

**Wildland Firefighting Aircraft Replacement**

**FY2022 Request: \$650,000**  
**Reference No: 54937**

**AP/AL:** Appropriation **Project Type:** Renewal and Replacement  
**Category:** Natural Resources  
**Location:** Statewide **House District:** Statewide (HD 1-40)  
**Impact House District:** Statewide (HD 1-40) **Contact:** Cheri Lowenstein  
**Estimated Project Dates:** 07/01/2021 - 06/30/2026 **Contact Phone:** (907)465-2422

**Brief Summary and Statement of Need:**

The Division of Forestry (DOF) currently owns four fixed wing aircraft with the primary purpose of conducting wildland fire specific missions. This includes a Lead Plane function which directs the activities of the airtankers both verbally and by physically leading the airtankers on the low-level drop runs. DOF owned aircraft also are used as an air attack platform which supervises the process of attacking the wildfire, including fixed wing airtankers, helicopters, and any other aviation resources assigned to the fire. State aircrafts are additionally used for detection, reconnaissance, and fire mapping missions to collect information and prioritize fire response. DOF is requesting funds to replace the N909AK.

<b>Funding:</b>	<u>FY2022</u>	<u>FY2023</u>	<u>FY2024</u>	<u>FY2025</u>	<u>FY2026</u>	<u>FY2027</u>	<u>Total</u>
1004 Gen Fund	\$650,000						\$650,000
1008 G/O Bonds							\$0
<b>Total:</b>	\$650,000	\$0	\$0	\$0	\$0	\$0	\$650,000

<input type="checkbox"/> State Match Required	<input checked="" type="checkbox"/> One-Time Project	<input type="checkbox"/> Phased - new	<input type="checkbox"/> Phased - underway	<input type="checkbox"/> Ongoing
0% = Minimum State Match % Required		<input type="checkbox"/> Amendment	<input type="checkbox"/> Mental Health Bill	

**Operating & Maintenance Costs:**

	<u>Amount</u>	<u>Staff</u>
Project Development:	0	0
Ongoing Operating:	0	0
One-Time Startup:	0	0
<b>Totals:</b>	<b>0</b>	<b>0</b>

**Prior Funding History / Additional Information:**

**Project Description/Justification:**

Aviation resources, both fixed and rotor wing make up an essential element of the Division’s mission and statutory requirement to provide wildland fire management and suppression for the protection of Alaskans’ life, health and safety, infrastructure, and resource values. State owned and maintained fixed wing aircraft are an integral part of the aviation fleet and combined with contracted aircraft, comprise the backbone of the Division of Forestry’s (DOF) aviation firefighting capabilities. DOF airtankers and helicopters are procured through exclusive use contracts in which aircraft, pilots and mechanics are secured for the entirety of a 90-day contract. DOF also uses call when needed (CWN) aircraft which provides a service for a short-term contract although at a higher rate. CWN are available at the discretion of the leasing company and often in short supply as we compete with other industries for use.

The Division currently owns four fixed wing aircraft with the primary purpose of conducting wildland fire specific missions. Wildland fire specific missions include Lead Plane function which directs the activities of the airtankers by both verbal target descriptions and by physically leading the airtankers on the low level drop runs. DOF owned aircraft also are used as an air attack platform which supervises the process of attacking the wildfire from the air, including fixed wing airtankers, helicopters, and any other aviation resources assigned to the fire. State aircraft are additionally used for detection, reconnaissance, and fire mapping missions to collect information and prioritize fire response. Fire missions all require specialized pilot training and carding, specific to the wildland fire industry. The DOF aircraft also provide logistical mission support including the movement of both firefighters and freight to quickly mobilize resources to emerging incidents as well as support of our robust training program which facilitates remote pre-season fire crew training to village crews cross the state. This mission is amplified in the roadless Southwest area from McGrath to Aniak to the Iliamna area. With our base in McGrath, the whole area is totally dependent on air support. This includes smoke jumpers, Helitack, Para cargo, cargo, and general logistical support.

The State of Alaska owned aircraft DOF operates, fly between 500 and 800 hours a year, depending on fire activity. Until the 2020 misfuelling accident, the Divisions aviation program has been accident free for the past nineteen years. That is a huge accomplishment, given the Alaskan flying environment and fire mission we are tasked with. In May of 2020, the Division of Forestry's Shrike Commander was involved in an incident that caused an emergency off runway landing into a shallow pond. The result was a complete loss of the aircraft and injuries to the pilot and firefighters that were being transported. The Office of Risk Management deemed that aircraft unsalvageable and has provided the Division with replacement costs based on fair market value.

