

PNW PROJECT AVIATION SAFETY PLAN

Version 7-09

Primary/Host Agency: (Identify) <input checked="" type="checkbox"/> USFS Unit: <input type="checkbox"/> BLM Unit:		Interagency Operation: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<input type="checkbox"/> Fire Operation <input checked="" type="checkbox"/> Resource Operation <input type="checkbox"/> Law Enforcement Operation		<input type="checkbox"/> Fixed Wing Operation <input checked="" type="checkbox"/> Helicopter Operation	
Type of Flight	<input type="checkbox"/> Point to point:	<input checked="" type="checkbox"/> Special Use:	<input type="checkbox"/> Reconnaissance: <input checked="" type="checkbox"/> Other:
<input checked="" type="checkbox"/> New Project, full review required		<input type="checkbox"/> Currently approved project/activity, FYI to Regional personnel	
Project Name: 2009 ██████ -Cooperative Stream Enhancement Project		Anticipated Project Date: 09/28/2009	
Project Plan Prepared by: ██████ ██████		Title: ██████ ██████ ██████	Date: 09/23/2009
This Flight is Reviewed and Submitted by:		Title: UAO	Date:
Project Plan Reviewed by:		Title: R6 HOS ████████████████████	Date:
Project Plan Reviewed by:		Title: R6 Light Fixed Wing Prgm Manager, ████████████████████	Date:
Project Plan Reviewed by:		Title: R6 RASM ████████████████████	Date:
Project Plan Reviewed by:		Title: SAM	Date:
Project Plan Reviewed by:		Title: R6 RAO ████████████████████	Date:
Project Plan Approved By:		Title: Line Officer	Date:
PROJECT DESCRIPTION: <p>Project will consist of riparian and stream system enhancement through placement of large wood debris in various sites of stream channels within river systems existing on the ██████ National Forest. The project is being performed in Coordination with the ██████ Watershed Council, ██████ Creek Watershed Council, Confederated Tribes of ██████ Indians, and the ██████ Department of Fish and Wildlife for Forest Capital Partners and ██████ Forest in cooperation with ██████ Forest Management, and as well are facilitating work with ██████ Lumber Company.</p> <p>Objectives are to include the placement of large logs and trees up to 26,500 lbs and 170 feet in length into stream systems in and around the ██████ National Forest. The Project Aviation Safety Plan is created to pertain to those activities planned within the ██████ National Forest, and for the activities of its employees.</p> <p>Stream systems for enhancement work will include north: ██████ and ██████ Creek, ██████ and ██████ Creek; on the south end Upper ██████ and ██████ Creeks.</p> <p>Contract work for the project will be performed by ██████ Helicopters, ██████. The contract itself is being offered through the ██████ Watershed and Drift Creek Watershed councils in conjunction with the ██████ National Forest and the Forest Service Recovery Act Agreement No. 09-CA-11060489-075.</p> <p>Flight following will be monitored through AFF and also through personnel working ground operations from both ██████ Helicopters and the ██████ National Forest.</p>			

