



## APPLICATION FORM

All applications must include the following information. Separate applications must be submitted for each eligible program. **Deadline: June 1, 2018.** Please include this application form with electronic entry. If you do not receive an email confirming receipt of your entry within 3 days of submission, please contact [Gage Harter](#).

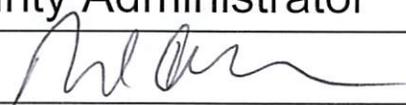
### PROGRAM INFORMATION

County: York County  
Program Title: Remotely Operated Vehicles for Emergency Response  
Program Category: Criminal Justice and Public Safety

### CONTACT INFORMATION

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### SIGNATURE OF COUNTY ADMINISTRATOR OR DEPUTY/ASSISTANT COUNTY ADMINISTRATOR

Name: Neil A. Morgan  
Title: County Administrator  
Signature: 

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Nomination Summary  
York County, Virginia**

**Program Title: Remotely Operated Vehicles for Emergency Response**

**Program Category: Criminal Justice & Public Safety**

**Program Overview**

In early 2016, the York County Department of Fire and Life Safety began investigating the potential use of small Unmanned Aircraft Systems (sUAS) for assisting with the mitigation a various incidents and situations faced during emergency and non-emergency responses. The York-Poquoson Sheriff's Office was also looking into sUAS and how it could assist with their response to the various calls for service that they are charged with. After learning of each other's interest in this new technology for public safety use, it was decided that an intergovernmental cooperation and coordination effort could be made to address our shared interest in the integration of sUAS into our operating practice.

In the spring of 2016, the York County Department of Fire and Life Safety, along with the York-Poquoson Sheriff's Office, founded a joint specialized team that utilizes sUAS in an effort to provide enhanced situational awareness and improved mitigation ability for the variety of situations we are tasked with managing in a safe and effective manner. This team, known as the Remotely Operated Vehicles for Emergency Response Team (ROVER Team), provides situational awareness and other tactical mission capabilities during public safety incidents, such as missing persons, hazmat incidents, bomb/explosive incidents, hostile/hostage situations, storm damage assessment, etc.

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Currently, the team is operational and very active. Not only does the team provide a critical response resource for fire, rescue and law enforcement incidents, they serve to assist other jurisdictions with implementing their own sUAS program.

**1. The Problem/Need for the Program:**

The Department of Fire and Life Safety and the Sheriff's Office are responsible for providing the best possible outcome to a variety of incidents every day. It is incumbent on leadership to constantly seek the tools and technology that can be used by our personnel to handle these incidents in the best way. Having the ability of an "eye in the sky" on a major incident such as a large fire, hazmat incident, active shooter incident, etc., can provide incident commanders and other critical decision makers with the intelligence needed to direct safe operations. Additionally, sUAS can provide critical time saving capability when searching for a missing/lost person.

A manned aircraft is not in the future for a County of our size. The costs associated with a manned aircraft, its care and maintenance, and staffing is cost prohibitive. However, the implementation of sUAS has provided our emergency response system with, in many cases, the same or better capability at a fraction of the cost.

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**2. Program Development:**

The ROVER Team operates under a Certificate of Authorization (COA) from the Federal Aviation Administration (FAA). This COA allows the team to fly in all classes of Airspace on the Virginia Peninsula, with coordination of the various public and military airports Air Traffic Control Facilities. Additionally, the ROVER Team can fly in Class G airspace anywhere in the National Airspace System (NAS), and in all classes of airspace with an emergency waiver that can be quickly obtained when responding to locations outside of the Virginia Peninsula.

All fourteen personnel assigned to the ROVER Team are FAA certified Remote Pilots. This is currently the highest level of FAA certification for piloting unmanned aircraft, and is the same certification required for commercial sUAS pilots. The team and its policies meet, and in most cases, exceed the laws, rules, regulations, and recognized standards and practices for sUAS operations and administration.

The team operates multiple aircrafts for different mission needs. The aircraft capabilities include a high powered zoom camera, Forward Looking InfraRed (FLIR) sensor, payload drop, onboard spot light, and night flight capabilities. The aircraft also features remote video recording and live streaming of video to a command post, local and state emergency operating center(s), and other places, as needed. This information allows command staff and other key

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individuals to be better informed and, thereby, more capable of making decisions to protect life, property and the environment.

