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COUNTY OF EL DORADO
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To: The El Dorado County Board of Supervisors
From: El Dorado County Sheriff ~ Coroner ~ Public Administrator
John D'Agostini
RE: Helicopter Operations Presentation
Date: April 25, 2022

Introduction

After many years of deliberation and investigation, the time has come for a rotary wing (Helicopter) air support unit (Unit) operated by the Sheriff's Office to serve as a tool to assist law enforcement with many functions such as assisting patrol with response, and conducting surveillance for specific units such as Investigations, Interdiction, HOT, etc. Additionally, the Unit would be able to carry out specialized operations such as Search and Rescue and fire suppression. The Unit would greatly reduce potential safety hazards for responding deputies and citizens, and assist the county in achieving the General Plan goal of an 8-minute response time to 80% of the county. And, we currently have qualified, and trained staff employed at the Sheriff's Office.

The current Sheriff's Office Air Squadron has been and will continue to be a valuable asset for the Sheriff's Office and the community, however; we need to keep in mind that this is a completely volunteer organization and currently has no rotor assets with none available in the foreseeable future.

Background and Overview

Law enforcement agencies across the United States have been utilizing some form of air support, fixed wing, and rotary wing, since 1966. Studies have shown the use of an aircraft can:

- Increase efficiency (time per call is less when an aircraft is involved; an aircraft is frequently first on scene).
- Increase effectiveness (suspect apprehensions are more likely when an aircraft is involved).
- Be a force multiplier (less deputies are needed when an aircraft is overhead).
- Facilitate many types of searches (block searches, search and rescue operations, and missing person searches) which add to citizen and officer safety.
- Increase deputy presence (crowd control/riots) when using a helicopter.
- Reduce the risk to citizens and deputies during vehicle pursuits.
- Aid in conducting law enforcement surveillance.

The use of helicopters for patrol began 56 years ago in Lakewood, California with the "Sky Knight" program. Flying 10 hours per day, crime in Lakewood went down by 11 percent, while it rose 9 percent in the rest of Los Angeles County during the same 18-month period. This test program, which was monitored by internal as well as independent evaluations, illustrated the direct impact of law enforcement helicopters on crime. "Sky Knight" and subsequent programs have been so successful that the use of helicopters has become a common tool for effective law enforcement in rural, urban, and suburban areas today. Sky Knight became the first airborne law enforcement program in the nation to fly regularly scheduled patrols.

Currently, the Sheriff's Office must contact either the California Highway Patrol, Sacramento, or Placer County, and on rare occasions, combined with extreme need, one of the Air Ambulance services. While they are willing to assist, at times they are unable to because of workload considerations and their responsibility to their own jurisdictions. This is particularly true during major incidents affecting multiple jurisdictions.

From 2017, to October of 2021, the Sheriff's Office has requested air support from the California Highway Patrol 390 times. We received support 374 times, or 95% of the time. The graph only captures CHP statistical information, and the totality of requests. Additionally, the graph does provide for standby time, or the time they spent on scene prior to departing. It is not uncommon for air support to depart prematurely, or prior to our resolution due to competing priorities.

This does show that the need for air operations in El Dorado County is warranted. Over this same time, we used CHP air operations 105 times and rescued 126 victims. These stats are using third parties air units which requests must be approved. It can be assumed that if the county had their own air operations unit this number would be much higher.

Further, Sheriff's Office are operations would be used heavily by Search and Rescue (SAR) to locate injured or lost subjects. At times in the winter weather locating someone quickly, especially when the report comes in the afternoon / evening could be the difference between saving someone's life or not. Locating someone with air support happens in a fraction of the time it takes to locate them on foot. When calls are in certain places within the County (desolation wilderness) it could take hours just to drive to the location where SAR steps off. Currently the Sheriff's Office fields almost 100 SARs per year between the west and east slope.

CHP Valley Division Air Operation Aircraft:

Air-21 (Fixed Wing, Gipps GA-8)

Air-23 (Fixed Wing, Gipps GA-8)

H-20 (Helicopter, Airbus H-125)

H-24 (Helicopter, Airbus H-125)

These numbers are based on our CHP93 form which is used to capture activity by each assigned crew through the automated CHP93 program for the El Dorado County Sheriff's Department. It does not discern between fixed wing or helicopter.