ADMINISTRATIVE INFORMATION

Project Supervisor: [REDACTED] (South Forest), [REDACTED] (North Forest)	Phone: [REDACTED]	Cell: [REDACTED]	Sat:
Alternate Supervisor: [REDACTED] (Central Coast Ranger District)	Phone: [REDACTED]	Cell: [REDACTED]	Sat:
Fixed Wing Manager:	Phone:	Cell:	Sat:
Fixed Wing Manager-Special Use:	Phone:	Cell:	Sat:
Fire Heli Manager:	Phone:	Cell:	Sat:
Project Heli Manager: [REDACTED]	Phone: [REDACTED]	Cell: [REDACTED]	Sat:
Unit Aviation Officer: [REDACTED]	Phone: [REDACTED]	Cell: [REDACTED]	Sat:
Charge Code: n/a	AMD Billee Code: n/a	<input type="checkbox"/> OAS-23	<input type="checkbox"/> ABS
		<input type="checkbox"/> CWN#	<input type="checkbox"/> ARA#
Aircraft Availability (Per Day): n/a	Aircraft hourly rate: \$8,500.00	Fixed Wing Standby rate: x hours=	
RON: x persons =	"Minimum" number of hours per day: n/a	Heli-Service Truck Rate: n/a x miles =	
Seeder:	Helitorch:	Batch Truck:	
Extended Pilot:	Extended Driver:	Other:	
Total Per Day:	Number of days x	cost per day = \$	
Projected Total Cost = Mobilization:\$42,000; Total project cost:			
Vendor(s): [REDACTED] Helicopters	Vendor Phone(s): [REDACTED]	Vendor Cell(s):	
Aircraft Information: N #: [REDACTED] N N	Make and Model: [REDACTED]	Color: White with Red Stripe	
Pilot Name(s): TBA	Pilot Phone #(s) TBA	Pilot Cell # TBA	
Aircraft carded: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Pilot carded: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
REMARKS: An Interagency qualified Helicopter Manager (HMGB) will be present on site to coordinate aviation operations with the contractor and ground personnel, to facilitate safe air operations, and to ensure the requirements of this plan are followed. The expectation will be to also inspect [REDACTED] to insure equipment and personnel are carded for aircraft used, aircraft personnel using expected Personal Protective Equipment, and Duty limitations and equipment maintenance protocols are being followed as reflected withing the Federal CWN contract standards.			

RESOURCE TRACKING INFORMATION

Aircraft Home Base Location(s): Aurora	Resource Order # n/a	Flight # n/a	
Aircraft destination: [REDACTED]	<input checked="" type="checkbox"/> Initiate and terminate By Phone:	<input checked="" type="checkbox"/> Radio:	
Ferry Flight Following and Tracking	<input checked="" type="checkbox"/> FAA VFR with 60 minute check in:	<input checked="" type="checkbox"/> FAA IFR:	
Ferry Start Time: 9/27/2009	Stop(s):	Stop(s):	Ferry Ending Time: 9/27/2009
Scheduling Dispatch Phone: [REDACTED]	Contact: Aircraft Desk [REDACTED]		
Destination Dispatch Phone: [REDACTED]	Notes: [REDACTED]		
Dispatch	Contact: [REDACTED]		
Project Flight Following	<input checked="" type="checkbox"/> Local Agency 15 minute:	<input checked="" type="checkbox"/> AFF equipped aircraft:	
Search and Rescue Procedures: (Follow the Northwest Crash, Search and Rescue Guide)			
REMARKS:			

LANDING SITE(S) INFORMATION

Project Start Location: Upper [redacted] [redacted] service (09/28/2009) Lat / Long: [redacted]	Runway Length (if applic):	Elevation: 500'	Surface: Field
Destination Location: Little [redacted] River Service (09/30/2009) Lat / Long: N [redacted]	Runway Length (if applic):	Elevation: 50'	Surface: River Basin
Destination Location: [redacted] and [redacted] Crk Service (10/03/2009) Lat / Long: [redacted]	Runway Length (if applic):	Elevation: 1000"	Surface: Ridge
Ending Location: [redacted] Crk Service (10/07/2009) Lat / Long: [redacted]	Runway Length (if applic):	Elevation: 10'	Surface: Gravel
Destination Location: [redacted] Crk Service (10/10/2009) Lat / Long: [redacted]	Runway Length (if applic):	Elevation: 220'	Surface: Meadow
Ending Location: Lat / Long:	Runway Length (if applic):	Elevation:	Surface:
Helibase or Helispots land ownership: BLM: NPS: FS: [redacted] NF Private: State: Other [redacted]	Location by landmark: Various on and around Forest	Contact(s): [redacted]	Phone #(s): [redacted] ([redacted] Dispatch)
Helibase or Helispot "approval-to-use" from landowner/manager: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Fuel Truck Location(s): At service landing sites.			
REMARKS: Five individual mobiliaztion days are planned for the project.			

