



## REPORT

**REPORT TO:** Mayor Bonnette and Members of Council

**REPORT FROM:** Bryce Marshall, Deputy Chief  
Halton Hills Fire Department

**DATE:** October 28, 2019

**REPORT NO.:** FIRE-2019-0003

**RE:** Remotely Piloted Aircraft Systems (Drone) Procurement –  
Award of Single-Source Contract

### RECOMMENDATION:

THAT Report No. Rpt-FIRE-2019-0003 dated October 28, 2019 regarding the Remotely Piloted Aircraft Systems (Drone) Procurement- Award of Single-Source Contract, be received;

AND FURTHER THAT the Manager of Purchasing be authorized to issue a single source purchase order to Gap Wireless, 8&9 – 2880 Argentia Road, Mississauga ON L5N 7X8, to an upset limit of \$55,103.00 plus HST;

AND FURTHER THAT staff be directed to transfer \$22,072.81 from the Equipment Reserve to fund the shortfall for the drone.

### BACKGROUND:

The Halton Hills Fire Department (HHFD) responds to many different types of emergencies including, but not limited to, auto collision extrication, structural firefighting, collapse search and extrication, confined space extrication, ice/water rescues, high angle rope rescue and hazardous materials incidents. As described in the 2014 Fire Master Plan, the HHFD has always embraced the use of modern equipment and technology as it relates to life safety. By monitoring best practices in the fire service as well as other emergency service agencies, the HHFD can consider new approaches that promote the proactive delivery of life support services.

In recent years, a particular category of technology has emerged to provide exceptional advantages in the realm of life safety. Remotely Piloted Aircraft Systems (RPAS), often referred to as “drones” have been recognized for their distinct abilities to locate lost victims, provide thermal imagery and provide a birds-eye view of emergency scenes.

In March 2019, the Town of Halton Hills, more specifically the hamlet of Glen Williams, was faced with a series of flooding events due to an ice jam on the Credit River. After many weeks of manually monitoring the banks of the river, the nearby bridges and overpasses, emergency services staff and specialists from Credit Valley Conservation could not effectively determine the exact location of the ice jam. Understanding that there was the potential risk of further flooding, additional damage to nearby homes and infrastructure and an impending increase in ambient temperatures, steps needed to be taken to mitigate this risk. It was determined that Brampton Fire and Emergency Services (BFES) could provide the services of their “Drone Team” to map and survey the Credit River from above. After a few flights with their drone, multiple videos and pictures were captured that identified the location and source of the ice jam. In a matter of hours, a determination was made through the use of this technology that was unable to be done through weeks of manual attempts.

## **COMMENTS:**

The purpose of this report is to seek Council’s authorization for a single-source contract to Gap Wireless for the procurement of a DJI Matrice 210 V2 drone for the Halton Hills Fire Department.

The Fire Department currently has one certified advanced RPAS pilot and DJI training drone in preparation for the development of the HHFD’s drone program. As the program develops over the coming years, more pilots will be added, maintenance cycles will be allocated, and the capabilities will be enhanced.

During the ice jam emergency in March of 2019, the information captured by the BFES drone was used to monitor ice and river flows and evaluate risks to the community if we used explosives. While the drone was in use, it was able to capture pictures and video of almost the entire activity but weather conditions and battery capacity posed challenges requiring the drone to return back home for fresh batteries and then be re-launched. This caused gaps in the footage that could have been prevented if the drone were capable of sustaining continuous flight.

In 2017, Council approved the purchase of a drone through the capital budget and additional funding was approved in 2018. As technology quickly changed in the RPAS industry, it was determined that it would be premature to purchase an inferior unit with the limited funds that were currently allocated.

After recent discussions with a specialized team from the Ontario Fire Marshal’s Office (OFM), it was learned that the OFM uses a NTP Powerline Tether with their Matrice units to sustain flight capabilities for extended periods of time without the requirement of battery changes. It was also learned that a new update to the DJI Matrice technology includes heated batteries which perform better in cold temperatures. Recognizing this, HHFD would be remiss to exclude this technology from the purchase of a drone intended for life safety applications.

Members of the Fire Department’s administrative team and the Purchasing Manager have investigated and determined that Gap Wireless is the exclusive partner for NTP in Canada and their Powerline Tether product is not available through any other dealers.

Distribution agreements have been provided to confirm this information. The Matrice drone is available through other firms.

#### **RELATIONSHIP TO STRATEGIC PLAN:**

The contents of this report support the Strategic Direction under H; “Provide Sustainable Infrastructure and Services – Goal – to maintain and enhance community infrastructure and services that support our quality of life” and, Strategic Objective H 3; “To maintain adequate fire and emergency management services”.

#### **FINANCIAL IMPACT:**

The upset limit of the drone is \$56,072.81 (\$55,103 plus the non-refundable HST portion). Staff is recommending that the drone be funded from three sources as follows: the remaining \$19,000 capital budget in the drone project account; \$15,000 from a private donation that has already been gifted to the Town for this purpose from Jason and Jane Brass of the Terra Cotta Cookie Company and up to a maximum of \$22,072.81 from the Equipment Reserve.

#### **CONSULTATION:**

Fire Department administrative staff has consulted with multiple emergency services agencies, RPAS experts, NAV Canada, retailers throughout the province of Ontario and DJI sales, maintenance and development teams. Internally there has been consultation with the Purchasing Department and the Treasurer.

#### **PUBLIC ENGAGEMENT:**

There are no public engagement implications

#### **SUSTAINABILITY IMPLICATIONS:**

The Town is committed to implementing our Community Sustainability Strategy, Imagine Halton Hills. Doing so will lead to a higher quality of life.

The recommendation outlined in this report, is not applicable to the Strategy’s implementation.

#### **COMMUNICATIONS:**

Purchasing staff will advise Gap Wireless of the purchase order subsequent to Council’s approval of this report.

## **CONCLUSION:**

When placed in service, this unit will be utilized at emergency incidents such as fires and search and rescue situations, as well as occurrences where aerial viewpoints are required. It will be an invaluable source of information-gathering for fire investigators and fire suppression staff to identify hot spots, fire origin and cause, and property loss. The ability to use the information gathered from this device for training purposes will also expand the knowledge of Fire Department suppression staff.

After having witnessed the capabilities of drones through their use by other fire departments and emergency service providers, it is evident that this technology will enhance the HHFD's ability to deliver state of the art life safety services for the community.

The Halton Hills Fire Department is very appreciative of the \$15,000 donation. This evening Jason and Jane Brass of Terra Cotta Cookie Company are in attendance to present their cheque to the Mayor and Fire Department staff.

Reviewed and Approved by,

A handwritten signature in cursive script that reads "Simone Gourlay".

**Simone Gourlay, Manager of Purchasing**

A handwritten signature in cursive script that reads "Harry Olivieri".

**Harry Olivieri, Chief & Commissioner of Fire Services**

A handwritten signature in cursive script that reads "Brent Marshall".

**Brent Marshall, Chief Administrative Officer**