Fire Detection/Aerial Reconnaissance Project Aviation Safety Plan
Bridger Teton National Forest/Grand Teton National Park

Mission: Fixed or Rotor Wing	Project Name: Fire Detection/Aerial Reconnaissance	Unit: BTF/GRTE
Anticipated Project Date: May 4, 2018 – May 31, 2019	Start Time: TBD	Ending Time: TBD
Project Plan Prepared by: David A. Gomez	Title: Interagency Aviation Officer	Date: 05/04/2018
Note: Required aviation training and qualifications of personnel are verified annually by the Interagency Aviation Officer and/or applicable IQCS account manager.		
Project Plan Reviewed by: /s/ Nikki Sandhoff	Title: RASM	Date: 5/6/18
Project Plan Reviewed by: /s/ Samuel Ramsay	Title: RAO	Date: 5/04/2018
This Flight is Approved by: [signature]	Title: Forest Supervisor	Date: 5/14/18

Project Description:
Aerial reconnaissance and Fire detection flights primarily occur in a fixed wing aircraft which are utilized to detect fire starts after periods of lightening and moderate-high fire danger and activity. A rotary wing aircraft may be used in special circumstances. The Forest/Park Fire Management and Aviation Officers are responsible for the supervision and approval of fire detection flights. These missions generally occur during the months of May through October and specific routes are chosen considering intelligence from lightening detection maps and FMO consultation. The flight path will be determined by the flight manager in coordination with the aircraft pilot.

Only agency approved aircraft and pilots will be used. A fixed wing flight manager or ATGS will supervise these flights and the aircraft will be accompanied at a minimum by an Aerial Observer (AOBS). In the event a helicopter is used for Fire Detection, a helicopter manager will be assigned to the aircraft. If the helicopter must land at a remote location and the manager not be onboard the pilot will be responsible for the offloading of the passenger(s) and the subsequent preflight briefing and onboarding of passenger(s).

Aircraft will be ordered through Teton Interagency Dispatch Center.

If at any time flights are performed below 500' AGL with the exception of takeoff and landing, ALSE and special use mission requirements will apply.

Attachments: ☒ Map - Aerial hazard map	☐ Other:	
Project Supervisor: TBD from Fire Management	Phone:	Cell:
Flight Manger: Fixed Wing flight Manager, Air Attack, or Helicopter Manager	Phone:	Cell:
Participants:		

Type of Flight: Mission Flight	Desired Aircraft Type: Fixed or rotor wing	Charge Code:
Type Procurement: Exclusive Use or CWN	Method of Payment: FS 122 or OAS 23	Projected Cost:

Vendor: TBD		Phone:	Cell:
Aircraft N#:	Make & Model:	Aircraft Color:	
Pilot Name:		Pilot Carded: ☐ Yes ☐ No	A/C Carded: ☐ Yes ☐ No
Flight Follow: AFF and/or 15 minute radio checks		Request or Flight #:	
Method of Resource Tracking: ☐ Phone ☒ Radio		☒ Prior to Takeoff ☒ Each Stop Enroute ☒ Arrival at Dest.	
Scheduling Dispatch Phone: 307-739-3630		Destination Dispatch Phone:	
FM Receive: **Forest/Park Net**	FM Transmit:	Tones: **Forest/Park Net**	
FM Receive:	FM Transmit:	Tones:	
FM Receive:	FM Transmit:	Tones:	
AM Air to Air: Available unit A/A	AM Unicom:	Other: Available Unit A/G frequency	

Search and Rescue Procedures: Contact Dispatch, Follow the Aviation Mishap Response Guide

Start Location	Latitude	Longitude	Elevation	Runway length & Surface or Helispot Size

TBD				
Destination Location	Latitude	Longitude	Elevation	Runway length & Surface or Helispot Size
TBD				

Passenger Name	Weight	Departure Point	Destination Point
TBD			
Cargo Weight	Cubic Feet	Hazardous Material	Destination
		☐Yes ☐No	
		☐Yes ☐No	
		☐Yes ☐No	

Type of Flight	PPE – the type aircraft and support personnel needed will determine the requirements
☒ Air Ops general/ground personnel	Nomex clothing, hardhat w/chin strap, gloves, leather boots, eye protection, hearing protection, fire extinguisher
☒ Fixed Wing point to point flights	Hearing protection
☒ Fixed Wing mission flights	Nomex clothing, gloves, leather boots, hearing protection
☒ Rotor Wing flights	Flight helmet, Nomex clothing, gloves, leather boots, eye protection, hearing protection, approved secondary restraint harness for doors off flights, PFD for all PAX as required

Justification statement for low-level flights:
Management has determined that these flights are the best method to detect fires across the vast and remote response areas of the Forest and Park in early stages of development in order to determine the appropriate management action.