HELICOPTER CRASH RESCUE / MEDIVAC PLAN

General Instructions: For suspect or confirmed accident will notify [REDACTED] Dispatch Center who will then follow procedures as described in the Pacific Northwest Region Aircraft Crash and Rescue Guide located in [REDACTED] Dispatch office. The Regional Aviation Officer will determine if an Investigation Team is warranted.

Specific Information and Instructions

(Utilize cell phone if possible. Do not use names over the radio.)

- | | |
|----|---|
| 1. | Nature of the injury(s)/illness. Assist, render first aid, secure site, obtain written statements, keep bystanders out. |
| 2. | Is medical help needed? If available, supply vital signs! |
| 3. | What transportation is needed? Is patient(s) ambulatory? |
| 4. | Location of victim. |
| 5. | Route to be taken (use land marks as guide). |
| 6. | Equipment needed. |
| 7. | Name of contact on site. |
| 8. | Notify appropriate agency line officer. Call [REDACTED] Dispatch [REDACTED]-[REDACTED]-[REDACTED] or Forest Radio Comm Network. |

EMT(S) on project: Call 911

Available Medivac helicopters.

FAA # US Coast Guard	HMGB [REDACTED]
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Litter/rappel/extraction capable Yes

REMARKS: Newport, Oregon Phone: 541-265-5381

FAA # "Reach 8" Corvallis, Oregon	HMGB [REDACTED]
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Litter/rappel/extraction capable No, Medivac Only

REMARKS: [REDACTED]

Nearest medical facility: Samaritain Pacific Comm Hospital	Location Newport, Oregon	
Latitude :44-37-46.4210N	Longitude: 124-03-34.4210W	Contact Freq ONP Traffic 122.8
VOR Vortac 117.1	NM	DEG

Nearest burn center Oregon Burn Center	Location Portland	
Latitude: 45-32-35.4240N	Longitude: :122-40-12.3460W	Contact Freq: PDX Approach Control 118.1, PDX 118.7
VOR	NM:	DEG:

Life Flight: "Reach 8"	Location: Corvallis, Oregon	
Type aircraft: Augusta 109	Phone Number: 541-257-2600	Contact Freq: ODF White Net: 151.3100 Rx Tx

Site conditions

Latitude:	Longitude:	Contact Freq Rx: Tx :
VOR:	NM:	DEG:
Wind speed:	Elevation (msl):	Temperature (F, C)

Terrain factors:	Helispot(s) size/description :
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Proximity of helispot to injury site:	Visibility/sunrise/sunset limitations:
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Flight hazards :

Other aircraft in area (call signs and frequencies):

Ground contact will likely be Project Helicopter Manager:

REMARKS:

PASSENGER INFORMATION

Passengers			
Name:	Weight:	Dept Pt:	Destination Pt:
Name:	Weight:	Dept Pt:	Destination Pt:
Name:	Weight:	Dept Pt:	Destination Pt:
Name:	Weight:	Dept Pt:	Destination Pt:
Name:	Weight:	Dept Pt:	Destination Pt:
Name:	Weight:	Dept Pt:	Destination Pt:
Name:	Weight:	Dept Pt:	Destination Pt:
Name:	Weight:	Dept Pt:	Destination Pt:
Cargo			
Description:	weight:	Hazardous Mat <input type="checkbox"/> Yes: <input type="checkbox"/> No:	Destination:
Description:	weight:	Hazardous Mat <input type="checkbox"/> Yes: <input type="checkbox"/> No:	Destination:
Description:	weight:	Hazardous Mat <input type="checkbox"/> Yes: <input type="checkbox"/> No:	Destination:
Description:	weight:	Hazardous Mat <input type="checkbox"/> Yes: <input type="checkbox"/> No:	Destination:
Description:	weight:	Hazardous Mat <input type="checkbox"/> Yes: <input type="checkbox"/> No:	Destination:
Description:	weight:	Hazardous Mat <input type="checkbox"/> Yes: <input type="checkbox"/> No:	Destination:
REMARKS:			

