ATTACHMENT B
CONSULTANT BASED UAS MISSION PROCEDURES









JOB HAZARD ANALYSIS FORM – GENERAL SITE VISIT

		Overall Risk Assessment Code (RAC) (Use highest code)				L
Project Name:	**Risk Assessment Code (RAC) Matrix**					
Project Location:	E =Extremely High Risk H = High Risk M =Moderate Risk L =Low Risk		**Probability (P)**			
Project Number:			Frequent (F)	Likely (L)	Occasional (O)	Seldom (S)	Unlikely (U)
Prepared by (Name/Title):	**Severity (S)**	Catastrophic (C)	E	E	H	H	M
Notes: (Field Notes, Review Comments, etc.):		Critical (Cr)	E	H	H	M	L
		Marginal (M)	H	M	M	L	L
		Negligible (N)	M	L	L	L	L

RAC is developed after correctly identifying all hazards and fully implementing all controls.
Step 1: Review each "Hazard" with identified safety "Controls" and determine RAC
- P "Probability" is the likelihood to cause an incident, near miss, or accident.
- S "Severity" is the outcome if an incident, near miss, or accident did occur

Step 2: Identify RAC for each "Hazard" and indicate overall highest RAC at the top of JHA

Job Steps	Hazards	Controls	P	S	RAC
1. Site Visit Preparation	1.1. Various Site Hazards	• Attend tailgate briefing to learn about potential hazards and how to avoid them. • Pay attention to unsafe acts/conditions that are mentioned during the tailgate briefing from the previous day's observations. Share any observations you observed and corrected. • Ensure everyone at the tailgate briefing is aware of all individuals on-site who are trained in First-aid/CPR.	S	M	L
	1.2. Unfamiliarity with PPE requirements	• Make sure you inspect your PPE prior to donning it. • Verify the following PPE is being worn: hard hat, protective toe boots, high visibility vest, safety glasses.	U	Cr	L
	1.3. Inclement Weather Conditions	• Ensure you know what weather to expect for that day. Dress accordingly. • Understand stop work and evacuation procedures; locate shelter prior to beginning work.	S	M	L
	1.4. Defective Equipment	• Verify all equipment to be taken and used in the field is working properly and has batteries charged.	S	M	L

Figure B1 – Job Hazard Analysis Form

UAS Flight Risk Assessment

Bridge/Asset/Site: Wateree River Bridge Asset 8401

Flight Crew: PIC: VO:

		Risk Value								Planning Risk Value	On-Site Risk Value
		1	2	3	4	5	6	7	8		
OPERATION SCENARIO	Mission Type	Photo/Video				Inspection Bridge			Inspection Interior	5	
	Mission Location	Rural			Moderate Populated			Highly Populated	Confined Space	1	
	Airspace Category	G	E Surface	D Surface	C Surface	B Surface	MOA / SFRA	Airport traffic area	DRONE OPERATIONS THAT REQUIRE WAIVERS NO FLY WITHOUT FAA APPROVAL	1	
	Emergency Landing Area	YES						NO		1	
	Detailed Planning	YES						NO		1	
	Mission Over Water	NO						YES		7	
	Day Time Operations	YES						NO		1	
	Over People/Moving Vehicles	ADD 50 Points to flight over non participants								0	0
WEATHER	Cloud Ceiling	>2500FT	2500-1000FT		1000-600FT				<500ft NO FLY	2	
	Visibility	>10 SM	5-10 SM		3-5 SM				<3 SM NO FLY	1	
	Wind (Gusts)	<5 MPH	5-9 MPH	10-15 MPH		15-20 MPH		20-25 MPH	>25 MPH NO FLY	2	
	Temperature	>55°F and <85°F		Between 32° & 55°F or 85° & 95°F		Between 4° & 32°F or 95° & 104°F			<4°F or >104°F NO FLY	3	
	Precipitation	0% - 9%	10% - 19%	20% - 49%	50% - 59%	60% - 69%	70% - 79%	80% - 89%	90%-100%	1	
	Kp	≥1	2	3	4	5	6	7	≤8	2	
PERSONNEL	Flight Crew	PIC+VO+Support	PIC+VO		PIC+New VO				PIC Only NO FLY	2	
	Operator Experience	>10 HRS	8-9 HRS	7-8 HRS	5-6 HRS	3-4 HRS - Practice/Training Only	1-2 HRS - Practice/Training Only		0 HRS, NO FLY	2	
	Crew Rest	10 HRS Rest	8 HRS Rest	7 HRS Rest		6 HRS Rest			<6 HRS Rest NO FLY	1	
	Operator Last Flight	<15 Days	16-30 Days	31-45 Days	46-60 Days	61-75 Days	76-90 Days	>90 Days		1	
	No Observer	Only allowed for Training Flight within UASFM LAANC Enabled sites or Class G Airspace with prior approval - ADD 8 points									
									Risk Value	34	0