	Total Flight Time (hrs)	# of Requests	# of Assists	# of Searches*	# of Rescues**	# of Rescued Victims
2017	108.1	102	90	78	24	29
2018	81.1	70	69	56	23	26
2019	94.5	79	79	61	21	27
2020	80.4	68	67	51	18	23
2021	73.2	71	69	60	19	21
Total	437.3	390	374	306	105	126
Average per year	87.46	78	74.8	61.2	21	25.2

*May include Suspect(s), missing party, vehicle, aircraft, Property, Evidence

**May include Hoist, Off Site Landing, Toe In, One Skid, Hover, Water, Short Haul, Long Line, Rescue Assist

An air support unit operated by the Sheriff's Office would be an effective resource to impact crime, increase public safety and ensure the Counties efficiency in time of need. The Unit will be able to:

- Provide the County with an effective, highly visible community safety and anti-crime program.
- Assist Search-and-rescue missions.
- Reduce vehicle theft, robbery, burglary, and assaults, etc.
- Increase criminal apprehension rates.
- Reduce response time to emergency and "in-progress calls" and provide valuable support to staff during disasters such as the recent fires.
- Provide improved drug surveillance and deter illicit drug activity.
- Improve safety to Deputies investigating criminal activity.
- Reduce the number and duration of pursuits thereby limiting the Counties liability exposure and the risk to deputies and innocent third parties.

- Reduce staff-hours spent conducting searches for missing persons and criminal suspects.
- Facilitate traffic management (especially in time of evacuation).
- Provide increased SWAT capabilities.
- Facilitate patrol and off-road enforcement in the rural areas.
- Increase the level of fire protection.
- Provide EMS transport in special or unique circumstances.

A helicopter response to crimes in progress, or crimes that have just occurred is frequently measured in seconds. Rapid response is critical to effective law enforcement and a major justification for such a Unit. Deputies respond regularly to calls of burglary, robbery, theft, and assaults in progress or "just occurred". Often, detailed suspect and/or vehicle descriptions are available. This information is useless to ground based units hampered by traffic congestion which obstructs their vision and mobility. As a result, their potential for locating and/or apprehending fleeing suspects is limited.

A responding helicopter has far superior observation capability than a ground-based vehicle. It is not handicapped by traffic and can cover the same area without loss of effectiveness. While Air Support Programs cannot replace patrol deputies, their effect as a "force multiplier" enhances the impact of existing patrol units and can reduce the need to field more deputies to a given incident; thus, freeing up deputies to handle other calls for service or conduct proactive patrol.

Timely air support gives ground deputies an overwhelming advantage over their criminal opponents. The potential for rapid response and a "birds' eye" view of any situation bestows a degree of superiority that few criminals can overcome.

As we have experienced responding to Search and Rescue operations, a helicopter proves itself invaluable and is one of the most effective search and rescue tools. Their slow speed and ability to hover make them the most effective asset for targeting smaller areas and performing close-up inspections of land and

water. A properly designed helicopter may brave the elements and remain stable in crosswinds and moderately threatening climates.

Helicopters can access and land in hard-to-reach locations. Operating from a helicopter allows responders to administer first aid to survivors long before ground units can arrive. A helicopter's size, power, and agility allow it to be equipped to perform well in potentially hazardous locations, such as in remote areas, high altitudes, high temperatures, and reduced atmospheric pressure. Additionally, they can fly for several hours and for hundreds of miles at a time, so they can cover vast distances quickly and perform hours of rescue operations without needing to refuel and can carry hundreds of pounds of food, water, and supplies.

Further, helicopters are an effective tool in fighting California wildfires. Helicopters can strategically drop hundreds of gallons of water or retardant with pinpoint accuracy. They refill their buckets at dip sites such as public lakes, reservoirs, or any water sources that are deep enough for the buckets. Part of the initial attack, when fires pop up in El Dorado County, the Unit will be equipped with the proper tools to respond and take immediate action to help prevent or slow the spread of wildfires.

As the frequency and size of wildfires continue to plague our state, the County must take an aggressive approach in combating them. During the long California wildland fire season deputies, firefighters, and citizens face life threatening situations where they must respond to and combat fires. An added safety measure for our County would be a helicopter orbiting the scene of a fire to provide evacuation orders, provide fire updates and drop water or retardant on hotspots. According to Cal Fire, in the Amador / El Dorado County fire unit, in 2021 there were 639 vegetation fires.

A. Crime Detection and Prevention

The importance of helicopters as a crime prevention tool cannot be over emphasized. By its mere presence above a location, it serves as a

psychological deterrent to criminals. Anyone contemplating a criminal act who becomes aware of a law enforcement helicopter overhead is almost certain to abandon the idea, at least temporarily. The result is a crime that is not, and perhaps never will be, committed.

