

Unmanned Aircraft System Project Justification

This CIP request seeks to acquire a dual camera (one with thermal imaging capabilities and one with zoom capabilities), weather-resistant unmanned aircraft system (UAS). Below are examples of how this technology, which is quickly being adopted by municipalities across the United States, can be used by the Town to respond and perform duties more cost-effectively, more expeditiously, and with fewer personnel.

Beach Surveys

While this UAS will not be equipped with enough technology to replace the Town's annual beach condition surveys, it will allow us to quickly obtain pre and post storm images, giving us a better idea of the state of the visible beach berm and dune system. In addition, the UAS imagery can provide the Town with assessments of the dune conditions so we can better track sand migration.

Public Property Inspections

A UAS can be used to easily and safely inspect the Town's properties, including those hard to reach areas such as roofs and the water towers and the antenna arrays on top of them.

Damage Assessments

Damage assessment is another valuable use of UAS equipment. Unmanned aircraft system surveys are capable of providing real time damage assessment from above, enabling incident managers to quickly and efficiently establish objectives intended to start the community recovery process. In addition, a UAS can be used to safely inspect waterlines and streets that may be dangerous to access due to high surf or other hazardous conditions. On the stormwater front, a UAS can be used to quickly evaluate flooding impacts in the Town's right of ways.

Real Time Hazard Assessment

Although post-incident assessment is important, it is as much, if not more important, to obtain real time information during an event. When streets become impassable during bad weather, we need to be able to assess damage and to be proactive in identifying victims during these events. Whereas other platforms are useful for gathering pictures and video after an event, this equipment is designed for gathering information DURING an event. The platform in this request is the exact specifications of a platform that was flown during Hurricane Harvey for the purposes mentioned above.

Search and Rescue

The UAS will decrease search and rescue response times, possibly saving lives, as well as reducing response costs. Whether on land or water, search and rescue operations are time critical. Being able to search wide expanses, look for heat signatures (such as those from a victim), and dramatically zoom in on victims, day or night, is an extremely helpful and cost-effective resource. Once a victim is located there is a variety of third party options available regarding deliverable payload. These may consist of supplies, communications equipment, or flotation to assist a swimmer in distress.

Fire and Rescue

Unmanned aircraft systems are already being used during fire ground operations throughout the United States. Being able to search for hot spots from a safe distance using thermal imagery technology can ensure safer firefighter reconnaissance efforts. Additionally, a UAS allows incident

command to use the real time visual imagery as a predictor of fire travel - allowing for safer, more efficient positioning of on-scene personnel or equipment. The ability to inspect a structure from previously unseen angles will allow for faster deployment of needed resources to fight a fire. More importantly, use of an UAS can prevent firefighters from being injured, or worse, by an event such as an imminent building collapse.

The current costs to register and obtain required approvals to operate the UAS:

1. Register the UAS - \$5 (valid for 3 years)
2. FAA Knowledge Test for Part 107 - \$150

The useful life of the UAS is expected to be about 5 years. Annual maintenance and operations costs are approximately \$900 (this includes \$400 for property and liability insurance.

Law enforcement-related uses are not discussed here as the Police Department is already using the technology, donated to them, to provide better service to our citizens and visitors. The UAS requested here will supplement, and eventually, replace, the Police Department's UAS, leaving the Town with one UAS.

The Town understands that we must adhere to all federal, state, and local UAS regulations.