Risk Categories Score	Low Risk 17-34	Medium Risk 35 - 49	High Risk 50 - 69	Outside Vendor > 70

Figure B2 – UAS Risk Assessment

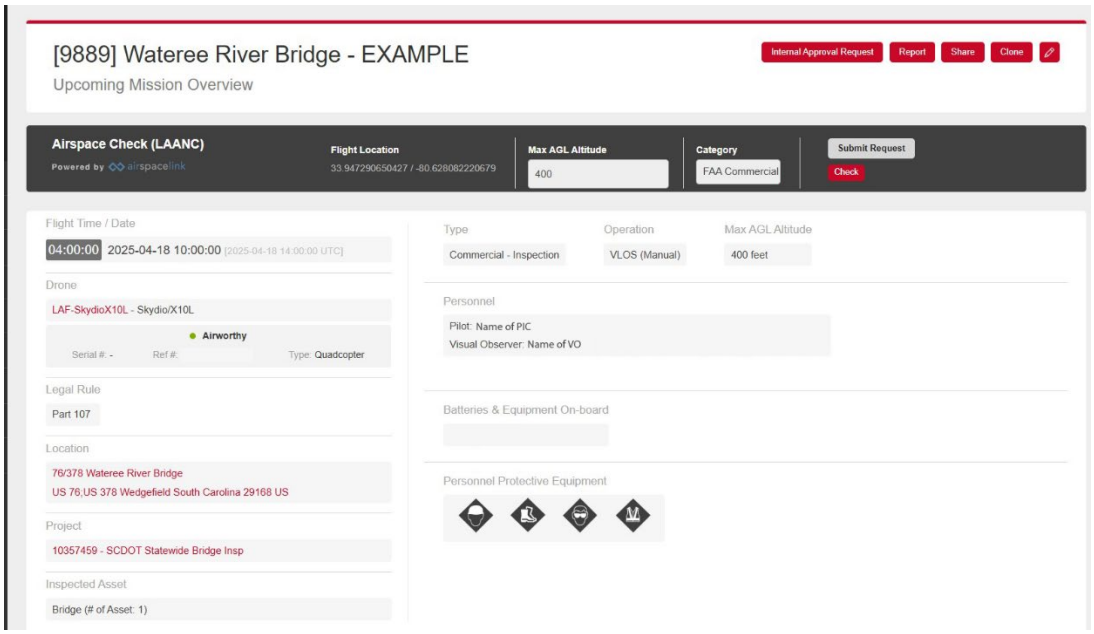


Figure B3 – UAS Flight Planning Software

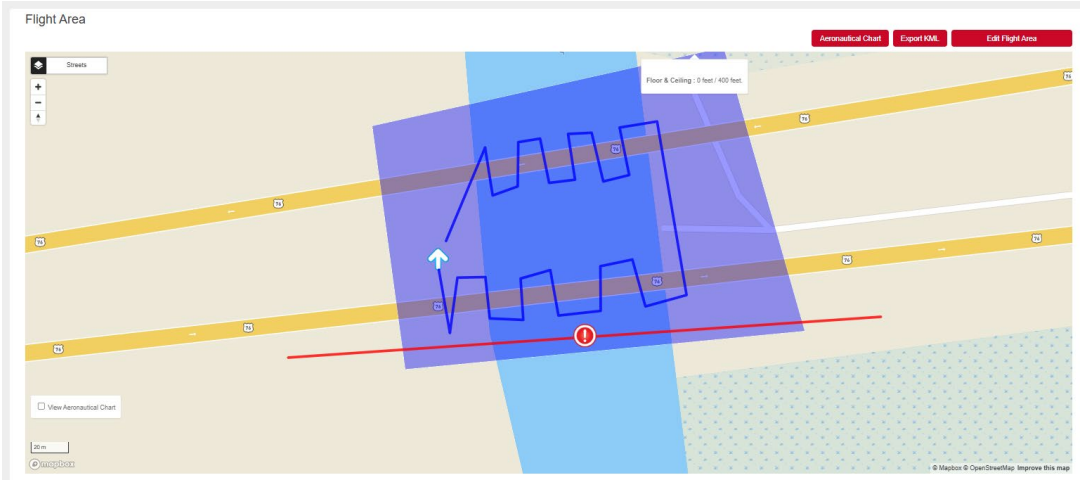
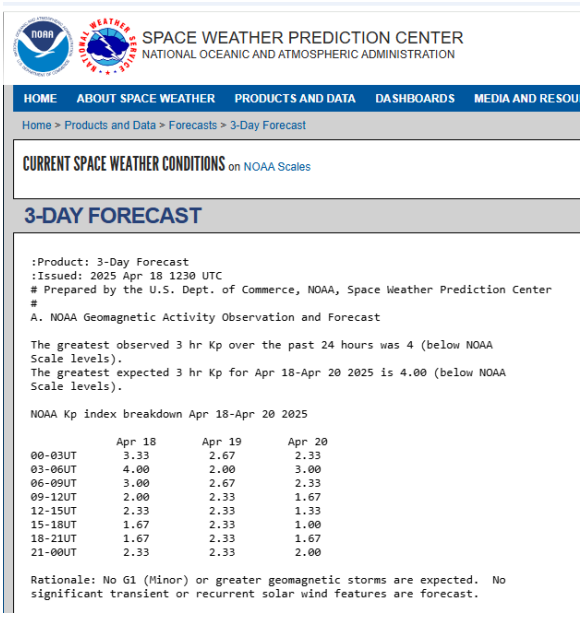


