



## Center of Excellence for Advanced Technology Aerial Firefighting

**Background.** A recent GAO report was very critical of the Federal government's (USDA/FS and DOI) initiatives regarding the replacement for the large air tanker fleet, citing multiple needs for assessment of the efficacy of aerial firefighting in general, along with assessing specific aerial platforms prior to any large scale funding decisions. The standup of the Colorado Firefighting Air Corps provides the opportunity to address these challenges while simultaneously providing better firefighting capabilities here in our state. Additionally, the Center of Excellence (COE) for Advanced Technology Aerial Firefighting has the potential to create jobs, tax revenues, and make Colorado Springs the hub for advancement of a global industry.

**Mission Statement.** *To improve protection of the public by enhancing firefighting effectiveness through innovation in the technology, tactics, regional collaboration, and economics of aerial resources.*

**Outline.** The general concept of the Center of Excellence is an integrated laboratory for science-based evaluation of fundamental contributors to aerial firefighting: effectiveness, efficiency, and sustainability. The primary areas of expertise are envisioned as:

- **Technology.** The COE would serve as a research and development incubator for evaluating new and existing technologies for aerial firefighting.
- **Tactics.** The COE would allow veteran firefighters the opportunity to evaluate new and existing technologies for integration into tactical fire scenarios in a variety of settings (night operations, WUI, IA, transition, large fire, etc.).
- **Economics.** Sustainable contracting and value propositions would be explored to assess which technologies and contract vehicles are most advantageous for the firefighter and taxpayer.
- **Military rapid response and integration.** The COE would look at streamlining and synergizing access to and utilization of military aerial firefighting resources.
- **Regional collaboration.** The COE would evaluate and seek the means to bring other Western States into the effort to share the costs and resources of the wildland fire mission.

**Stand Up Requirements.** Unknown at this time, but one concept would have an eight FTE model for Year 1 (Director, administrative assistant, one each fire professional, grant writer, technology integration specialist, economist, military integration specialist, and data analyst). Logistics such as office space and access to vendors and fires need to also be addressed.

**Recommendation.** Include \$500,000 of matching funds for an appropriate community to develop and stand up the Center as a not for profit organization.



## Colorado Springs' Advantages for Hosting the Center of Excellence for Advanced Technology Aerial Firefighting

**Background.** Currently pending legislation will create a Colorado Center of Excellence for Advanced Technology Firefighting (Center of Excellence). Colorado Springs offers several unique assets and qualifications for hosting this vitally important element of the Colorado Firefighting Air Corps.

### Key Points:

- **Central location.** Colorado Springs is located near the geographical center of Colorado, at the base of the Rocky Mountains' Front Range, and on Interstate 25, the state's primary north-south corridor. An hour's drive from both Denver and Pueblo, the city is well-suited to meet the needs of a world-class aerial firefighting Center of Excellence.
- **Controlled access to military airspace and ranges.** Colorado Springs is a proud neighbor of the U.S. Army's Fort Carson and its primary unit, the 4th Infantry Division. The massive Army post consists of 137,403 acres, including a cantonment area (main post) and multiple training ranges. Some of those ranges border the main base, southwest of the city, and others are in Southeast Colorado. These training areas feature a wide variety of terrain and vegetation, from open, flat prairies, lowlands, wetlands and creek drainages to heavily forested mountains and hills. Fort Carson's ranges also provide protected airspace for Army and Air Force air-to-ground training, and would serve as an ideal controlled environment for safely flight-testing unmanned aerial vehicles (drones), and firefighting aircraft, equipment and airborne sensors. No other area in the state combines varied terrain and controlled airspace immediately accessible from government airfields and commercial airports. Such proximity is rare and absolutely priceless for efficiently conducting a full spectrum of flight tests, without having to fly long distances or operating from remote airstrips and incurring travel and per-diem costs. Additionally, Fort Carson has an aviation brigade manned by expert trainers and equipped with modern aircraft, sensors and aviation technology. Under collaborative agreements with the Center of Excellence, these assets could migrate seamlessly into the firefighting arena, when evaluating new COE-developed technologies and tactics.
- **Aviation Infrastructure.** The joint-use Colorado Springs airport (COS) and Petersen Air Force Base complex supports a wide array of commercial, general aviation and military air operations, including firefighting. For example, Petersen AFB is home to the 302 Airlift Squadron, which flies

