



# TAKING FLIGHT

A PUBLIC SAFETY GUIDE TO LAUNCHING A SUCCESSFUL  
DRONE AS FIRST RESPONDER PROGRAM



# INTRODUCTION

Unmanned aircraft systems (UAS), commonly known as drones, have rapidly emerged as indispensable resources for public safety. These highly adaptable devices are used in various scenarios, including search and rescue, crime scene investigation, SWAT operations and firefighting.

The adoption rate of drones in public safety is remarkable, considering that the drone industry only dates back to the first commercial permit issued by the Federal Aviation Administration (FAA) in 2006.<sup>1</sup> The full potential of drone technology in public safety is still being explored.

One of the newest and most promising innovations in law enforcement's use of UAS is drones as first responders (DFR). In 2018, Chula Vista, California, pioneered DFR by launching drones from the roof of its police headquarters to respond quickly to emergency calls for service. Today, more and more departments are utilizing drones to reach and evaluate situations before officers arrive, sometimes even clearing a call without dispatching units. UAS technology provides critical situational awareness, enabling officers to de-escalate situations and ensure the safety of both officers and the communities they serve.

## DRONE USE IN PUBLIC SAFETY

Police, firefighters and other public safety officials use drones for a variety of activities, including:

- De-escalation
- Search & rescue
- Tactical reconnaissance
- Traffic crash site reconstruction
- Chasing suspects
- Fighting wildfires
- SWAT operations
- Hostage situations
- City mapping
- Event safety & security
- Disaster response & relief
- Hazmat incidents
- Wildlife management
- Border patrol
- Traffic management & monitoring
- Crime scene photography & reconstruction
- Firefighting risk assessment & hot spot monitoring



## PRODUCED IN PARTNERSHIP

Motorola Solutions is proud to partner with **Flying Lion**, the most experienced DFR consultant in the industry, to bring you this comprehensive guide. With the power of this partnership, we are confident this guide will provide you with essential information on selecting the right equipment, training your team, complying with regulations, and creating effective operating procedures. The expertise of Motorola Solutions' CAPE team, Flying Lion and the featured experts from forward-thinking public safety agencies will help you develop a successful drone program that meets the unique needs of your agency and community.



# HOW ARE DRONES USED FOR PUBLIC SAFETY?

Due to the uniqueness of each community, no two drone programs are exactly the same. The scale, objectives, and sophistication of UAS efforts vary from jurisdiction to jurisdiction. Police departments often start with a small program and expand it as they become more familiar with operating drones in their airspace. Some departments may utilize a small drone kept in the back of police cruisers, while others have fully integrated DFR programs with multiple launch points.

Broadly speaking, law enforcement uses drones in three ways:

## TACTICAL OPERATIONS

At the most basic level, drones are tools police officers bring on duty with them, packed in a patrol car's trunk or in a motorcycle saddlebag. These are primarily deployed on pre-planned operations, such as a training exercise or crowd management, but can also be deployed in minutes when the situation dictates. "If we have an extended situation where the bird's eye view would give us the vantage point, our officers are able to launch a drone and get a similar view that a helicopter would provide," explains Lieutenant Todd Withers of the Beverly Hills Police Department. The drone can provide a real-time, livestream video to an officer's phone or to the watch commander across town.

## TELEPRESENCE OPERATIONS

Telepresence technology allows for more efficient control of field-launched drones by splitting the drone responsibility between an officer on scene and a remote teleoperator. With telepresence, the officer can launch and fly the drone while the teleoperator manages the gimbal camera from a separate location. The teleoperator can focus entirely on capturing crucial information while the officer concentrates on flying the drone. In certain cases, the teleoperator may both pilot the drone and manage the camera, freeing the officer to focus on the developing situation. Telepresence is particularly useful for search and rescue operations. It allows the teleoperator to monitor the camera constantly, pan it in different directions and capture vital evidence. The use of a drone software tool, such as Motorola Solutions' [CAPE](#), is necessary for the successful execution of telepresence operations.