PPE REQUIREMENTS

Type of flight	Personal Protective Equipment Requirements
<input type="checkbox"/> Fixed wing, point to point	<input type="checkbox"/> Appropriate field attire based on the season, hearing protection recommended
<input type="checkbox"/> Fixed wing, mission flight, 500' above	<input type="checkbox"/> Field attire mandatory, (long natural fiber pants and shirt) PPE recommended
Fixed wing, mission flight, 500' and below (DOI)	<input type="checkbox"/> Full PPE required
<input checked="" type="checkbox"/> All Helicopter operations	<input checked="" type="checkbox"/> Full PPE required
Special PPE Requirements, if any:	
REMARKS: PPE will reflect standard as described with the Federal CWN contract requirement.	

FREQUENCY INFORMATION

Unit Radio Frequencies

NO.	NARROW /WIDE	FREQ. LABEL	RX	TONE	TX	TONE	GEOG. AREA	REMARKS
	Narrow	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	East [REDACTED] NF	[REDACTED]
	Narrow	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	East [REDACTED] NF	[REDACTED]
	Narrow	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	North [REDACTED]	[REDACTED]
	Narrow	[REDACTED] Channel #1	[REDACTED]		[REDACTED]	[REDACTED]	Field Comm.	Tac Freq.
	Narrow	[REDACTED] Channel #2	[REDACTED]		[REDACTED]	[REDACTED]	Field Comm.	Tac Freq.
	Narrow	[REDACTED] Channel #3	[REDACTED]		[REDACTED]	[REDACTED]	Field Comm.	Tac Freq.
	Narrow	[REDACTED] Channel #4	[REDACTED]		[REDACTED]	[REDACTED]	Field Comm.	Tac Freq.

RISK MANAGEMENT

Risk Management: Job Risk Analysis Planning Reminder List (check appropriate boxes)			
Is there an alternative method that would accomplish the mission more safely?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> NA
Is everything approved with clear instructions?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Are communications and flight following established?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Can terrain, altitude, temperature or weather that could have an adverse effect be mitigated?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Will the mission be conducted at low levels? (Below 500' AGL)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Can the same objective be achieved by flying above 500' AGL?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> NA
Are all aerial hazards identified and known to all participants?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Have mitigating measures been taken to avoid conflicts with military or civilian aircraft	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Have adequate landing areas been identified and or improved to minimum standards	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Are all agency personnel qualified for the mission?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Is the pilot carded and experienced for the mission to be conducted?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Are pilot flight and duty times compromised?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> NA
Is there enough agency personnel to accomplish the mission safely?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Will adequate briefings be conducted prior to flight?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> 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?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Is the aircraft capable of performing the mission with a margin of safety	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Is the aircraft properly carded?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Do all personnel have the required PPE	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA

OPERATIONAL RISK MANAGEMENT follows a five-step cyclic process that must be integrated into the decision making process at all levels. The five steps are as follows (see IHOG 3-2, for Risk Management Applied):

1. Identify Hazards
2. Assess Hazards
3. Implement Controls (mitigations)
4. Make Risk Decision
5. Supervise

In keeping with the steps above, a thorough review of the completed System Safety Risk Assessments applicable to the planned mission(s) must be conducted and all hazards mitigated in like or appropriate manner. The hazards and mitigations listed in the Aviation Program Risk Assessments are thorough but incomplete. Each project will likely have additional hazards that must be identified, assessed, and mitigated. Then the risks must be weighed against the expected benefit of performing the operation.

Risk Management Instructions: To conduct a complete Risk Analysis for your project: **1.** Review and utilize the applicable System Safety data available at http://www.fs.fed.us/fire/av_safety/Systems_Safety/av_risk_mgt/index.html ; **2.** Implement the mitigations as listed in the System Safety Assessments; **3.** Conduct your individual analysis of the project following the five steps above and utilizing the Risk Assessment Matrix provided in this document, AND, **4.** Complete and follow the reminder lists below. System Safety risk assessments have developed predetermined values, but, as mentioned above, each project will present its own specific hazards that you must identify, mitigate, and manage.