The implementation of sUAS for public safety is a relatively new concept, not only to public safety agencies, but to the FAA as well. The rules, laws, and other restrictions on public safety agencies are very restrictive. Additionally, there has not been much communication with the air traffic control personnel at local public/private airports, military bases, or the other interested/affected entities regarding the integration of public safety sUAS into the NAS, so the FAA were apprehensive of this new concept. There were no agencies already operating a sUAS program in our area, or the rest of Virginia, and only a few throughout the rest of the country for us to inquire with on how to begin our program. This required our personnel to essentially pave the way for our team (and others to eventually follow) to fit into the NAS and comply with the known and unknown laws and regulations.

We conducted a meeting with the FAA and Military air traffic control managers in Southeast Virginia in order for them to meet our team, see the aircraft and equipment, view our policies and procedures, and discuss any questions and/or concerns. The result of this meeting was a profound understanding of our needs, how we have adapted sUAS to meet these needs, and their acceptance and willingness to assist us with utilizing sUAS for public safety missions.

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**3. Cost of the Program:**

The County has invested approximately \$120,000 into the ROVER Team program for aircraft, a response/flight operations trailer, miscellaneous equipment and supplies, and training since its inception in 2016. Like many local governments, York County is still struggling to recover from the recession. New programs and initiative with a cost such as this are typically not able to be funded with normal funding provided each fiscal year. Therefore, realizing the extreme benefit of this capability, Fire and Life Safety and the Sheriff's Office sought alternative ways to fund the program. Subsequently, with the exception of a few incidentals and standard maintenance items, the funding for this program has been provided by Fire and Life Safety grants and drug asset forfeitures. Because of this sought-after and approved funding stream, the ROVER program requires very little financial support from County budgeted funds.

The cost of the program so far (\$120,000) can be broken down into several areas:

- Training and Certification – \$10,000 (basic formal training, FAA Remote Pilot certification testing fees, annual Public Safety sUAS Conference)
- Aircraft – \$42,000 (2 at \$3,500 each, 1 at \$35,000)
- Response/Flight Operations Trailer – \$50,000
- Accessories – \$18,000 (generators, video recording and streaming boxes, etc.)

Sustainment of the program is made through county provided funding of approximately \$5,000 per year and available/awarded grants. The County was just

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awarded a State Homeland Security Program Grant in the amount of \$40,000 for the purchase of another aircraft, accessories and training.

**4. The Results/Success of the Program:**

The team has responded to over 100 missions, training exercises and demonstrations locally, regionally, and throughout the Commonwealth of Virginia for incidents involving:

- Large commercial fires
- Tornado/severe weather damage assessment
- Situational awareness for large protests and gatherings
- SWAT and active shooter situations
- Missing persons (suicidal, Alzheimer's, elderly, runaway juveniles, etc.)
- Escaped convicts, wanted persons search in remote areas
- Hazmat incidents
- Crime scene documentation
- Large training events/exercises with regional SWAT teams, State Police, military, FBI, Homeland Security, etc.

On one such case, the ROVER Team made a significant difference during an active shooter situation in July of last year. The shooter had shot one person multiple times and reportedly had nine others held hostage. In this situation, the team provided aerial situational awareness of the scene, location of the shooter, and the location and movement of law enforcement personnel. Because of the information obtained by our sUAS throughout this event, the SWAT teams were able to maneuver into position to capture the shooter safely and without further incident.

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As an early adopter of the use of sUAS for public safety needs, our department has paved the way in many areas for other agencies to follow. Additionally, the team has and continues to serve as ambassadors for public safety sUAS integration. The team has provided many demonstrations and guidance for multiple local and state agencies in an effort to get their programs up and running. Additionally, because of the success of our program, we are considered a model program throughout the country. The FAA and the Association of Unmanned Vehicle Systems International often look to our team and personnel as examples for others to follow and for providing experiences, lessons learned and other guidance at various conferences and symposiums. Our personnel participate at the national level on Public Safety sUAS operations and integration into the NAS.