## DRONE AS FIRST RESPONDER

The most proactive application of UAS technology, drone as first responder requires a drone and pilot strategically prepositioned and ready to launch as soon as a 911 call comes in. The UAS is quickly airborne and the teleoperator takes control, guiding it to the scene of the emergency and often beating ground-based units by minutes. Prior to officers arriving, the teleoperator can communicate critical information in real time, and the responding officers can even stream the drone's video from their smartphones. This rapid response time is vital in emergency situations where every second counts. In nearly three-quarters of their 14,000+ deployments, Chula Vista's average response time is under two minutes, with the drone arriving before any other units.<sup>2</sup>





# SETTING UP YOUR DFR PROGRAM

## WHY DFR?

Drones are an invaluable resource for helping law enforcement officers work more efficiently while increasing their community's safety, as well as their own.

A drone can be in the air within moments of a 911 call, relaying real-time, high-definition video of the scene. In many cases, the drone can gather enough information that police are able to establish there is no emergency without sending ground units, keeping patrol officers from diverting to the scene. Chula Vista Police have been able to remotely clear calls in roughly a quarter of the instances where they have launched drones.<sup>3</sup>

When the call does necessitate on-the-ground investigation, the drone can provide the kind of tactical awareness which often helps police de-escalate situations because they know ahead of time that they are not facing, for example, an armed suspect. "It gives us more latitude to really form a plan rather than react to an exigent circumstance that requires an immediate response," explains Santa Monica Police Officer Peter Lashley.

With the ability to fly closer to the ground and sometimes into enclosed spaces, drones offer a cost-effective solution for departments without helicopters and a valuable complement for those with them.

## LEADING THE WAY

Chula Vista, the national standard upon which other departments model their DFR programs, is located about seven miles south of San Diego and seven miles north of the Mexico border. Its police department has been known for decades as a technology trailblazer and for its success in fostering a culture of community-based policing, community engagement and accountability.

Seeking faster response times and greater situational awareness, the department became the first in the country to deploy an FAA-authorized drone as first responder program, equipping it with Motorola Solutions CAPE drone video and flight control software to provide aerial support to police operations in a safe, responsible and transparent manner.

**Chula Vista's DFR program** has cut response times by 50%<sup>4</sup> and its four launch locations give the department over 90% coverage of the city.



While drone as first responder is not a cookie-cutter concept, agencies can use these 7 steps to fine tune their program to their particular needs.

## 1. DETERMINE DEPARTMENTAL GOALS

To begin a successful DFR program, it is crucial to address the fundamental question of why such a program is needed. For example, Brookhaven Police Department in Georgia sought to reduce response times to emergency calls, while Chula Vista aimed to enhance situational awareness following a neighboring agency's officer-involved shooting. Once the ultimate goal is understood, establishing short-, medium- and long-term goals can help. All of these departments ramped up their DFR operations over time as they and their communities became more comfortable with the technology. For example, the Santa Monica Police Department in California started using drones first for accident-site reconstruction and then to monitor summer beach concerts before establishing a complete DFR program. You don't need to stand up a fully-operational DFR program on day one. Many departments start small and scale up gradually, following a crawl-walk-fly pattern, to identify and address specific needs and challenges.

### AVOIDING TRAGEDY THROUGH DE-ESCALATION

Santa Monica is an eight-square-mile city nestled into the Los Angeles metro area, perhaps best known for its famous pier. Its population roughly triples on weekends thanks to tourists.

The Santa Monica Police Department built a drone program from the ground up, starting with officers purchasing a drone and slowly building to a full DFR program in November 2021.