OPERATIONAL RISK MANAGEMENT WORKSHEET

LIKELIHOOD	SEVERITY			
	Negligible	Marginal	Critical	Catastrophic
Frequent	Medium	Serious	High	High
Probable	Medium	Serious	High	High
Occasional	Low	Medium	Serious	High
Remote	Low	Medium	Medium	Serious
Improbable	Low	Medium	Medium	Medium

-Step 1: Identify and describe the hazards present for this project. **-Step 2:** Assess the **Likelihood** of an occurrence of each hazard and determine the potential **Severity** of the outcome by referring to the definitions at the System Safety Matrix site. Click on this link: http://www.fs.fed.us/fire/av_safety/Systems_Safety/av_risk_mgt/matrix.pdf and then click the link to the **Risk Assessment Matrix**.

Once you have identified the likelihood and severity, determine the **Risk Level** using the matrix above.

-Step 3: Identify the mitigation controls to follow that will reduce the **Likelihood** of a hazard occurrence. ****Remember**, the severity will likely remain the same as first determined. The mitigations generally only affect the likelihood of an occurrence. Once you have established the mitigations and changed the likelihood, determine the post-mitigation **Risk Level**. **-Step 4:** Make decision to perform or not to perform mission/project based upon overall risk level compared to the judged benefit. Decision to conduct operation should be made at appropriate management level. In the case of Serious or High risk operations, the unit Line Officer shall make decision.

PRE-MITIGATION: Identify and describe each hazard:	Likelihood	Severity	Risk Level
1. Ground personnel can be subject to rotor-wash in monitoring log placement activities around structure sites for large wood debris placement activities.	Probable	Critical	High
2. No communications link with helicopter or crew could lead to being caught in a highly vulnerable area if helicopter were to arrive unexpectedly.	Probable	Catastrophic	High
3. Dropped loads, personnel too close to drop site, flights over ground hazards.	Remote	Catastrophic	Serious
4. Inclimate weather, poor visibility.	Frequent	Catastrophic	High
5. Aerial Hazards powerlines, trees, cables, towers, urban interface.	Frequent	Catastrophic	High
6. Aerial Hazards external load operations in mountainous terrain.	Frequent	Catastrophic	High
7. Acceptance of risk as normal, multi-tasking, mission focused attitudes.	Occasional	Critical	Serious

NOTE: Add additional rows if necessary.

POST-MITIGATION: Mitigations to control Risk for each Hazard:	Likelihood	Severity	Risk Level
1. At all site locations maintain awareness of personnel where helicopter will be working to monitor flight path and personal safety zone away from structures being worked. See "attachment 1" for further guidance.	Occasional	Critical	Serious
2. Make sure all personnel have a radio and can closely monitor the activities of the helicopter and remain in communications with others to maintain awareness.	Remote	Catastrophic	Serious
3. Brief pilot and crews on protocols to be in place to guard against consequence of dropped loads. Ensure service landing and worksite locations provide contingency planning for unexpected load release. Ensure flight paths convey ability to guard against damage to property or personnel in unexpected event of load release.	Remote	Catastrophic	Serious
4. Ensure pilots are trained and carded for mission as described within the Federal CWN Contract standards, thorough briefings will take place, performance planning in place for weather conditions present with dual pilots used in operation of aircraft, communications with field personnel to monitor source and structure site weather conditions.	Frequent	Catastrophic	High
5. Conduct thorough briefings. Use preplanning for service site locations, flight routes to stream structure sites and tree source sites, flight paths around residential dwellings, assessment of aviation hazard map known and briefed daily; positive communications link between ground personnel, aircraft,cooperators, and aviation management personnel; close roads and deny access to interested public veiwers.	Frequent	Catastrophic	High
6. Post updated hazard map, communicate with field personnel to relay site information, always perform high level recon before transition to lower altitude, utilize helicopter coordination for all relevant information to be conveyed to pilots.	Frequent	Catastrophic	High
7. Emphasize how competing interests can affect the outcome of events. Convey attitudes that reflect professionalism to maintain control of the job without compriming safety. Our number one priority is for everyone to come home at night.	Improbable	Critical	Serious