Special Instructions: A briefing of the unit aerial hazard map will occur prior to project implementation. Known temporary flight restrictions and MTR IR-499 will also be mitigated.

Pilot and flight manager will ensure that weight and balance and/or load calculations are completed. Load must be within limitations and remain within limits considering fuel consumption.

Aircraft Manager must confirm with Dispatch prior to the flight that affected routes' Schedulers contacted for Route Activity

Military Training Route (MTR) Information

MTR	Route Legs-Altitude	Activity	Time	Time Zone
☒	Begins SE of Cody, WY and ends near Palisades Lake, ID. Altitude of the route is from 100 feet AGL to 13,000 feet MSL 1-4 nautical miles either side of centerline. Hours of operation are continuous. Scheduling Activity is through Offutt AFB. Originating activity is through Ellsworth Air Force Base, South Dakota (phone # 605-385-1230) or (on call # 605-431-3025).	☐Hot ☐Cold	Start Stop	☐UTC☐PST
☐		☐Hot ☐Cold	Start Stop	☐UTC☐PST

Job Risk Analysis: Aircraft manager/pilot will review prior to implementation to ensure adequate planning and resource commitment.

Is everything approved with clear instructions, aviation plan signed and reviewed?	☐ Yes	☐ No	☐ NA
Are communications and flight following established, including repeater tones?	☐ Yes	☐ No	☐ NA
Can terrain, altitude, temperature or weather that could have an adverse effect be mitigated?	☐ Yes	☐ No	☐ NA
Are all aerial hazards identified and known to all participants?	☐ Yes	☐ No	☐ NA
Have mitigating measures been taken to avoid conflicts with military or civilian aircraft	☐ Yes	☐ No	☐ NA
Have adequate landing areas been identified and or improved to minimum standards	☐ Yes	☐ No	☐ NA
Are all agency personnel qualified for the mission?	☐ Yes	☐ No	☐ NA
Is the pilot carded and experienced for the mission to be conducted?	☐ Yes	☐ No	☐ NA
Are there enough agency personnel to accomplish the mission safely?	☐ Yes	☐ No	☐ NA
Will adequate briefings be conducted prior to flight to include Pilot, Passengers and Dispatch?	☐ Yes	☐ No	☐ NA
Are all involved aware that the pilot has the final authority, but if any passenger feels uncomfortable, that they can decline the flight without fear of reprisal?	☐ Yes	☐ No	☐ NA
Is the aircraft capable of performing the mission with a margin of safety?	☐ Yes	☐ No	☐ NA
Have manifests of cargo and passengers, load calculations and/or weight & balance completed?	☐ Yes	☐ No	☐ NA
Is the aircraft properly carded?	☐ Yes	☐ No	☐ NA
Do all personnel have the required PPE?	☐ Yes	☐ No	☐ NA
Fuel planning, adequate fuel on board, fuel truck location, availability of commercial fuel?	☐ Yes	☐ No	☐ NA
Remember; maps of areas/sites, handheld radios, cell phones, day/survival packs, sic sacks	☐ Yes	☐ No	☐ NA
Will the mission be conducted at low levels? (Below 500' AGL)	☐ Yes	☐ No	☐ NA
Can the same objective be achieved by flying above 500' AGL?	☐ Yes	☐ No	☐ NA
Are pilot flight and duty times compromised?	☐ Yes	☐ No	☐ NA
Is there an alternative method that would accomplish the mission more safely?	☐ Yes	☐ No	☐ NA

Job Hazard Analysis: Aircraft manager/pilot will review applicable elements with all participants as part of preflight briefing.