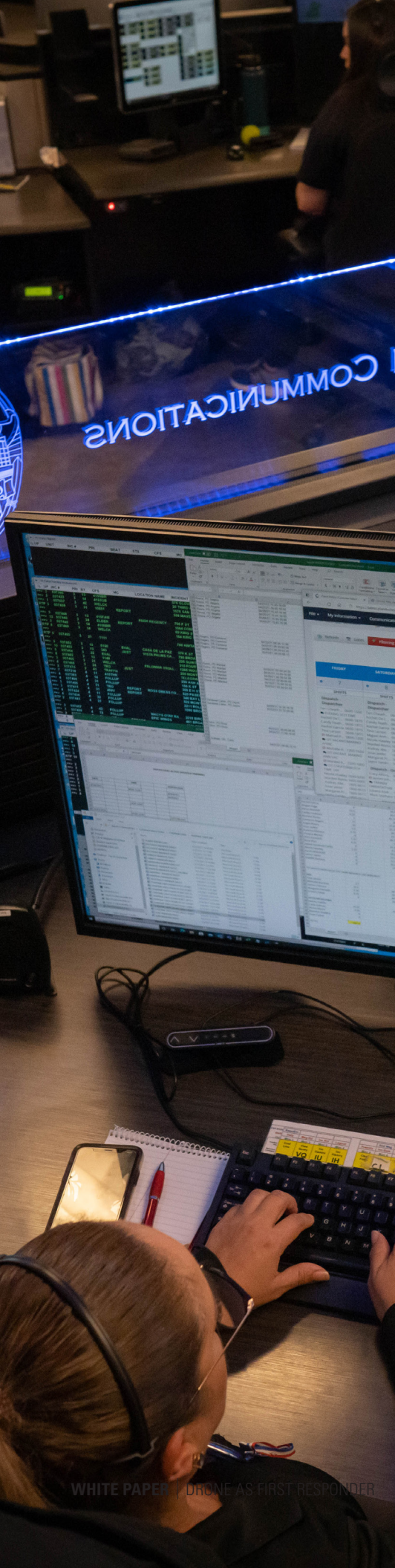
In 2022, a 911 call came in about a situation unfolding blocks from the police station: A young man was seen outside a building pointing a handgun at pedestrians. Police Officer Peter Lashley was the teleoperator and had the drone on location within moments. He spotted a handful of teenagers, including one handling what looked like a pistol. Then another teen produced a similar weapon. One of them pointed their weapon at a passerby in the street. "Every available unit in the city is coming to deal with this," Lashley recalls. As he continued to monitor the group, one of them pulled a CO2 cartridge from the gun's grip. Lashley relayed to the ground units that the pistols appeared to be air guns, not lethal weapons.

"If all you have is a man with a gun pointing it at people, you really don't have a lot of latitude for discretion," he says. "You're pretty much going in at 100%." Knowing it was teenagers with air guns allowed the police to be more methodical. "It allowed us to take time and come up with a really cohesive plan and decompress a little bit rather than have to go right in there."

## 2. UNDERSTAND YOUR AIRSPACE

Before launching your first UAS, you need to fully understand the airspace in which you're going to operate. The FAA requires drones to operate within 400 feet of the ground and remain within the pilot's visual line of sight. Having an airport in the vicinity may further complicate airspace access.