Total Risk Assessment Value (The highest risk level identified from the appropriate related System Safety/Operational Risk Management Assessments and the above determined risks shall be applied as the overall total risk value):

Low Medium Serious High

Project Justification Statement:

Step 4: Make Risk Decision – weigh the risk against the benefit of performing the operation. From the determined overall risk, a determination must be made to conduct the operation as planned, apply further controls that may reduce the overall risk further, or not to perform the operation.

Line Officer Initials: _ _

REMARKS: Follow Safety Criteria in "Attachment 1"

Risk Management: Job Hazard Analysis Pre-Operational Reminder List (check appropriate boxes)	
Issue	Mitigating Measure
<input checked="" type="checkbox"/> MTR's and MOA's	<input checked="" type="checkbox"/> Check routes in advance. Practice risk management.
<input checked="" type="checkbox"/> Private aircraft	<input checked="" type="checkbox"/> See and avoid.
<input type="checkbox"/> Airport traffic	<input type="checkbox"/> Stay in radio contact, sterile cockpit
<input checked="" type="checkbox"/> Weather	<input checked="" type="checkbox"/> Use weather advisory. Maintain VFR minimums.
<input checked="" type="checkbox"/> Terrain	<input checked="" type="checkbox"/> Maintain separation. Do not place the aircraft in performance related situations.
<input checked="" type="checkbox"/> Low level obstacles	<input checked="" type="checkbox"/> Complete a high level recon, no unnecessary low level flight operations.

<input type="checkbox"/> Unimproved landings	<input type="checkbox"/> Recon LZ. Download on first load.
<input type="checkbox"/> Doors off heli operations	<input type="checkbox"/> Use secondary restraining harness and protected blade raptor type knife. Remove loose items from cabin.
<input checked="" type="checkbox"/> Pilot not familiar with area	<input checked="" type="checkbox"/> Supply hazard maps. Complete high level recon prior to low level operations.
<input checked="" type="checkbox"/> Noise, rotor wash	<input checked="" type="checkbox"/> Wear ear and eye protection.
<input checked="" type="checkbox"/> Internal and external loads	<input checked="" type="checkbox"/> Have trained personnel assigned to the mission. Follow agency policies.
<input checked="" type="checkbox"/> Unplanned aircraft events	<input checked="" type="checkbox"/> All personnel equipped with PPE, survival gear and trained in crash procedures.
<input checked="" type="checkbox"/> Hazardous materials	<input checked="" type="checkbox"/> Trained personnel will identify, manifest and insure that the pilot is aware.
<input checked="" type="checkbox"/> Non aviation personnel	<input checked="" type="checkbox"/> Maintain control, provide through briefings.
<input checked="" type="checkbox"/> Communications	<input checked="" type="checkbox"/> Maintain communications at all times, establish backup options and acquire alternate frequencies. Take a handheld FM radio on each flight. Call in prior to landing. If radio contact is lost, climb, check tones, etc. If unable to re-establish contact, return to best suitable landing area and check in via landline.
<input checked="" type="checkbox"/> Overload conditions/CG issues	<input checked="" type="checkbox"/> Complete accurate load calculations and or weight and balance.
<input checked="" type="checkbox"/> Winter/cold weather operations	<input checked="" type="checkbox"/> Utilize appropriate clothing for conditions, acquire and maintain a survival kit.
<input checked="" type="checkbox"/> Prop/rotor hazards	<input checked="" type="checkbox"/> Pilot shall provide a safety briefing; approach and departures shall be away from hazards.
<input type="checkbox"/> Multiple aircraft operations	<input type="checkbox"/> Provide adequate aerial supervision. Establish and maintain separation, utilize common frequencies.
<input checked="" type="checkbox"/> Aircraft Refueling	<input checked="" type="checkbox"/> Refueling is the responsibility of the vendor/pilot. Agency personnel shall not be on board. Aircraft shall be shutdown, unless rapid refueling is approved and requested by agency personnel.