Hazard	Hazard Mitigation
MTR's	Practice risk management. Check routes in advance, confirm that Dispatch has made calls
Private aircraft	See and avoid. Transmit in the blind on 122.925 near backcountry airstrips
Airport traffic	Stay in radio contact. Announce intentions, use established patterns
Weather	Use weather advisory. Maintain VFR minimums. Cancel mission if conditions deteriorate
Terrain	Avoid performance related situations, cross terrain at it's lowest point, consider downdrafts
Low level obstacles	Complete a high level recon, no unnecessary low level flight
Unimproved landings	Recon LZ. Download on first load. Stay in radio contact
Doors off helicopter operations	Use approved secondary restraint harness. Remove loose items from cabin
Pilot not familiar with area	Supply hazard maps. Complete high level recon prior to low level work
Noise, rotor wash	Wear ear and eye protection, utilize dust abatement
Internal and external loads	Have trained personnel assigned to the mission, plan around fuel, Hook and equipment checks
Unplanned aircraft events	All personnel equipped with required PPE and trained in crash procedures, maintain flight follow
Hazardous materials	Trained personnel will handle, inform pilot, utilize Hazmat guide w/current exemption
Non aviation personnel	Maintain control, provide through briefings
Communications	Maintain communications at all times, establish backup options, and know alternate frequencies. Take handheld radio along. Call in prior to landing. If radio contact is lost, climb, check tones, if unable to re-establish, return to best suitable landing area and check in
Overload conditions/CG issues	Complete accurate load calculations and/or Weight and Balance
Wintertime operations	Use appropriate clothing for varying altitudes/climatic conditions, utilize winter survival kit
Prop/Rotor hazards	Pilot perform aircraft safety brief, Approach/Depart sensibly after shutdown & prop/rotor stop
Multiple project aircraft	Adequate aerial supervision. Carded managers for each aircraft. Establish and maintain separation, utilize common frequencies communications
Aircraft Fueling	Vendor responsibility. No agency personnel onboard. Aircraft shutdown unless closed circuit, open port in accordance with NFPA 407. Trained personnel will staff extinguisher.

Risk Assessment Matrix

Likelihood	Severity			
	Negligible IV	Marginal III	Critical II	Catastrophic I
Frequent A				
Probable B				High 4
Occasional C			Serious 3	
Remote D		Medium 2		
Improbable E	Low 1			

Severity Scale Definitions

Catastrophic	Results in fatalities and/or loss of the system.
Critical	Severe injury and/or major system damage.
Marginal	Minor injury and/or minor system damage.
Negligible	Less than minor injury and/or less than minor system damage.

Likelihood Scale Definitions

Frequent	Individual Fleet	Likely to occur often. Continuously experienced.
Probable	Individual Fleet	Will occur several times. Will occur often.
Occasional	Individual Fleet	Likely to occur sometime. Will occur several times.
Remote	Individual Fleet	Unlikely to occur, but possible. Unlikely but can reasonably be expected to occur.
Improbable	Individual Fleet	So unlikely, it can be assumed it will not occur. Unlikely to occur, but possible.

Appropriate Management Level for Operational Risk Decisions

Risk Level	Fire	Project
High	Incident Commander or Operations Sections Chief	Line Officer/Manager
Serious	Incident Commander or Operations Sections Chief	Line Officer/Manager
Medium	Air Operations Branch Director	Project Aviation Manager
Low	Base Manager	Helicopter or Flight Manager

RISK ASSESSMENT WORKSHEET

Date: 05/04/2018 **Describe Hazard:**	Probability (A-E)	Effect (I-IV)	Risk Level
1. Lack of mission clarity, command, roles and responsibilities.	C	II	3
2. Weather: poor visibility, high winds, low clouds, thunderstorms	A	II	4
3. Mountain Flying: turbulence, terrain, density altitude	A	I	4
4. Airspace: general aviation, military training routes, mid-air collision	C	I	4
5. Low level flight profile below 500 AGL: low altitude obstructions	D	II	2
6. Pilot fatigue, duty limitations exceeded	D	II	2
7. Inadequate flight supervision	D	II	2
Mitigation Controls:	Probability (A-E)	Effect (I-IV)	Risk Level
1. Brief all participants on the mission and the associated hazards and mitigations.	D	II	2
2. Maintain VFR, continuously monitor conditions, abort mission until more favorable condition, have alternate landing locations	D	II	2
3. Obtain weather briefings, maintain awareness of terrain, complete weight/balance and/or load calculations, abort mission due to weather and high temperatures	D	II	2
4. See and avoid, contact TIDC for MTR activity, check Temporary Flight Restrictions	D	II	2
5. Review aerial hazard map and maintain awareness of terrain and obstacles	E	II	2
6. Pilot and flight manager must ensure that duty hours do not exceed limitations and that flight hours are limited to 8 hours per day.	E	II	2
7. Fire management will ensure a qualified flight manager is assigned to each fire detection mission.	E	II	2

FINAL RISK EFFECT: **LOW** **MEDIUM** **SERIOUS** **HIGH** **(Shade/highlight ONE)**

PROJECT AVIATION SAFETY PLAN BRIEFING

Project Aviation Safety Plan Briefing and applicable elements found in the JHA will be discussed with all participants prior to start of operations.

