500 West Big Beaver
Troy, MI 48084
troymi.gov

J-08

CITY COUNCIL AGENDA ITEM

Date: March 28, 2019

To: Mark F. Miller, City Manager

From: MaryBeth Murz, Purchasing Manager
Lisa Burnham, Finance Manager
Tom Darling, Director of Financial Services
Frank Nastasi, Chief of Police
Thomas J. Gordon, Police Captain
Chris Culbreth, IT Manager

Subject: Bid Waiver and Budget Amendment - Sole Source- Total Station Replacement Scanner Project – Police Department

---

History

- The current Total Station used by Detective Bureau / Evidence Technicians and Southeast Oakland County Crash Investigation Team (SOCCIT) Crash Investigators is approximately 15 years old and is nearing the end of its operational cycle.
- During its 2018 calibration, it was identified that the batteries for the current unit are no longer manufactured, and therefore support services on the unit will become obsolete.
- A replacement unit is therefore necessary and critical in order to maintain the Police Department's current ability to investigate and document crime and crash scenes efficiently and with reliable information which can be presented in a court of law.
- The proposed Leica Total Station is capable of 1-officer operation. The current unit requires 2 officers – one to operate the base station and one to move the marker.
- The new unit allows the lone officer to operate the base station remotely from the marker. The new device is more advanced with more accurate GPS locating abilities.
- SOCCIT officers tested this new equipment during a training day and noted its increased speed over the current unit.
- The GPS location Smart Antenna is a device that is integrated into the Leica Total Station software. It is essentially a Total Station 'light'. The device would allow investigators to avoid using the Total Station, and its requisite set-up time and procedures, and simply mark locations with a GPS self-locating marker. Those marks would then be downloaded into the same mapping software used by the Total Station.
- This device's ease and efficiency is countered by its requirement to have a clear line-of-sight to the sky to allow the GPS to work. It cannot operate under bridges or in extremely poor weather as the Total Station can, and it has marginally less accuracy.
- The Leica Imaging Scanner would allow officers to 'scan' crime and crash scenes in a matter of minutes. The device is so accurate and information dense that measurements can be made inside the scans from an officer's computer once they are completed.

History (continued)

- This device will prove very useful when needed, where Evidence Technicians can scan a crime scene in minutes, allowing much faster scene clearance with much greater and detailed information gathered.
- Mavic Pro Unmanned Arial Systems (drones) have the ability to map scenes, both indoors and outdoors, from overhead – affording officers an additional view of evidence that might exist at the scene. The drones have the ability to fly pre-programmed routes to map areas via GPS location, essentially providing a scale overhead-view map of whatever scene or room an officer releases it in.
- In addition to scene documentation, the drones would also be available for use by Operations Road Patrol and Tactical Support Team members. The drones can provide real-time video of scenes and suspects, as well as assist in overhead searches for suspects or missing individuals (see diagrams 1, 2, and 3) and overhead views of any scenes managed by police (Troy Daze for example).
- The TST drone is equipped with an IFR camera, allowing officers to see in the dark and see temperature changes – enhancing their operational envelope. The drone's abilities are expandable to include operation at night and with the addition of lights and also an intercom system (CNT officers could have the ability to communicate with individuals without officer exposure).
- The proposed systems are accompanied by a full suite of supporting hardware and software, as well as initial training by the supplier NOAR Technologies. The benefit of these apparently separate systems is that they can all be combined into one file, affording investigators linked GPS located marker points along with overlaid scanned and overhead filmed visual evidence.
- This system is already in use by the Michigan State Police and the City of Sterling Heights Police, indicating prior vetting by law enforcement agencies and a system that is already tailored to law enforcement's needs.

Purchasing

- The Police Department has been investigating scanners for approximately 10 years.
- With the convergence of technology occurring; where a drone, scanner, and surveying capabilities can now all be combined into one software suite; the market has seen major price drops resulting in affordability, and ease of use.
- The Michigan State Police and the City of Sterling Heights have vetted, tested and are now utilizing this equipment.
- Based on market research and local agencies; Police Department staff firmly believe this is a 'plug and play' system that can accomplish all of the City of Troy Police Departmental needs in a very efficient and data-rich operation all while saving time for Police Administration.
- It is in the best interest of the City to waive the bid process in order to purchase this hybrid sole source Total Station Replacement Scanner because no other system can accomplish all of the above tasks into one integrated system and central point of information and documentation.
- The complete system includes 4 separate UAS units, allowing the D.B., SOCCIT, TST, and Operations Division to maintain their own deployable device, and allow interoperability in case of damage or malfunction making back-up units immediately available.
- This system also includes local support for the Police Department.

Purchasing (continued)

- If drones are approved, a Certificate of Authorization is recommended in which the City registers the drones and work rules with the FAA, essentially ensuring them that we will be a self-regulating entity. Insurance by MMRMA will be confirmed prior to use.

- The estimated total cost for the Total Station Replacement System is detailed below:

Total Station and Smart Antenna:	$33,279.32
NOAR integrated system drones and 3D scanner:	$35,490.00
Total:	**$68,769.32**

Financial

The purchase will require a budget amendment to the Drug Forfeiture Special Revenue Fund to transfer funds out to the Capital Project Fund to fund the project. Accordingly, a budget amendment will be required to the Capital Projects Fund to recognize the transfer-in, to fund the project along with the associated appropriation in the amount of $68,770.00.

Recommendation

City Management recommends in the best interest of the City to waive the bid process and awards contracts to *Leica Geosystems, Inc. of Fenton, MI* for the Total Station and Smart Antenna for an estimated total of $33,279.32 and to *NOAR Technologies of Troy, MI* for the integrated system drones and 3D scanner for an estimated total amount of $35,490.00 in order to purchase this hybrid sole source Total Station Replacement Scanner for an estimated total amount of $68,769.32. City management also requests a budget amendment for fiscal year 2018/2019 to the Drug Forfeiture and Capital Projects Funds to recognize the transfer and associated appropriation of $68,770.00.

Diagram 1: SOCCIT Crash Reconstruction

(I-94 crash 1/16/15)

This new system would allow the Total Station measurements, above, to be seemlessly integrated into overhead documentation gathered by the UAS.

Diagram 2: TST / Real-time Surveillance

Diagram 3: Event and Scene over-watch