A helicopter would provide a means to patrol remote areas of the county such as open space, large industrial and commercial facilities, and our National Forests. Although some of these areas may be patrolled with vehicles, much goes unseen because of a ground unit's limited field of view. Also, these areas often do not receive the degree of attention they should due to their inaccessibility and competing priorities.

To illustrate, although actual times may vary, a helicopter's response time from the Placerville Airport to the South Lake Tahoe Airport would be around 17 min. (Traveling at 130 kts [150 mph], 42.41 miles). The response time of a ground-based patrol unit would be about one hour (55 mph, 55.22 miles) in optimum conditions. Throughout the year, however, the Tahoe Basin sees significant road delays where even emergency vehicles find it difficult to penetrate gridlocked streets and intersections. This illustration shows that the Unit would be less than 20 minutes away from most areas of the county.

The helicopter's fast travel time means fewer suspects will escape. It also means that ground units may be canceled by the air crew when these units are not needed. This results in ground units being free to answer other calls for service. Even when ground units are unavailable to immediately respond to a call, the helicopter may still be able to contain the scene until a ground unit is free.

B. Tactical Support

Due to a helicopter's unique observation capabilities, it can be used as an aerial platform and communications hub in a variety of situations such as

during emergency responses, searches, pursuits, search and rescue, and evacuations. The helicopter observer can see far more than a ground unit in the same area.

One of the most difficult calls for law enforcement is a search for a lost child. These searches may be time and labor intensive but also time critical. When a three-year-old wanders away in a neighborhood full of swimming pools, every second counts. Laborious house to house searches, facing locked gates and absent homeowners, are extremely frustrating and time consuming. From the air, swimming pools and backyards can be checked with great speed, cutting search time drastically, greatly reducing the number of ground personnel necessary. Searches for other people, such as lost hikers or missing people suffering from dementia or other cognitive functions are also expedited by a helicopter. Several times a year, deputies are called to search for missing persons with diminished mental capabilities. With a helicopter, large areas of hillsides and mountains, deep ravines, and large areas can be searched in minutes.

C. Vehicle Pursuits

During vehicle pursuits the use of a helicopter to maintain visual contact with the suspect vehicle, while also directing ground units, will reduce the number of law enforcement vehicles involved. Vehicle pursuits are intrinsically dangerous. From their observational vantage point, helicopter pilots or observers can monitor a vehicle safely and provide pertinent information to ground pursuit deputies. This enables the ground pursuit deputies to remain near the suspect while tracking the location and direction without being noticed by the suspect, enabling deputies on the ground to act once the suspect has stopped or exited the vehicle. Further, the helicopter can assist with a call that involves a deputy in trouble by providing direction and, if necessary, a show of force. Helicopters can also report on traffic or environmental conditions.

D. Drug Interdiction

Experience has shown that our county's proximity to the Sacramento Valley attracts drug dealers into and through the county while they conduct their illegal activities. Often, the only way to build a case against these individuals is through surveillance. This is a time-consuming, labor-intensive undertaking. The helicopter is an indispensable tool when it comes to following mobile drug traffickers.

Large scale illegal cultivation of marijuana is thriving in Northern California. Open space which is abundant within the county is considered prime territory by clandestine growers. Often, the only means to locate these "grows" is aircraft. The helicopter will allow us to continue to fight the narcotic problem.

Additionally, a helicopter would be a valuable tool when eradicating large, illegal cannabis grows in remote areas. The helicopter will allow us to hoist out large amounts of trash and cannabis plants, saving time and adding operational efficacy to the operation. These large, illegal, outdoor cannabis operations are commonly organized by drug trafficking organizations and would be eligible for program reimbursement through the Federal Domestic Cannabis Eradication and Suppression Program (DCESP).

E. Civil Disorders / Public Events

Helicopters facilitate the direction and command of field personnel during civil disorders and public events, such as the 4th of July events in Town Center. It is possible to view an entire event at once and direct necessary personnel to potential problem areas if needed, thus averting congestion or major confrontations. Visual and videotaped evidence of events can also be easily obtained from the air for use in prosecution and future tactical planning.

Depending on the nature of the event, a helicopter can provide excellent publicity and serve as a presence deterring unlawful activity. A helicopter is able to note suspicious behavior by persons from air much easier than from the ground, able to notice vehicles circling an area, crowds forming, and creating an overall picture for the safety of the people below and being able to prepare if it appears circumstances are changing.

