

Introduction

The objective of wildfire management is protecting people, property, and the environment. All wildfire fighting authorities do their best to achieve these goals with the resources available. Nevertheless, improvements are always sought, especially after every devastating wildfire.

One such significant improvement that is the focus of this report regards early wildfire identification and initial attack. Although this report will extensively examine the full range of aerial firefighting resources—their utility, availability, viability, and costs—the primary recommendations will involve developing new and improved processes, integrating them in support of risk-informed decision making, and backing these with the aerial firefighting resources needed for an aggressive initial attack strategy. This has the potential to improve natural resource and community protection, reduce firefighter exposure, and potentially decrease suppression costs by stopping small fires before they can become devastating catastrophic wildfires.

Under the traditional approach to wildfire management, a local dispatch center receives a report of smoke. The dispatch center notifies the jurisdictional authority, which in turn, mobilizes firefighting resources to look for the source of the smoke. Even when there is a distinct column of smoke visible from the ground, countless hours can be spent pinpointing the location. Even more time is spent making an assessment of the fire to develop a suppression strategy.

What if, following notification of the jurisdictional authority, an order was made to launch Colorado's remote sensing fixed wing aircraft? The aircraft would be on site within approximately 30 minutes of launch and would employ thermal imaging sensors to survey the reported area. The fire would be located and mapped, and this information would be loaded in real time to the state's wildfire information management system. Within an hour of the first report of smoke the local incident commander would have access to a map of the fire, ingress and egress paths, fuels involved, fire behavior, values at risk, weather forecast, and other data needed to make informed decisions regarding the appropriate management response.

What if the appropriate management response is full suppression, but the fire is in a remote area with difficult access? What if the local incident commander could call for the state's contracted aviation resources, a helicopter, single engine air tanker, or large air tanker, with much greater confidence in their availability to be promptly over the fire?

What if all this can happen while the fire is small and still manageable? What if we can prevent the next mega fire that would otherwise result in lives lost, property destroyed, precious watershed damaged, and millions of dollars in suppression costs? This is the vision for the Colorado Firefighting Air Corps (CFAC).

Executive Summary

This report constitutes the analysis called for in Senate Bill 13-245. As such, it:

- Provides information on Colorado’s current wildfire structure and resources, with emphasis on aerial firefighting resources;
- Examines the opportunities, challenges and costs associated with various options to augment those resources;
- Presents the case for the most effective use of aerial firefighting resources; and
- Makes recommendations regarding aerial firefighting resources.

Principal Finding:

The success of the Colorado's wildland fire management program depends upon aggressive initial attack and response in order to keep fires that threaten lives, property, or natural resources small.

Recommendation: *To accomplish this, Colorado should:*

- focus attention and efforts on initial attack—the most critical time to generate an informed and effective suppression response is the first few hours of a fire;
- develop the means to ensure that existing suppression resources are being used to their maximum effectiveness while ensuring responder safety; and
- increase the likelihood that a fire is suppressed in the first hours of its existence by providing quick responses with appropriate resources.

Wildfire Information Management System Finding:

Critical information needed for guiding policy, strategy, and decisions regarding the management of wildfire in Colorado are not sufficient or readily available.

Recommendation: *To address this finding, Colorado should:*

- develop and implement a state-wide information management system that provides shared, collaborative, real-time information amongst all participants in Colorado’s wildfire management system as immediate availability of information is critical to ensuring that Colorado’s currently-available resources are most effectively utilized.

Early Detection and Remote Sensing Finding:

Colorado has not developed the capability to actively detect small fires before they grow into large incidents that affect life, property, and resources.

Recommendation: *To address this finding, Colorado should:*

- develop early detection and remote sensing capabilities by securing aircraft equipped with modern fire-detecting sensors that should be operated to actively identify and locate small fires in high-risk wildland and wildland urban interface areas.

Initial Attack Focus Finding:

Colorado does not have the ability to deliver appropriate aviation resources in a timely fashion to support local suppression response to small fires while they are still small.

Recommendation: *To address this finding, Colorado should:*

- contract for four multi-mission rotor-wing aircraft to facilitate the initial attack response in Colorado's rugged and remote locations; and
- increase the number of Single Engine Air Tankers (SEATs) under the operational control of the state from two to four.