- Start by obtaining Part 107 small UAS operator's licenses for your team members, permitting them to operate a drone provided it stays within their visual line of sight.
- Consider having your agency apply for an FAA Certificate of Authorization (COA), which can take longer but permits greater operational flexibility. It allows, for example, an agency to set its own certification standards for pilots and drones. There are two types of COAs: blanket and jurisdictional. The blanket COA permits UAS operation in uncontrolled airspace anywhere in the U.S., while jurisdictional COAs cover a specific geographical location, typically one with controlled airspace (near an airport, for example). A COA may permit other activities ordinarily barred under FAA rules, including flying in restricted airspace and operating beyond the visual line of sight.
- The COA application process includes a number of requirements, including a safety assessment demonstrating that your agency has thought through the issues particular to operating in your airspace and has a plan to mitigate them. You will also need to either include a [type certificate](#) for the model drone you plan to use. If the drone does not yet have the certification — and the most popular models do not — you will need a plan for self-certifying it.
- All drone operations must occur within the operator's visual line of sight to ensure that they know what, if anything, is in the airspace near the vehicle. But there are instances where you might need to fly beyond line of sight, such as searching the roof of a large building or flying over a forested area when looking for a missing person. Once your DFR program is established, and if you have a COA, you may apply to the FAA for a First Responder Beyond Visual Line of Sight (FR-BVLOS) waiver, allowing for such activity and, potentially, extending your operations' reach.
- Who else uses your airspace? Whether it's an airport or neighboring jurisdiction with its own police helicopters, be sure to connect, coordinate and deconflict with them. For example, the Santa Monica Police Department invited the local airport's tower manager to see how they operate a safe drone program with safeguards such as CAPE's geofencing, and maintains an open line of communication with them.



### 3. FORMULATE YOUR DRONE POLICY

As with every technological advancement, a drone program requires new departmental policies defining when, where and how it will be used.

#### POLICY DEVELOPMENT QUESTIONS

As your department works through its drone policy, you'll need to answer these questions:

- Who will be trained, and to what standard? How often will they have refresher training?
- For what purposes will drones be deployed? Will they solely respond to callouts, or will they patrol?
- When will cameras record? Will they run from launch through return or only when the UAS arrives on scene?
- Where will you store the video, and for how long?
- Who will have access to the video, and for what purpose, both internally and externally?
- What information will you release to the public, either as a standard operating practice or in response to Freedom of Information Act (FOIA) requests?
- How will you protect the community's privacy?

You don't have to reinvent the wheel. Start by looking at the policies other jurisdictions have developed for their DFR programs. [Chula Vista Police Department's DFR policy](#) is available online, for example. Since every community and agency is different, you'll need to make it your own.

To ensure that your policies are effective and legally sound, it's essential to consult with relevant stakeholders, including prosecutors, to avoid any issues with evidentiary laws. Also, engage people outside law enforcement, including community leaders and interested activist groups.

Brookhaven Police Department engaged both prosecutors and activists early, sending the local district attorney and the Georgia ACLU their draft policy and soliciting feedback. "We got a lot of positive feedback and a lot of necessary feedback," recalls Lieutenant Abrem Ayana. "Not all necessary feedback is positive, right? But we learned so much just from the conversation with the ACLU."

Other legal or policy matters you will have to iron out include the locations from which you plan to launch your DFR drones. You need a roof high enough to safely lift off but still under the 400-foot regulated ceiling and as centrally located within your area of operation as possible. Many departments initially use their police headquarters roof, but some, especially if they expand operations, make private-sector arrangements. Chula Vista PD, for example, launches from two hospitals and a hotel in addition to the department roof, affording over 90% coverage of the city.

#### ONE POLICY DOES NOT FIT ALL

Different localities take different approaches to critical policy issues, such as whether to use the UAS for general patrol or specific callouts, what to record, and what to do with the recordings. Beverly Hills PD uses its drones for general patrol while only twenty miles away, Redondo Beach PD only uses its UAS for specific calls for service. Chula Vista PD points its gimbal camera to the horizon when the drone returns to base in respect of the community's privacy, and treats any video shot as part of the investigative record, so it is generally unavailable to the public. Redondo Beach, on the other hand, sometimes responds to privacy complaints by offering to show the concerned citizen the footage to reduce their fears. Many departments mirror their body-worn camera policies regarding the handling of video footage. You will craft your approach according to what best serves your community. Still, everyone agrees it's important to prioritize transparency and clarity. Whatever approach you take, it's essential to communicate openly with the public about the reasons behind your policies and how they align with the community's interests.



## 4. DEPLOYING THE PROPER EQUIPMENT AND TECHNOLOGY

While the drone itself operates in the sky, the team managing it requires a designated workspace. Start on the roof, where one or more people will be stationed with the drone, waiting to launch it or watch it fly. Select a location with the clearest possible view of your operating area in order to maximize the distance at which you can maintain line of sight.