**5. Worthiness of an Award:**

The County of York ROVER Program is definitely worthy of a NACO award. In less than two years, this resource has been used at over 100 requests for service and provided invaluable intelligence to commanders and critical decision makers at various significant incidents. In addition to providing a critical on-scene resource to York County, our team has been requested and responded to many incidents throughout Virginia (some of which were hours away). The team also serves as a model for other jurisdictions to follow and our personnel willingly provide assistance in the way of demonstrations, policy sharing and creation, assistance with submitting for COA's and many other requests for assistance to

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other agencies across the country. Personnel from our team serve as ambassadors for public safety sUAS use and participate in many workgroups, standards writing organizations, conferences, etc., in an effort to educate and assist others with this valuable public safety resource.

**6. Brief Program Summary:**

In 2016, the York County Department of Fire and Life Safety and the York-Poquoson Sheriff's office, began working together to create a joint specialized team that utilizes a small Unmanned Aircraft System (sUAS) for use in Public Safety emergencies and initiatives. The team, known as the Remotely Operated Vehicles for Emergency Response Team (ROVER Team) aids in situations such as missing persons, hazmat incidents, storm damage assessment, etc. In addition, the ROVER Team has assisted other jurisdictions in public safety incidents and works with localities to implement and train personnel for their own sUAS programs.

# York County ROVER Team

ROVER 1 Response/Flight Operations Trailer



DJI Matrice 600 Aircraft Showing Payload Drop Capability



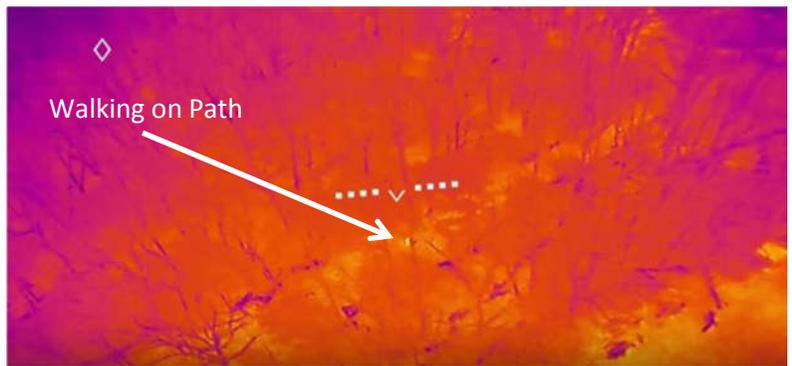
DJI Matrice 600 Aircraft with High Powered Camera, FLIR and Medication Payload