DOF has developed a replacement plan with alternatives for the unsalvageable aircraft. Funds available for replacement include \$300K through Risk Management as well as a \$147K CIP that was scheduled for an engine replacement this spring but has been modified to use for the aircraft replacement. Currently, DOF has \$447K available for a replacement aircraft.

The desired aircraft requirements are to meet the mission profile of both tactical and logistical use. This includes an air attack platform and lead plane duties for extended attack fires and augment the turbine Commanders for initial attack use during periods of high fire activity. The aircraft should have the air speed and fuel capabilities to perform detection flights over large geographic areas which results in meeting the performance measure of suppressing our critical and full management fires at 10 acres or less. The requirement for logistics and cargo missions includes the support of remote bases and fires near villages and isolated communities. The ideal aircraft could move small teams of firefighters to forward operating bases on short notice and move firefighting supplies needed during initial attack to airstrips both paved and gravel. The aircraft would have to be instrument capable (IFR) and ideally turbine powered providing for fuel compatibility with the State's other aircraft and greater availability in remote locations at lower fuel cost per gallon. The following aircraft and alternative methods of mission readiness were evaluated and included in the review.

#### Cessna Caravan-

Caravans are IFR capable, have nine passenger seats, carry approximately 2500 lbs, of cargo. Caravans have been in production for 35+ years and are still in production. These are turbine powered and like our turbine Commanders, use JET A fuel, thus giving us compatibility of fuel,

greater availability of fuel in remote locations and lower fuel cost per gallon. It has the speed to substitute for our lead planes and is designed for remote unimproved airstrips (gravel). DOF uses these aircraft extensively every year and has experience with this aircraft. Our State pilots also have extensive training and experience with this aircraft. We could arguably save hundreds of thousands of suppression dollars by acquiring and operating an aircraft of this type. Historically, from 2015-2020, the Division has spent on average, \$350.2K per year just on "Call When Needed" Caravan flight and standby time. That is over \$2.1M for that time alone. Buying a used Caravan 208 in the model year range of 1995/2005 w/ 3000-6000 hours TTAF (total time airframe) would cost approximately \$900K-\$1.1M. This would be our optimal replacement aircraft and provide the greatest value to the State.

**Exclusive Use Contract Option-**

To ensure a full 360 look at our options we included not replacing the Shrike Commander and use an exclusive use contract similar to our helicopter and air tankers. Depending on the mission priority, there are two options. First being a Turbine Commander, similar to the Divisions' current two Commanders. This aircraft would be mission orientated as an Air Attack-Lead Plane with marginal passenger and logistics capability. A 90 day Exclusive Use Contract would cost approximately \$671K, to include daily availability and flight hour cost for 250 hours.

A second aircraft option would be a utility single engine turbine, capable of air attack, cargo and personnel transport. This aircraft, a Cessna Caravan, could not function the same as a Division owned Caravan as the pilot would not be trained or certificated as a Lead Plane pilot. A 90 day exclusive use contract would cost approximately \$528K, to include daily availability and flight hour cost for 250 hours.

The following analysis leads us to recommend purchasing the Shrike Commander.

<b>Aircraft</b>	<b>Initial acquisition cost</b>	<b>Hourly maintenance cost (based on 250 annual flight hours)</b>	<b>Fuel costs / 250 flight hours</b>	<b>Cost per passenger seat mile</b>
Shrike Commander	\$640K	\$416 per hour	\$52.5K	\$208
Cessna Caravan 208	\$1.1M	\$498 per hour	\$33.7K	\$70
Pilatus PC-12	\$2.3M	\$565 per hour	\$42.5K	\$86
TBM 700	\$1.0M	\$642 per hour	\$40K	\$203
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Exclusive Use Contract	\$528K Yr	5 year cost - \$ 2.64M	10 year cost-\$5.28 M	

	<b>COST-- Purchase vs Contract</b>				
	Cessna Caravan 208				
		<b>5yr cost</b>		<b>10yr cost</b>	
<b>Purchase</b>	\$600K (CIP)	\$791K+600K= <b>\$1.39M</b>		\$1.58M+600K= <b>\$2.18M</b>	
<b>Exclusive Use Contract-90 day</b>		<b>\$2.64M</b>		<b>\$5.28M</b>	