Other considerations are practical: Does the drone team have shelter on the roof? Are there easily-accessible restrooms? And, of course, you will need a space to store not only the drone but its peripheral equipment, such as extra batteries, and a power source with which to charge them, replacement rotors, and the display(s) on which they will watch the camera feed.

Early on, you will have to gauge how your drone interacts with your environment. The Beverly Hills Police Department's drone batteries overheated in the California summer, for example, so pilots brought a wine fridge to the roof to cool them off.<sup>5</sup> The truth is that drones are not manufactured with the idea that they'll sit out in the elements all day waiting to be deployed. "The weather here in Georgia is very fluid," Brookhaven PD's Lieutenant Abrem Ayana says. "You've got rain, you've got wind, you've got humidity. That first year we had a lot of trial and error situations while problem-solving issues related to humidity and weather conditions."

You want a space above and away from power lines and cell towers, which can interfere with UAS operations. When Chula Vista started its DFR program, for example, its drone could not cover more than half a mile because it was not designed to operate over a city, with its pollution of electromagnetic transmissions that interfered with the pilot's ability to communicate with and control the aircraft.

Your roof team will also need to be able to gauge the weather, not simply citywide but in their immediate vicinity. Departments often set up individual weather stations to read whether a microclimate issue could affect the ability to launch and fly the vehicle.

Drone programs need a secure, stable internet connection to be successful. Start your research early. A reliable network is paramount to the success of any drone program. The launch team will also need an open, stable line of communication with the teleoperator. Radio can do this, but agencies often use a mobile phone line. They can access both drone feeds and incoming 911 calls to launch quickly. The teleoperator can then monitor the scene by the video feed, coordinating with officers on the ground and giving real-time intel.

The software powering the DFR operations is critical. You want something robust and adaptable which can stream high-quality video, including to mobile devices, has advanced obstacle and collision avoidance capabilities, the ability to set virtual flight boundaries through geofencing, can be controlled from multiple locations, and has a track record of successful FAA compliance – all of which Motorola Solutions' [CAPE software](#) possesses.



## 5. ENGAGING WITH YOUR COMMUNITY

Drones often arouse controversy, and introducing them into police operations will understandably inspire privacy concerns. “Any time someone sees a drone, they think it’s looking at them – it’s just human nature,” Santa Monica PD’s Peter Lashley says. His approach? When someone complains that a drone is hovering over their house, he’ll call them and let them know: “Hey, it’s the police. We’re not there for you.” And that is all they usually need to know.

Every potential problem holds an opportunity. You can strengthen community relations with diligent outreach, dialogue and education. This communication needs to go both ways – explaining the benefits of a DFR program while carefully listening and adjusting to community concerns. “The more transparency you have and the more you share with your community, the more buy-in you’re going to get because the more people see it, the more they understand it,” Redondo Beach Police Captain Stephen Sprengel says. “Then they’re going to say, ‘Oh, that’s a great resource for the police department – they’re not using it to spy on me, they’re using it to make things safer.’”

Here are ways to engage those you serve:

**REACH OUT EARLY:** Bring in potential critics, such as privacy advocates and civil rights groups, or interested community members, such as business owners. Brookhaven PD proactively engaged with the Georgia ACLU and shared its draft policy before standing up its program. As a result, it incorporated some of the group’s video retention concerns into their policies (they were afraid the police would retain the footage to feed future automatic identification systems). Brookhaven created two categories of footage: drone-criminal and drone-non-criminal, and after 30 days, all non-criminal footage is purged. They also developed a policy specifying that the police won’t target groups based on First Amendment-protected activities.

