome Inc.
- Agmt- Beach Cities Health District