Figure B4 – UAS Operation Map



SPACE WEATHER PREDICTION CENTER
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

HOME ABOUT SPACE WEATHER PRODUCTS AND DATA DASHBOARDS MEDIA AND RESOU

Home > Products and Data > Forecasts > 3-Day Forecast

CURRENT SPACE WEATHER CONDITIONS on NOAA Scales

3-DAY FORECAST

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:Product: 3-Day Forecast
:Issued: 2025 Apr 18 1230 UTC
# Prepared by the U.S. Dept. of Commerce, NOAA, Space Weather Prediction Center
#
A. NOAA Geomagnetic Activity Observation and Forecast

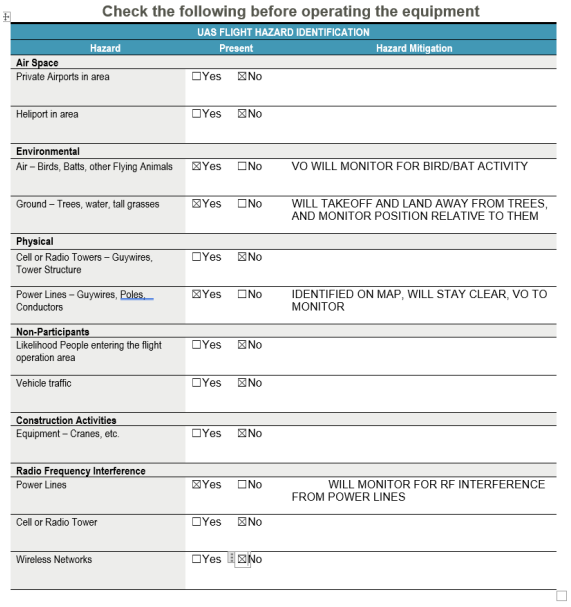
The greatest observed 3 hr Kp over the past 24 hours was 4 (below NOAA
Scale levels).
The greatest expected 3 hr Kp for Apr 18-Apr 20 2025 is 4.00 (below NOAA
Scale levels).

NOAA Kp index breakdown Apr 18-Apr 20 2025

             Apr 18       Apr 19       Apr 20
00-03UT       3.33         2.67         2.33
03-06UT       4.00         2.00         3.00
06-09UT       3.00         2.67         2.33
09-12UT       2.00         2.33         1.67
12-15UT       2.33         2.33         1.33
15-18UT       1.67         2.33         1.00
18-21UT       1.67         2.33         1.67
21-00UT       2.33         2.33         2.00

Rationale: No G1 (Minor) or greater geomagnetic storms are expected.  No
significant transient or recurrent solar wind features are forecast.
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Figure B5 – Weather Report



Check the following before operating the equipment

UAS FLIGHT HAZARD IDENTIFICATION			
Hazard	**Present**		**Hazard Mitigation**
Air Space			
Private Airports in area	☐Yes	☒No	
Heliport in area	☐Yes	☒No	
Environmental			
Air – Birds, Balts, other Flying Animals	☒Yes	☐No	VO WILL MONITOR FOR BIRD/BAT ACTIVITY
Ground – Trees, water, tall grasses	☒Yes	☐No	WILL TAKEOFF AND LAND AWAY FROM TREES, AND MONITOR POSITION RELATIVE TO THEM
Physical			
Cell or Radio Towers – Guywires, Tower Structure	☐Yes	☒No	
Power Lines – Guywires, Poles, Conductors	☒Yes	☐No	IDENTIFIED ON MAP, WILL STAY CLEAR, VO TO MONITOR
Non-Participants			
Likelihood People entering the flight operation area	☐Yes	☒No	
Vehicle traffic	☐Yes	☒No	
Construction Activities			
Equipment – Cranes, etc.	☐Yes	☒No	
Radio Frequency Interference			
Power Lines	☒Yes	☐No	WILL MONITOR FOR RF INTERFERENCE FROM POWER LINES
Cell or Radio Tower	☐Yes	☒No	
Wireless Networks	☐Yes	☒No	