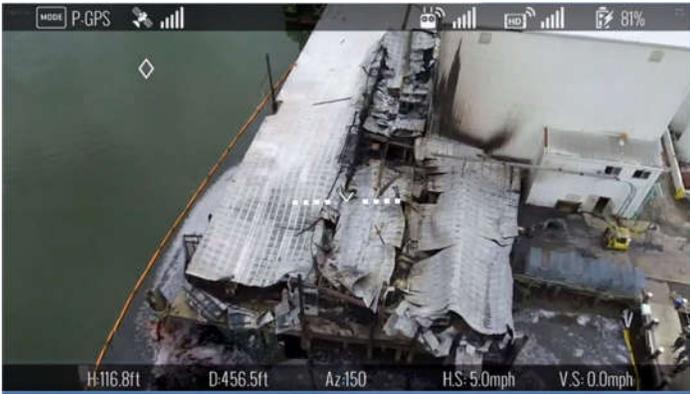
Active Shooter Response



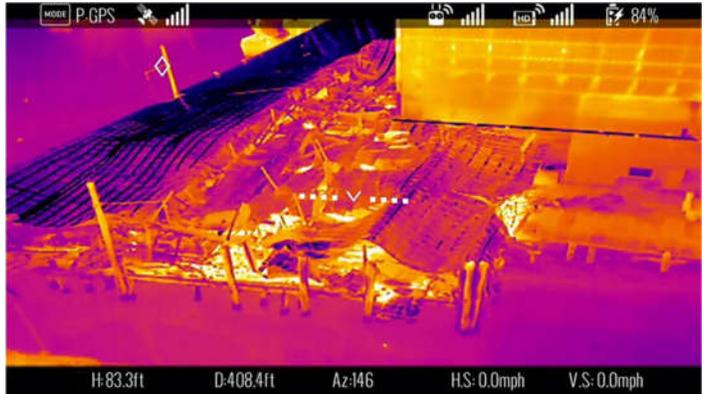
Search for Runaway Juvenile with FLIR



Seafood Warehouse Fire



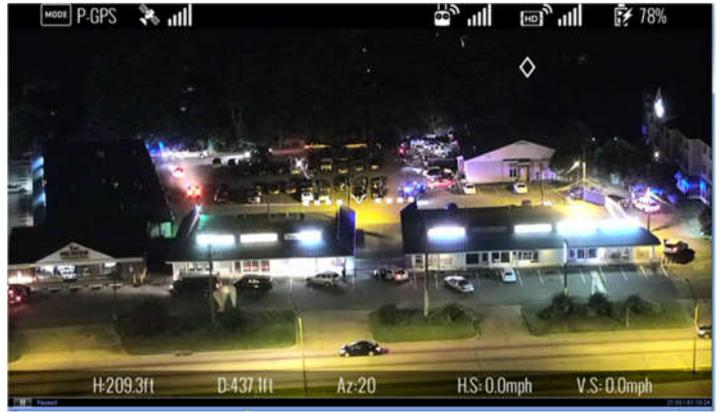
Seafood Warehouse Fire with FLIR



Tornado Damage Assessment Showing Oil Spill



High Risk Warrant Service



Public Demonstration at National Drone Day in James City County, VA





Rover One is the name of the truck and trailer outfitted by York County that houses all three drones, the supporting equipment and computer monitors to record flights and monitor air traffic.

"It's essentially dispatched no different than a firetruck or ambulance wherever the incident would be," said Sadler.

The drone team officially formed in June 2016, when the sheriff's office and fire department joined forces to finance the project.

Since then, all 12 team members have become certified pilots through the Federal Aviation Administration. Each of them completed a flight course and at least 16 hours of training, says Sadler.

The York-Poquoson Sheriff's Office says they started with two smaller drones and recently graduated to a \$10,000 drone that has about \$20,000 in added features. It has two advanced cameras and six motors. It can fly as high as 400 feet and travels about 30 miles per hour.

Master Deputy Mike Russell says the drones allow first responders to get to places faster and view unfolding situations from a vantage point where they can come up with a comprehensive plan.

"Looking down, you can see the entire scope of the situation," said Russell. "We don't exist as a team to just go out here and fly and have fun. We exist to provide information to the men and women making decisions."

Major Ron Montgomery, who serves as deputy sheriff and helped launch the program, says each flight is recorded. The reason is similar to the use of body-worn cameras.

"In case there's any question about what we were doing and what the drone saw, we could play that back if it was needed for court or we had a question from a citizen as to what was going on."

The drone is outfitted with two cameras: One that has an optical zoom and another with thermal imaging to see through smoke at fire scenes and see through the trees in search and rescue.

"You can be a quarter of a mile out with that camera on it, with that lens and get as detailed as you want to without having to be over top of them," said Montgomery.

The larger drone has been deployed about a dozen times in assessing storm damage, protecting crews overhead tactical and hazmat situations and monitoring crowds at a rally for Rep. Scott Taylor.

"The more calls we go on, the more incidents we respond to, it just makes us stronger," said Sadler. "It makes us better."

There's already talks of expanding the program by getting more first responders trained to fly and putting smaller drones in the trunks of patrol cars.

"If someone is in immediate danger, we reduce that response time dramatically," said Montgomery.

In the future, Montgomery says a claw underneath the drone has the potential to drop medicine to a stranded person or help a distressed swimmer.

"If somebody is in the York River, maybe a capsized boat or something like that ... we can literally drop a life jacket to them and then it self inflates."

Montgomery says he is not blind to the fact that some people are skeptical of security, surveillance and government. He says investigators are not ruling out using drones in executing high-stakes search warrants, but they do not plan to use them to collect information in the process of developing probable cause.

"The drone cannot be put any place that I couldn't be as a law enforcement officer without that search warrant," said Montgomery.