REMARKS: Will follow language as described in compliance with federal contract requirements for project aviation.

AIRSPACE MANAGEMENT

MTR	Segment	Activity	Time	Time Zone
<input type="checkbox"/> IR:		<input type="checkbox"/> Hot <input type="checkbox"/> Cold	Start Stop	<input type="checkbox"/> UTC <input type="checkbox"/> PST
<input type="checkbox"/> IR:		<input type="checkbox"/> Hot <input type="checkbox"/> Cold	Start Stop	<input type="checkbox"/> UTC <input type="checkbox"/> PST
<input type="checkbox"/> IR:		<input type="checkbox"/> Hot <input type="checkbox"/> Cold	Start Stop	<input type="checkbox"/> UTC <input type="checkbox"/> PST
<input type="checkbox"/> VR:		<input type="checkbox"/> Hot <input type="checkbox"/> Cold	Start Stop	<input type="checkbox"/> UTC <input type="checkbox"/> PST
<input type="checkbox"/> VR:		<input type="checkbox"/> Hot <input type="checkbox"/> Cold	Start Stop	<input type="checkbox"/> UTC <input type="checkbox"/> PST
<input type="checkbox"/> VR:		<input type="checkbox"/> Hot <input type="checkbox"/> Cold	Start Stop	<input type="checkbox"/> UTC <input type="checkbox"/> PST
<input type="checkbox"/> VR:		<input type="checkbox"/> Hot <input type="checkbox"/> Cold	Start Stop	<input type="checkbox"/> UTC <input type="checkbox"/> PST
MOA information				
<input type="checkbox"/>		<input type="checkbox"/> Hot <input type="checkbox"/> Cold	Start Stop	<input type="checkbox"/> UTC <input type="checkbox"/> PST
<input type="checkbox"/>		<input type="checkbox"/> Hot <input type="checkbox"/> Cold	Start Stop	<input type="checkbox"/> UTC <input type="checkbox"/> PST
Aerial Refueling Routes				
<input type="checkbox"/>		<input type="checkbox"/> Hot <input type="checkbox"/> Cold	Start Stop	<input type="checkbox"/> UTC <input type="checkbox"/> PST
<input type="checkbox"/>		<input type="checkbox"/> Hot <input type="checkbox"/> Cold	Start Stop	<input type="checkbox"/> UTC <input type="checkbox"/> PST
MTR/MOA de-confliction procedures: Resource aviation operations will yield to military operations. If an MTR/MOA becomes active, the land management operation will cease during the time the MTR/MOA is active.				
NOTAM (D) to be developed for the project: <input type="checkbox"/> yes <input checked="" type="checkbox"/> no (Dispatch will contact [REDACTED])				
Dispatch has checked military operations prior to operations <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				
REMARKS: Will call to monitor military flight route training activities daily.				