Figure B6 – Hazard Identification

ON-SITE/PRE-FLIGHT		
JHA, Flight Hazard Identification Checklist, and UAS Flight Risk Assessment Updated On Site	☒Yes	☐No
Temporary Flight Restrictions (TFRs)	☒Yes	☐No
Safety Briefing Conducted	☒Yes	☐No
• Intent • Flight Plan • Environmental Concerns • Emergency Procedures • Alternative Landing Location • Communication Protocol • Participant and VO actions and instructions that may be heard from PIC		
Verify Firmware/Updates	☒Yes	☐No
Inspect Drone for Defects • Structure • Moving Parts • Propellers • Motors • Sensors	☒Yes	☐No
Batteries Fully Charged • Radio >60% • UAS >90%	☒Yes	☐No
SD Card Inserted	☒Yes	☐No
Radio Turned On	☒Yes	☐No
Antennae properly oriented on Radio	☒Yes	☐No
Robust Radio Connection to Drone?	☒Yes	☐No
Monitor Brightness Set to High	☒Yes	☐No
UAS Mission Software Started	☒Yes	☐No
Compass calibrated (if flight location is >200mi from previous flight location or when necessary)	☐Yes	☒Not Req.
IMU calibrated (After Firmware Update or when necessary with errors or drift)	☐Yes	☒Not Req.
Verify camera settings	☒Yes	☐No
Check satellite status 12 minimum	☒Yes	☐No
Check home point	☒Yes	☐No

ON-SITE/PRE-FLIGHT Cont'd		
Monitor set to airplane mode	☒Yes	☐No
UAS in safe launch and landing position	☒Yes	☐No
Area clear of people, animals, and any debris affecting flight	☒Yes	☐No
Flight App turned on	☒Yes	☐No
UAS Mission App Menu Settings Return to Home Altitude: Location dependent (30M min) Aircraft Battery: Batteries Paired Low 30% - Critical 15% Smart Return-to-Home - ON Multiple Flight Modes: ON	☒Yes	☐No
Operating Procedures Reviewed	☒Yes	☐No
All crewmembers are asked to conduct a self assessment using the **"I'M SAFE"** checklist. Any concerns must be expressed to the PIC and VO prior to operations.		
Illness Do you feel well today?	☒Yes	☐No
Medication Are you on any medication that would impair you judgment or abilities?	☒Yes	☐No
Stress Are there other factors in your life that could distract you from performing the operation?	☐Yes	☐No
Alcohol Have you consumed any alcohol in the past 12 hours?	☒Yes	☐No
Fatigue Have you had enough sleep and are adequately nourished?	☒Yes	☐No
Emotion Have you recently had any extremely upsetting events?	☒Yes	☐No
Flight Crew Initials		
Operator	PIC	
Visual Observer	VO	

Figure B7 – Pre-Flight Checklist

OPERATING PROCEDURE	
Review Emergency Procedures	
Emergency landing	☒ Check
Loss of GPS	☒ Check
Loss of data link	☒ Check
Disorientation	☒ Check
Takeoff	
Airspace check	☒ Check
Landing area verification	☒ Check
Announce arming	☒ Check
Announce take-off	☒ Check
5 second hover	☒ Check
Look and listen for defects	☒ Check
YAW right and left, pitch forwards and backwards, roll left and right	☒ Check
Test picture – gimbal facing downwards	☒ Check
Operation	
Monitor battery power (Land by 22%)	☒ Check
Keep UAS in line of sight	☒ Check
Monitor signal strength	☒ Check
Landing	
Clear landing area	☒ Check
Announce landing	☒ Check
Land	☒ Check
Disarm aircraft	☒ Check
Flight Crew Initials	
Operator	PIC
Visual Observer	VO

Figure B8 – Operating Procedure Checklist

POST-FLIGHT		
Power down UAS	☒Yes	☐No
Power down controller	☒Yes	☐No
Store batteries or recharge	☒Yes	☐No
Conduct debriefing with Flight Crew	☒Yes	☐No
Verify video and still images (downloaded and acceptable)	☒Yes	☐No
Store and secure UAS to deter theft	☒Yes	☐No
Verify flight logs completed	☒Yes	☐No
Power down display device and remove	☒Yes	☐No
Review inventory log	☒Yes	☐No
Verify all gear is stowed and nothing left on-site	☒Yes	☐No
Flight Crew Initials		
Operator	PIC	
Visual Observer	VO	

Figure B8 – Post flight Checklist