Sadler estimates York County has spent about \$80,000 to launch the program. He says the project has been funded by money seized in drug busts and grant money.

The FAA predicts commercial drone sales will rise about 450 percent by 2020, from 600,000 to 2.7 million.

Each of the seven cities tell WAVY.com they are interested and/or are studying the possibility of obtaining drones for policing and firefighting. The City of Virginia Beach says they have already started forming a drone program of their own.

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The electrical meters at the apartment complex had to be pulled, causing

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# Drones becoming more common in Peninsula law enforcement, fire and rescue agencies



York County Fire and Sheriff's Office share drones and their setup trailer. Assistant Fire Chief Chris Sadler goes over the rules they use for their drones at their Fire station #6 and Training area in Seaford area of York County. (Joe Fudge)

By **Josh Reyes**

JANUARY 11, 2018, 5:15 PM

**A** barricade situation at an auto shop. The ongoing search for missing boaters in the James River. Crowd monitoring at the August white-supremacist rally in Charlottesville that turned violent.

York County's ROVER Team has been there for all of it, providing an eye in the sky from one of its drones.

ROVER stands for Remotely Operated Vehicles for Emergency Response, and the team is made up of firefighters and sheriff's deputies.

Early adopters of the technology in Virginia, the team has sent its equipment and crew throughout the commonwealth and become a leading drone program regionally.

But those calls for help may become less frequent as more and more localities get drones of their own. On the Peninsula, Newport News, Hampton and Poquoson are working on getting programs off the ground.

With the technology's increasing presence comes concerns about privacy and surveillance — concerns that are not new and that local officials openly acknowledge. Just a few years ago, when drones were less familiar to the average person and rules were not established, it was a hot topic for some lawmakers and the American Civil Liberties Union of Virginia.

None of the local officials interviewed for this story said they have received much pushback from people in the last two years as agencies have developed programs for unmanned aerial systems.

## A tool on the belt

York County's fleet of drones started in the fall of 2016 with a small DJI Phantom, similar to the ones many hobbyists start out with to take aerial videos.

But their heavy duty equipment goes well beyond what most hobbyists can spring for.

The team's DJI Matrice 600 has six rotors and is close to 6 feet across. It weighs about 27 pounds, can fly continuously for 12 hours and has special equipment attached like batteries, a payload drop and an infrared camera. The rig, with all its bells and whistles, costs about \$25,000 — the powerful camera mounted on the drone costs about \$10,000 on its own.

On the ground, the team has a trailer that functions as a mobile command center, where members can watch the video streamed from the drones in real time.

"It's an eye in the sky," said Christopher Sadler, York County Fire and Life Safety's Chief of Special Operations.

Sadler and other local officials listed several uses for drones and situations they would be a benefit — search and rescue, missing persons, disaster response, crowd monitoring, suspicious packages, bomb threats and armed barricade situations, to name a few.

## Big Brother?

All local fire and law enforcement officials who talked with the Daily Press about budding or existing unmanned aerial programs were cognizant of concerns with surveillance and potential infringement of Fourth Amendment rights, which protect people from unreasonable searches and seizures.

This was a major concern of the ACLU when drone technology was an open frontier with little established regulation. Virginia passed a moratorium on law enforcement drone use in 2013 to allow time for lawmakers, law enforcement and civil rights groups to develop standards for use of the technology.

They came out of the moratorium in 2015 with rules that the ACLU praised, particularly requiring a warrant to use a drone to track a person or search a property.

Sadler said he had not heard concerns from people who have seen the ROVER team's drones. He felt they were more curious than anything.

Sgt. Mark Kincaid, commander of Hampton's unmanned aerial systems team, said he did informal surveys in the city and people's reactions to the team were favorable as long as policies were in place to prevent encroachment on Fourth Amendment rights.

Kincaid said any detective-type work involving a drone would need to include the drone in the warrant. In a barricade situation, however, the police would not need a warrant for the drone if the situation "posed an immediate danger to life."

Thinking back to the 2013 moratorium, Sadler said he felt the tide has turned on people's opinions on drones as the technology has become more common.

Officials in York, Poquoson, Newport News and Hampton all said that developing their programs also involved developing a standard operating procedure that determines if they can or should use a drone.