**LEVERAGE LINES OF COMMUNICATION:** Make DFR less potentially scary by demystifying it. “The more you share with the community, the better off you’ll be,” Redondo Beach’s Sprengel says. “There’s nothing to hide. So why not share the information?” Invite reporters to see your new gear in action and use the opportunity to address concerns that will arise anyway. At the same time, put information about the program on your department’s website, starting with your DFR policy. Brookhaven PD publishes its [CAPE Flight History](#) page on its public-facing website so residents can see precisely where drones have been deployed and why.

**TAKE IT TO THE STREETS:** Hold public forums explaining what you plan to do and why. Take every opportunity to show off your tech. Is there a street fair or other community gathering? Host a demo of your program. “We have community events and bring a van out – we’re very open about it, we do demonstrations,” Redondo Beach’s Sprengel says. “The communities are impressed by it when they actually see it.”

**EMBRACE TRANSPARENCY:** Education and engagement are rolling activities. “It’s like gardening,” Santa Monica’s Lashley says. “You’ve got to keep on it, or it’s going to wither and die.”

## PARTNERING WITH THE COMMUNITY

Founded in 2013, Brookhaven, Georgia, is a city of 60,000 in the Atlanta suburbs. Faced with an ongoing rash of car thefts, **Brookhaven Police Department** evaluated a DFR program. First, however, the department very deliberately engaged local stakeholders, including the ACLU of Georgia to gauge its privacy concerns, and the local District Attorney to ensure that evidence produced by the drones would be usable. The department crafted policies to meet the privacy concerns and launched its program in April 2021. “Once we got those two blessings, we moved forward and launched the program with community support,” Lieutenant Abrem Ayana recalls.

For a while, Ayana took pride in telling people that the department had not received any community complaints about the program. “I can no longer say that,” he notes. “We got one – literally a guy who stays in a location that we fly the drone from.” A recent arrival, he wondered why police drones kept hovering outside his building. Ayana explained the reason and even calibrated the drone operations to deal with the citizen’s noise concerns, alleviating all problems.

“The biggest thing I hear is, ‘Can the drone reach my neighborhood?’” Lt. Ayana says.





## TRACKING FLEEING SUSPECTS

Redondo Beach is a waterfront community of 70,000 in the Los Angeles metropolitan area and a tourist destination. It started its DFR program in April 2021.

On one occasion, a 911 call came in complaining about a domestic fight. The UAS arrived on the scene first, and the teleoperator watched someone exit the front door of the house, but as soon as a police cruiser pulled up, the suspect dashed back inside. Shortly thereafter, and unbeknownst to the officer on the ground, the suspect ran out the back of the house, over a back fence and onto nearby railroad tracks. The drone followed, tracking the suspect as he hid amid shrubs.

With the intel from the drone, officers and police dogs were able to take the suspect into custody without further incident. “Not only was it safer for the officers, but it was also safer for the suspect because we know where he’s at and we can call him out,” Redondo Beach Police Captain Stephen Sprengel says. “I consider that a huge win for the drone as far as officer safety.”

## 6. BUILDING YOUR TEAM

Police forces throughout the U.S. face staffing shortfalls,<sup>6</sup> adding complexity to team composition. The individuals who comprise your force are your most valuable resource, and one of the points of a DFR program is to deploy them more efficiently. As you build your UAS team, consider which roles require a sworn officer and which can be filled with a contractor.

Start at the top – literally. Many departments use outside assistance for the rooftop team, for example. “It was a no-brainer for us. The person on the roof has no law enforcement responsibilities whatsoever,” Santa Monica Police Officer Peter Lashley shares. “You’re not enhancing the mission in any way by having a sworn officer on the roof.” Companies such as [Flying Lion](#) provide part 107-certified pilots who have conducted tens of thousands of DFR flights but will cost less than a sworn officer.

Check your department’s budgetary guidelines – you may have to issue a “request for proposal” to bring on outside contractors. You will also need to run background checks on contractors, either through your own department or the company providing them.