Large Fixed-Wing Air Tankers Finding:

A gap exists between the needs of Colorado and the available large air tanker resources provided by the federal government.

Recommendation: *To address this finding, Colorado should:*

- contract for two fixed wing large air tankers; and¹
- monitor the U.S. Forest Service's (USFS) implementation of its plan to significantly augment the current air tanker capability in 3-5 years.

Procurement of large air tankers by means other than contracting is not recommended unless the modernization and augmentation of the federal air tanker fleet does not occur as planned, and Colorado's large air tanker needs cannot be sufficiently met.

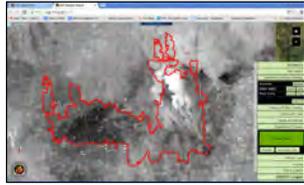
In making this recommendation many options for Large Air Tankers (LATs) were considered, including:

- Acquiring and converting surplus military aircraft through the Federal Excess Personal Property (FEPP) Program (see discussion on page 27)
- Converting donated civilian aircraft for use as air tankers (see discussion on page 30)
- Joint Procurement and Operation of Aircraft Fleet by Western States, through acquisition or contracting (see discussion on page 52)

¹ The contingency, if the State is unable to contract for two qualified large air tankers, is to contract for two helitankers, or a combination of one fixed-wing air tanker and one helitanker.

Summary of Recommendations to Address Findings

The recommended improvements and the estimated annualized costs to implement the improvements (excluding long-term operation and maintenance)² in 2014 are:



Wildfire Information Management System

Procure a state-wide license and provide training
(See page 38) \$100,000



Multi-Mission Fixed Wing Aircraft

Procure two aircraft and operate in 2014
(See page 40) \$11.7 million



Multi-Mission Rotor Wing Aircraft

Contract for four Type III or larger rotor wing
aircraft (See page 46) \$4.7 million



Single Engine Air Tankers (SEATs)

Contract for four exclusive use SEATs
(See page 47) \$3.1 million



Large Fixed-Wing Air Tankers

Contract for two exclusive use large air tankers³
(See page 47) \$11.9 million



Other Direct and Indirect Expenses

Additional insurance, airport fees, hanger leases,
tanker base costs, personnel, supplies and
equipment, etc. \$2.1 million

Total estimated cost for program implementation in 2014: \$33.6 million

² These are estimated annualized costs for the specified improvements based on information provided by potential vendors. A detailed budget request will be submitted as a separate document.

³ The contingency, if the State is unable to contract for two qualified large air tankers, is to contract for two helitankers, or a combination of one fixed-wing air tanker and one helitanker.

Other Recommendations

- Evaluate the benefits, opportunities, costs, and risks associated with implementing an "Agricultural Aircraft-Based Rapid Response Aerial Firefighting Program" for Colorado (see discussion on page 25).
- Explore ways to further incorporate Colorado National Guard rotor-wing assets as a standing wildland firefighting resource for initial or extended attack.
- Explore and implement appropriate opportunities to further incorporate the Colorado Wing of the Civil Air Patrol in the Division's wildfire management program.⁴
- Work to ensure all firefighters are provided the appropriate training, equipment and facilities necessary to successfully and safely meet the increasingly complicated and challenging wildfire and emergency response environment.

The improvements and capabilities recommended by this report will not ensure that Colorado will be free of wildfires, but they will improve our ability to protect people, property, and the environment from the ever-increasing toll that wildfires bring. The recommendations in this report will also likely decrease the overall cost of fire suppression and post-fire recovery.

In addition to the likely decrease in fire suppression costs, opportunities exist to reduce the estimated cost of implementing the improvements and capabilities recommended by this report. These options and opportunities are discussed beginning on page 51.

⁴ This recommendation was added on March 2, 2014. The Colorado Wing of the Civil Air Patrol operates 15, 4 seat Cessna 182s. The COWG squadrons are able to assist in Colorado's wildfire management program by providing aircraft, upon request, for "fire spotter" missions, for aerial surveillance, or to transport firefighters, incident management personnel, supplies or equipment, and other similar missions.