PROJECT MANAGER PRE-OPERATIONAL CHECKLIST

<input checked="" type="checkbox"/> Approved and signed project plan	<input checked="" type="checkbox"/> Carded pilot	<input checked="" type="checkbox"/> Carded Aircraft
<input checked="" type="checkbox"/> Qualified Manager	<input checked="" type="checkbox"/> Qualified Crewmembers	<input checked="" type="checkbox"/> Hazards Identified
<input checked="" type="checkbox"/> Maps of areas/sites	<input checked="" type="checkbox"/> Notify Dispatch	<input checked="" type="checkbox"/> Weather
<input checked="" type="checkbox"/> MTR's MOA's	<input checked="" type="checkbox"/> Brief Pilot	<input checked="" type="checkbox"/> Brief Passengers
<input checked="" type="checkbox"/> PPE	<input checked="" type="checkbox"/> Load Calc or Weight and Balance	<input checked="" type="checkbox"/> Weights of passengers and equipment
<input checked="" type="checkbox"/> Fuel Planning	<input checked="" type="checkbox"/> Fuel Truck Locations	<input checked="" type="checkbox"/> Permission to land/utilize areas
<input checked="" type="checkbox"/> Radio Frequencies / Tones	<input checked="" type="checkbox"/> Hobbs Start/End	<input checked="" type="checkbox"/> Day/Survival Packs
<input checked="" type="checkbox"/> Handheld Radios	<input type="checkbox"/> Satellite Phones	<input type="checkbox"/> Puke Bags

MAP OF PROJECT SITE:

WEATHER FORECAST:

Will be provided daily during pre-flight and safety briefings.

Attachment 1

Helicopter Design Criteria

General

FS personnel should have experience doing stream restoration with helicopter placement of logs or be with an experienced person at all times.

Provide the aviation safety officer, the helicopter company, and field crews with GPS coordinates and maps for all wood source areas, stream treatment sites, and the number of trees planned for each site.

Provide the helicopter pilots and field crews with site design maps for each stream treatment site.

Forest service will maintain radio contact at all times during project.

Keep all unauthorized personnel away from the helicopter operations.

No smoking within 200 feet of helicopter or 250 feet of refueling procedure or fueling truck.

No Forest Service Employee will be transported at any time in any helicopter, except if medical emergencies permit.

Forest Air Operations Officer will provide attachment of emergency plan in case of accident, search and rescue plan, and spill cleanup plan. All plans will be filed at District, Forest Dispatch and other appropriate personnel.

Stream Treatment Site Selection Criteria

FS personnel are intimately familiar with the stream. They should have multiple visits to the sites so they are familiar with all the locations for wood placement and know what is around each meander bend.

Select sites that can easily be seen by the helicopter pilots. When the canopy is too dense for the pilots to see the creek, fall trees to make the site clearly visible for the pilots.

Select sites that have easy access to safety zones outside the downdraft of the helicopter. If sites do not have easy access, then either drop the site, or create easy access to safety zones or allow the pilot to place trees based on GPS coordinates only.

Identify hazards at each site when selecting placement sites. Potential hazards to be identified include:

- Snags – both conifer and deciduous
- Large Maple trees – from past experience these trees are the ones that most often break off during instream helicopter operations.

- Confined valleys that will tend to focus the downdraft (safety zones will either be farther away or these sites should be pilot placement only)
- Existing debris in stream or cobble/boulder substrates that will increase the amount of time needed to get back and forth to the sites from the safety area.

Stream treatment procedures

Wear protective goggles, hard hat with chin strap, and high visibility vest.

Designate flight paths and safety zones for field crews to prevent FS personnel from getting in the downdraft from the helicopter and to prevent the helicopter flying over the personnel with a load. Stay clear from underneath the helicopter at all times and any material suspended above and within its arc, including standing snag trees and unstable trees.

Keep pilots and personnel associated with pilots aware of who is in the creek and their location at all times.

FS personnel show the helicopter personnel where the stream site is located, the number of pieces planned for the site, and provide site design maps to the ground and helicopter personnel.

Safety zones should be located consistently either upstream or downstream of the treatment site typically in the direction the work is moving. This will facilitate safe movement in the creek by avoiding recently placed logs and unstable canopies.

FS personnel clear to one designated safety zone before the helicopter arrives and remain in the safety zone until the helicopter downdraft has ended.

FS personnel can only inspect stream treatment sites when the helicopter is not present to avoid being in the helicopter downdraft.

Look for and avoid loose limbs in the canopy or other unstable objects when entering an area where the helicopter was working.

*Note: If felling operations are initiated, participants will follow all Regional and Forest protocols that regulate the use of chainsaw equipment. Adequate monitoring measures will be in place including foresight given to contingency planning concerns.