Conversely, the teleoperator should be a sworn officer with the kind of knowledge and training you want on the scene. “In that room, it should be an experienced officer who knows how to direct other officers to set up a perimeter, knows the area, knows the law,” says Chula Vista Police Department’s Captain Miriam Foxx.

Don’t assume that because DFR involves cutting-edge technology, it’s a natural fit for younger officers. Using veteran members of the force allows them to leverage their experience to benefit the officers on scene. Plus, a balance of age and experience will bring a broader knowledge to bear in any situation.

Everyone on your UAS team should have a part-107 certification. But that is merely a written exam, so you also need to train them on the actual equipment, getting them real experience before they have to operate with individual lives on the line. No actual flight training or testing is required to pilot a drone. Still, the National Institute of Standards and Technology has developed a [standard for testing user proficiency](#) which is the industry benchmark. “We want to have a professional drone program,” says Lieutenant Abrem Ayana of Brookhaven PD. “We don’t want just to give a cop a drone and tell them to fly. That’s how accidents happen.” Beyond the initial training, keep your team’s skills fresh with regular training programs. Brookhaven, for example, trains on a monthly basis.

Staffing availability will dictate your program’s scope. Few departments run DFR 24 hours a day, seven days a week. Beverly Hills PD, for example, started out running DFR four days per week for 10 hours a day; over time, they moved to seven days per week for 12 hours a day. Redondo Beach PD runs its program three days per week which vary seasonally. Review your crime and emergency call data to identify when your program will make the most significant difference.



## ELEMENTS OF A DFR BUDGET

Standing up a new drone or DFR program will entail paying for:

- Personnel flight training and obtaining Part-107 certification
- Outside support from consultants and contractors
- UAS drone hardware (multiple drones with different capabilities)
- Drone control software
- Drone maintenance/health check
- Batteries
- Backup rotors
- HD monitors
- A backup remote control
- VHF transceiver
- A FLIR camera for heat-sensing
- COA fees

## 7. PAYING FOR YOUR DFR PROGRAM

DFR is an immense value, and while it is not cheap, it is cost-effective. Brookhaven PD estimates that dispatching a drone costs roughly one-tenth of what dispatching an officer and patrol car would.<sup>7</sup> The real value is not in money saved, but in the efficient use of resources. “It’s economically sustainable because it allows us to better use our most limited resource, which is a police officer,” Brookhaven’s Lieutenant Abrem Ayana says. “You can’t remove the police officer from the cost equation, and you can just change the ratio of police officers to incidents.”

There is a human tendency to go big, go shiny and go expensive with new equipment. But remember to crawl before you walk or try to fly. Distinguish between needs, wants and the bells and whistles outside both categories. Research what’s available and map it to the departmental goals you identified at the start of the process. When you do buy your drone hardware, do it from a local retailer. You’ll get better support and customer service in your community than sending something across the country to get fixed.

All told, your up-front cost will include the COA fee, training, equipment (which you may either lease or buy), software and staffing. After that, your ongoing costs will be the COA renewal fee, ongoing training, equipment maintenance and replacement, the software and personnel.

Some departments have started drone operations with individual officers buying and deploying drones as proof of concept. Before Santa Monica had a program, for example, a couple of officers purchased a drone and started shooting public service videos with it, which they showed to their chief. “Drones were a relatively new technology, and there was a perception that it was a toy or a hobby,” Santa Monica PD’s Peter Lashley recalls. “The chief really saw this as a tool that we could use.” Once the brass understood the potential, “it really grew from there.”

A line in the budget is ideal, but it’s not the only other way to get a DFR program off the ground. Private citizens can donate equipment to your department. You can also seek to use asset forfeiture money to help fund your program.

Chula Vista’s Police Foundation paid for that department’s initial costs, for example, while the program borrowed patrol officers to act as teleoperators. The city didn’t fund the DFR program until 2021, three years after it was started. “You have to be innovative, show the successes – and then the funding will come,” says Chula Vista PD’s Captain Miriam Foxx. “Don’t be afraid to think outside the box.”