The helicopter's public address capability and its high intensity searchlight are additional benefits in crowd situations. They provide a means to illuminate and address large crowds, reducing the anonymity of individuals. This acts as a powerful deterrent to those inciting unlawful action or violence.

F. Emergency Response and Resource Delivery

During a disaster or major emergency, the helicopter is unsurpassed for transporting emergency personnel into and throughout the county in a timely manner. The helicopter can also serve as an investigative and management tool permitting aerial reconnaissance and photography. This is a resource which would be available to other county departments such as Environmental Management and Code Enforcement as needed. Additionally, when responding to persons in mental health crisis, a helicopter can save lives. In situations such as a mentally ill individual with a weapon, air support is one of the few tools where we can locate and attempt to give orders while being far enough away to reduce the threat. Also, air support can locate a dangerous individual hiding and stop a potentially deadly encounter.

G. Fire Suppression

Although not generally considered a fire suppression tool, helicopters are routinely the first to report fires in their patrol area. Their aerial vantage point permits them to easily see the initial faint traces of smoke and fire. This early discovery often results in saved lives and minimized property damage. Additionally, the helicopter will be equipped with fire suppression tools such as a water bucket. They will be able to be part of the initial attack and help suppress the growth of the wildfire.

Further, part of what plagues our area are those fires which are ignited by lightning. The Unit would be able to deploy during, or just after a lightning event and check for those smoldering hotspots throughout the county, taking action when necessary to extinguish any potential fire.

Program Overview

A. Funding

The Sheriff's Office will fund the purchase of a helicopter using Sheriff's Office Special Revenue Funding.

Amounts being used making up the estimated \$3,100,000 needed to purchase a helicopter is as follows:

- \$750,000 Federal Asset Forfeiture
- \$900,000 Rural Counties Funding
- \$425,000 State Asset Forfeiture
- \$1,025,000 Front Line Supplemental Law Enforcement Account
- \$3,100,000 Total**

The on-going operation and maintenance cost of the program is estimated to be \$800,000 annually. We are proposing to use \$400,000 of TOT monies to off-set maintenance costs for the first year. We are requesting the general fund to cover the remaining \$400,000 cost this first year and \$800k annually after the first year. Personnel costs would be absorbed in

the Sheriff's Office budget, and we would not be asking for additional deputy allocations to operate the program.

B. Operational Deployment

The Unit will utilize a single aircraft. This will allow the Sheriff's Office to operate the helicopter as many as four days per week, one shift per day. Deployment schedules will coincide with peak crime periods or be determined in response to requests to perform specific missions. The helicopter would be airborne a total of approximately ten hours a week, for a total of 500 hours a year. The crew, when not flying, would be engaged in service and/or maintenance and would be on a ready status if type of maintenance allows. Should an immediate need arise, they could be airborne within minutes of notification. Crews would spend their entire shift either conducting service or maintenance, airborne or on a ready status. Obviously, there is flexibility to meet any operational requirement of the office.

In addition to scheduled operations, the helicopter would be available on-call, weather, maintenance, and personnel considerations permitting, 24 hours a day, seven days a week for emergencies and unscheduled events.

This schedule will allow for most scheduled and some unscheduled maintenance to be completed without restricting the helicopter's availability.


C. Helicopter Types:

The aircraft selected should be capable of carrying a searchlight, forward looking infrared (FLIR), PA system, and various flight and navigation avionics. In addition, the aircraft should have night flying capabilities, be equipped with a hoist, litter, and a Bambi Bucket (water bucket) of adequate size.

Due to El Dorado County having a mean sea level ranging from sea level to 8,500 feet and summer temperatures averaging 90 degrees Fahrenheit, this equates to operating at density altitudes above 10,000 feet. Our aircraft will need to maintain an out of ground effect hover (OGE) to conduct live hoist operations with two deputies on the hoist line and a minimum of two aircrew members in the helicopter. Additionally, the helicopter must conduct Bambi Bucket operations and be capable of lifting 670 pounds of water (smallest Bambi Bucket available) while maintaining an in-ground effect hover (IGE) before transitioning to forward flight. A rough estimate to outfit a typical law enforcement helicopter is 1.6 to 2 million. The higher cost would include a hoist system. Outfitting cost will depend on the selected helicopter.