A copy of this briefing page will be submitted to the Interagency Aviation Officer within 5 days of the completion of this project.

Briefing Leader: _____

Briefing Date: _____ Time: _____ Location: _____

Discussion Items:

___ a. Hazard Analysis (as outlined in plan)

__ b. Safety Air Ops (Ground)

__ c. Safety Air Ops (Flight)

__ d. Military Training Routes

__ e. Flight Following

__ f. Frequencies

__ g. Fueling

__ h. Emergency Evacuation Plan

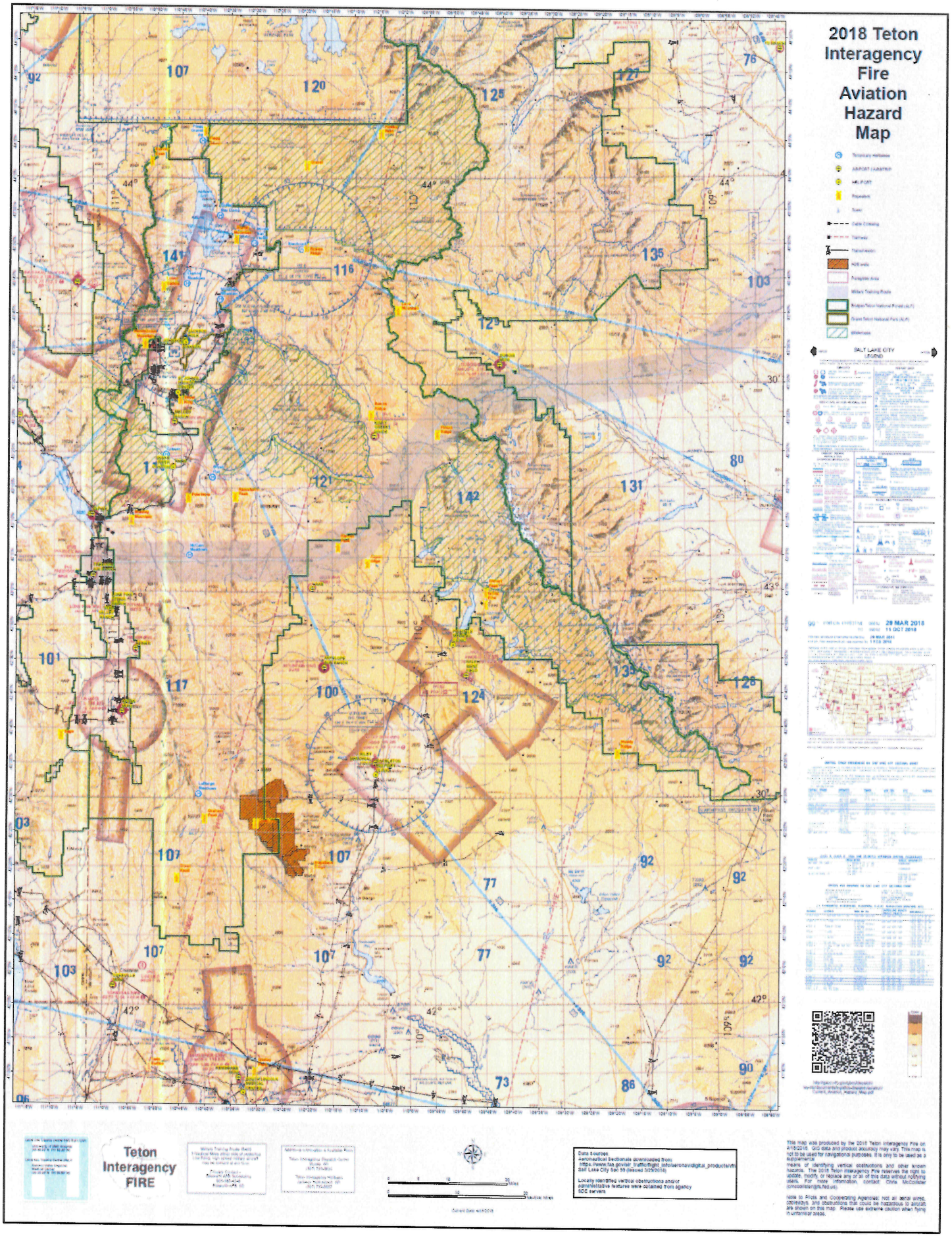
__ i. Authorities

__ j. Weather Considerations

__ k. Other

__ L. other

Attendees Signature and Concurrence:


2018 Teton Interagency Fire Aviation Hazard Map
Teton Interagency FIRE