C-130 Hercules aircraft equipped with the Modular Aerial Firefighting System (MAFFS). The airport has an elevation of approximately 6,200 feet and comprises 7,135 acres, including 200 acres devoted to general aviation operations and 427 acres designated as a business park. The latter features office space that can house the Center of Excellence. Two north-south runways and one crosswind runway routinely accommodate a mix of military, commercial and general aviation air traffic. Thanks to uncongested airspace and an expansive, efficient ground infrastructure that enables short taxi times and immediate takeoffs and landings, COS airport consistently ranks among the nation's lowest in traffic-delay rates. It also has one of the best weather-related closure/cancellation rates. Called the "Banana Belt of Colorado," Colorado Springs routinely experiences weather perfectly suited for flight testing new firefighting technologies and tactics 12 months of the year.

- **Commercial aviation technology.** Colorado Springs is home to many aviation industry and high-technology giants, including Boeing, General Dynamics, Harris Corporation, SAIC, ITT, L-3 Communications, Lockheed Martin, and Northrop Grumman.
- **Educational and military institutions.** Based in Colorado Springs, the aerial firefighting Center of Excellence will have immediate access to the expertise, laboratories and knowledge resident at the University of Colorado-Colorado Springs, Colorado Technical University and the U.S. Air Force Academy. The city's central location also fosters ready collaboration with faculty and students at Colorado State University-Pueblo, the Colorado School of Mines, other CU and CSU campuses, and the National Center for Atmospheric Research. For COE research and development projects related to airborne and space-based sensing, the Center also can draw on military experts and resources at Peterson AFB, Schriever AFB and the National Security Space Institute.
- **Access to subject matter experts.** Colorado Springs has access to some of the world's leading experts on aerial firefighting. Two have been intimately involved in bringing the Colorado Firefighting Air Corps into being—Dr. Tony Kern, former National Aviation Officer for the Forest Service and originator of the COE concept, and Bill Scott, a former flight test engineer and aerospace magazine editor, who served on the U.S. Forest Service Blue Ribbon Panel on Aerial Firefighting in 2002. Additionally, the Pike Interagency Hotshot crew and Pike National Forest's fire management officials are headquartered in Monument, just north of Colorado Springs. Dozens of City and El Paso County personnel also have recent, real-world experience in battling the worst wildfires to ever strike Colorado. These officials remain intimately engaged in after-action studies of the Waldo Canyon and Black Forest fires, which are yielding reams of valuable data. Their findings and data can be incorporated into future COE simulations and research that investigates the potential impacts of advanced aerial firefighting technologies, strategies, tactics and command and control methods, when dealing with emergencies in the wildland-urban interface.
- **Regional collaboration, commitment, and motivation.** No region of the state has suffered more from the devastating effects of wildfire than Colorado Springs. Consequently, the community's determination, commitment and motivation to ensure such catastrophes never occur again, whether here or anywhere else in the state, are unparalleled. Over the past two

years, city, county, state and federal officials, who worked side-by-side, during and after these tragedies, have forged a solid framework for regional cooperation. This collaborative interagency experience is an ideal foundation from which to launch and build a successful, highly effective Center of Excellence.

**Recommendation.** For the reasons listed, Colorado Springs is uniquely suited to host the Center of Excellence for Advanced Technology Aerial Firefighting. The city and extended community stand ready to assist all Colorado citizens, by advancing the knowledge base of aerial firefighting technologies and methods. Capabilities developed at the COE will flow to firefighters around the globe, ensuring Colorado becomes the epicenter of aerial firefighting expertise and technology. We recommend that the COE be established in Colorado Springs, and stand ready to work immediately with Director Cooke and his staff to make an effective, highly professional Center of Excellence a reality.