The Sheriff's Office is currently exploring the following helicopters that meet the requirements set forth; Airbus H125 and Bell 407.

AIRBUS H125



Helicopter	DOC's	Max GW Ext	Max GW Int	Hook Load	Useful Load	HIGE	HOGE	Max Cruise	Max Op. Alt	Range
Airbus H125	\$625	5,225 lbs	4,960 lbs	3,086 lbs	2,429 lbs	23,000 ft	21,250	140 kts	23,000 ft	340 nm



Both helicopters are being used by public safety agencies and will meet the needs of the Sheriff's Office. Additionally, both are readily available on the used market.

It should be noted that DOC, or direct operating cost vary by publisher, but they are all in range of each other and our stated operational cost budget.

D. Hanger Facility:

There are several General Aviation airports located within the county and any one of them could provide an acceptable location to base flight operations. Currently, all the hangers at the Placerville airport are privately owned and the rates for each are negotiated between the owners and the lessors. Airport management estimated a hanger for a helicopter would be over \$1,000 a month. Currently all hangers are rented at the Placerville Airport.

The east end of the Placerville Airport is prepped for construction for new hanger facilities. For a 60' wide, 50' deep and 20' tall hanger, it would be approximately \$120,000 - \$150,000. This includes a simple hanger with hydraulic door. It would cover the concrete pad and construction but no utilities. Currently there are other parties also exploring building a hangar

on the undeveloped area of the airport and we may be able to work with these parties to lessen the expense of bringing utilities to the site.

E. Maintenance:

Maintenance is a constant, on-going, requirement for helicopters. The Federal Air Regulations (FARs) require that helicopters be serviced by a licensed Airframe and Powerplant mechanic. Some components must be replaced on a "time limited" basis rather than "on condition." There are factory authorized aircraft mechanics available on a contract basis to provide required maintenance in the greater Sacramento Valley area and we would be exploring a service contract with such a service. These costs would be part of the yearly operating cost.

Note: When purchasing a used helicopter, maintenance records and flight hours will be factored into the long-term purchase. Service records must be reviewed to ensure all services are up to date and completed by a licensed helicopter mechanic. A helicopter's hours may be approaching a "major service" which could be a significant cost.

F. Insurance:

The Sheriff's Office has reached out to El Dorado County Risk Management, and they have advised EDSO to budget for \$50,000 in additional liability insurance as part of the Helicopter Program. This is subject to change depending on the final selection of the helicopter make and model. This money will be paid for out of the yearly operating cost.

Conclusion

The county is poised for considerable growth in its near future. Multiple housing projects have started or will start in the coming years. Additionally, outdoor recreation activities, and the transient population increase in South Lake Tahoe, year-round will continue to grow. Both factors will increase the population requiring law enforcement services, both criminal and through other services

such as Search and Rescue. The helicopter is a modern, cost-effective tool for providing the highest possible level of service.

Formation of a properly funded Air Support Program will:

- Provide the county with an effective, highly visible community anti-crime program.
- Provide improved drug surveillance, increasing the opportunity for seizures of illegal drugs.
- Reduce response time to emergency and "in-progress calls".
- Provide valuable support to county staff during disasters such as the recent fires.
- Increase criminal apprehension rates.
- Improve safety to deputies investigating criminal activity.
- Facilitate traffic management.
- Reduce the number and duration of pursuits thereby limiting the county's liability exposure and the risk to deputies and innocent third parties.
- Reduce staff-hours spent conducting searches for missing persons and criminal suspects.
- Provide increased SWAT capabilities.
- Facilitate patrol and off-road enforcement in the open areas throughout the county.
- Increase the level of fire protection.
- Enhance community trust in law enforcement.

It is anticipated that a comprehensive community awareness program will take place in conjunction with the helicopter program. This awareness program will inform the community about the Air Support program and reaffirm the county's commitment to maintaining a safe and secure environment for its residents and visitors.

The county has an opportunity to demonstrate its leadership role once again in maintaining a safe community. Augmenting law enforcement with this powerful

technological resource advances the Sheriff's Office toward its goals and is consistent with the General Plan.

It has been demonstrated repeatedly in large and small cities throughout the country that a law enforcement air support program can dramatically increase the safety of deputies working in the streets, the effectiveness of law enforcement response in fighting crime, and consequently, the sense of security and well-being of the community.

With the approval of this innovative program, the county will join with other counties and cities that have recognized the value of law enforcement aviation to ensure the safety and wellbeing of their residents, businesses, and visitors.