"We're not becoming Big Brother," said Robert Holloway, Poquoson's fire chief. He said the drone, which the department is still picking out, is for specific purposes, like creating a tactical advantage when putting out a fire.

Flying drones for government purposes also requires specific Federal Aviation Administration licensing and consistent training. Holloway said the Poquoson Fire Department has to purchase its drone before its final FAA approval. The Newport News and Hampton teams still have to undergo FAA training.

Other rules require drones to remain within the pilot's line of sight and limit flight altitude to 400 feet, either above the ground or a structure. Local agencies also have to work with the Newport News/Williamsburg Airport and Langley Air Force Base.

Potential concerns with search and seizure have deterred Isle of Wight County from the technology, according to Lt. Tommy Potter, a Sheriff's Office spokesman.

Gloucester Sheriff D.W. Warren said he'd like to get a drone, but funding is a challenge. He said he's never called in York's ROVER Team, but he laid out multiple situations in which a drone would have helped.

Maj. Greg Riley, a Williamsburg police spokesman, said the department has discussed drones mostly out of curiosity without ever having a serious discussion about it.

## A local and state resource

The ROVER Team has been a part of just about all of the situations officials in other agencies suggested would benefit from having a drone.

Maj. Ron Montgomery, head of the Sheriff's Office side of the team, said the team is a leading unmanned systems program in the region and — because they were such early adopters — became a high-demand unit in Virginia.

Locally, the team was on-site at Newport News' Hollydazzle in December to monitor crowds. Drones were brought in as weather allowed in the search for two missing boaters in the James River.

At the August rally in Charlottesville, York County's drone team was called in to monitor from above, according to Jeff Caldwell, the director of external affairs for the Virginia Department of Emergency Management. He said multiple agencies with drones were called in, but York was the leading group on scene.

Caldwell said the drone also surveyed the site of the helicopter crash that killed Lt. H. Jay Cullen and Trooper-Pilot Berke M.M. Bates, two Virginia State Troopers who were monitoring the city.

In York County, the team used a drone at a barricade situation at Ebby's Auto Painting and Collision on 2nd Street near Merrimac Trail on July 24.

Michael Sean Taylor entered the business, looking for one of the employees, court documents state. He found the employee and shot him multiple times before barricading himself in the shop for three hours, authorities have said.

Employees in the business were able to escape, and the man who was shot was treated for injuries. Law enforcement eventually threw gas rounds into the business to “distract and disorient” Taylor, and they were able to use a stun gun and arrest him.

Montgomery didn’t specifically say how the drone was used that day, but he said in those types of situations, the drone would provide information and visuals without putting an officer in a vulnerable position.

“It’s my belief that the situation at Ebby’s wouldn’t have ended the way it did without the drone,” Sadler said.

## York County procedures

York County’s ROVER Team has six firefighters and six deputies, and its equipment is kept at Fire Station 6 on Back Creek Road in Seaford.

The members of the team are spread across stations and shifts

Coming in at close to \$25,000, the ROVER team’s prized unit isn’t cheap, but Sadler said it was worth it for what the drone could do.

“York County’s never getting a helicopter,” he said. “But we can do this.”

The ROVER Team’s equipment was paid for with grants and drug seizure money.

When the team is called to a locality with which York County has established mutual aid, York absorbs the cost, Sadler said, adding that this type of partnership is common with special units, like the Newport News bomb squad.

For incidents farther away, like the Charlottesville rally, the local agencies request assistance through VDEM, which then covers the cost of response.

The ROVER team doesn’t automatically respond to all incidents in York County, but if it is called in, the members on duty respond to the scene. Sadler said he’d like to get more firefighters on the team so there would be two people on each shift ready to go.

Newport News and Hampton both are doing a similar sharing model with their fire and police departments. Poquoson’s drone would belong to the fire department, but Holloway said it would be a resource they could use to help police when appropriate.

VDEM is also working on a drone team of its own and in the FAA approval process, Caldwell said. He said VDEM has called in more help from both government-owned and private drones lately.

“It’s a great tool,” Caldwell said. “It’s cheap and gives lots of information in life-or-death scenarios.”

***Reyes can be reached by phone at 757-247-4692.***

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