# THE FUTURE OF DRONES AND PUBLIC SAFETY

The public safety sector is on the cusp of a drone revolution, and the possibilities are exciting. As drone technology continues to evolve and the FAA's regulatory framework adapts to these changes, the future looks promising for the integration of drones in public safety.

In this future, drones could be housed in boxes strategically placed across the city, with fire stations being a prime location due to their proximity to calls for service. These boxes will be equipped with advanced technology that allows for the quick and efficient recharge or battery swap of the drone, as well as thorough pre- and post-mission checks. An emergency call comes into 911, and the box opens. A drone deploys, arriving on the scene in seconds, giving quick and detailed intelligence to the teleoperator and to rolling ground units.

The need for human spotters and pilots will be eliminated, through advancements in automation, making night-time operations routine. The UAS fleet will become a fully-integrated law-enforcement tool comparable to an officer's radio and gun. This will provide a safer future for both law enforcement and the communities they serve.

As public perception of drones in public safety continues to evolve, the possibilities for their use will only continue to expand. The future of drones and public safety is full of promise and potential.

## AERIAL BACKUP

Beverly Hills, arguably the world's most-recognized zip code, is 5.8 square miles wedged into the western side of the Los Angeles metropolitan area. The **Beverly Hills Police Department** has leaned heavily into proactively using technology for public safety, including establishing a Real-Time Watch Center in June 2022.

The officers have embraced the drone, call sign "Hawkeye," and will frequently ask if it is in the area to provide backup. Lieutenant Todd Withers recalls one incident where an officer was trying to help a mentally ill homeless man who then attacked him. The cop couldn't reach his radio, but thanks to Hawkeye, backup was quickly en route, preventing further injury. "It gives them a sense of security knowing that someone is there with them watching them and able to call things out," Withers says.

Hawkeye isn't Beverly Hills PD's only drone. The department also has rapid-deployment drones, which can go into patrol-car trunks or motorcycle saddlebags, and smaller tactical drones that help the city's SWAT team and are small enough to fly into and clear tents and attics, saving humans from having to put themselves at risk to do so.



## SPECIAL THANKS

Motorola Solutions and Flying Lion collaborated with public safety UAS subject matter experts throughout the U.S. to provide you with their insights and advice on creating and maintaining a successful drone program. We consulted with law enforcement agencies that have set the standard for successful drone programs in the industry.

Our special thanks go out to the highly skilled UAS teams at Beverly Hills, Brookhaven, Chula Vista, Redondo Beach and the Santa Monica Police Departments for generously sharing their extensive knowledge and expertise.

By sharing their experiences and lessons learned, they have provided invaluable guidance to help other agencies avoid costly mistakes and confidently launch their own drone programs with success.



<sup>1</sup> <https://www.digitaltrends.com/cool-tech/history-of-drones/>

<sup>2</sup> <https://www.chulavistaca.gov/departments/police-department/programs/uas-drone-program>

<sup>3</sup> <https://www.chulavistaca.gov/departments/police-department/programs/uas-drone-program>

<sup>4</sup> <https://www.linkedin.com/pulse/how-reduce-your-911-response-times-50-save-lives-todd-radulski-1f/>

<sup>5</sup> <https://www.bloomberg.com/news/features/2023-01-19/in-beverly-hills-police-surveillance-technology-takes-off>

<sup>6</sup> <https://www.policeforum.org/workforcemarch2022>

<sup>7</sup> <https://www.govtech.com/public-safety/unmanned-drones-to-respond-to-911-calls-in-georgia-town.html#:~:text=Brookhaven%20estimates%20that%20a%20drone%20response%20costs%20roughly,quicker%20to%20scenes%2C%20since%20they%20can%20bypass%20traffic.>

Learn more about CAPE drone software at  
[motorolasolutions.com/cape](https://motorolasolutions.com/cape)

