

**U.S. DEPARTMENT OF ENERGY
OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY
NEPA DETERMINATION**



RECIPIENT: NREL

STATE: CO

PROJECT TITLE : NREL-22-016 UAS Flights for CCHRC - Mountain Village and Unalakleet, AK

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
	DE-AC36-08GO28308	NREL-22-016	GO28308

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Policy 451.1), I have made the following determination:

CX, EA, EIS APPENDIX AND NUMBER:

Description:

B3.2 Aviation activities	Aviation activities for survey, monitoring, or security purposes that comply with Federal Aviation Administration regulations.
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Rationale for determination:

The U.S. Department of Energy's (DOE) National Renewable Energy Laboratory (NREL) is proposing to use uncrewed aircraft systems (UAS) to capture high-definition video and photographs at Mountain Village and Unalakleet, Alaska. Flights would occur over multiple days between September and October 2022.

The purpose of the proposed project is to support NREL's Cold Climate Housing Research Center (CCHRC) in constructing affordable housing in both areas. The flights would capture both videos and photos of the construction activity, the challenges of the locations, and the community that CCHRC is serving.

Mountain Village is a remote Alaskan community on the Yukon River and is bounded to the south and west by the Yukon Delta National Wildlife Refuge. The Asa'carsarmiut Tribe, formerly known as the Native Village of Mountain Village, is a federally recognized sovereign nation located in the community. For some flights, the river would be used to approach the village from various angles while avoiding flights directly over the community. Flights over the adjacent landscape would be made to visualize the remote location. Flights may be conducted over the Refuge (no takeoffs or landings would occur on the Refuge); no permit is required. Depending on where the specific housing unit(s) would be constructed, orbital flights around the site could be made. This location is within Class G airspace, and no notifications, authorizations, or permits are required; however, permission to conduct flights on the Tribe's land is currently being requested and flights shall not proceed until permission is granted.

Unalakleet is a remote community located on the Norton Sound of the Bering Sea at the mouth of the Unalakleet River. The Native Village of Unalakleet is a federally recognized tribe. Flights would occur near the construction site and within an approximately 1000-foot radius to capture town elements and geography. The village is in Class E airspace; as such, a FAA Low Altitude Authorization and Notification Capability (LAANC) shall be required for any activity over the village. Additionally, permission to conduct flights over the Tribe's land is currently being requested and flights shall not proceed until permission is granted. Several miles outside of the village, the airspace allows for automatic LAANC authorization to 100 feet above ground level. For some flights, the Unalakleet River delta could be used to show the geography of the area and its remoteness. Depending on the location of the housing unit(s) under construction, orbital flights around the site could be made if granted LAANC approval.

The UAS that would be used is a DOE-owned Parrot ANAFI and all flights would follow an established flight plan. The minimum essential flight crew is the Pilot-in-Command (PIC) and one visual observer. Mission support staff would accompany the flight team as needed to monitor encroachment and ensure safety during longer flights. Road closures would not be necessary.

Flights would consist of ascending and descending vertical maneuvers as well as level flight from ground level to 399 feet above ground level. Specific flight paths for both locations would be determined once on site, and flights would occur when construction teams are absent, or overflight hazards can be mitigated. Flights would occur on both weekdays and weekends during daylight hours. Flights would not be conducted over people, adjacent residential housing, or property unless in an emergency.

All flights would maintain a speed of less than 20 mph and a minimum horizontal or vertical distance of 25 feet from structures. Workers would maintain a minimum of 6 feet of separation from the UAS when it is powered on.

Visual markings for the take-off and landing areas with items such as cones, caution tape, or signage would be implemented. Launch and landing areas would be determined by the PIC prior to each flight.

At Mountain Village, one threatened species, the Wood Bison, could encounter the project. Per the IPaC database, there are no migratory birds or birds of conservation concern expected to occur in the project area. The project area does not include critical habitat.

At Unalakleet, one endangered species, the Short-tailed albatross, and four threatened species, the Polar Bear, Wood Bison, Spectacled Eider, and Steller's Eider, could encounter the project area. Additionally, USFWS Birds of Conservation Concern that could occur in the project area include the Aleutian Tern, Bald Eagle, Black Scoter, Black-legged Kittiwake, Common Eider, Hudsonian Godwit, Lesser Yellowlegs, Long-tailed Duck, Red-breasted Merganser, Red-necked Phalarope, Red-throated Loon, and White-winged Scoter. Of these, four species have a high likelihood of presence in the project area: the Bald Eagle, Black-legged Kittiwake, Long-tailed Duck, and Red-breasted Merganser. Critical habitat for both the Polar Bear and Spectacled Eider has been designated and does occur in the project area.

A visual observer would be present during all flights to ensure there are no collisions with birds that may encounter the project area. If birds or flocks of birds enter the takeoff area prior to deployment of the UAS, the flight would not occur and an alternate location would be selected if needed. If birds or flocks of birds encounter the UAS while in flight, the UAS would be landed at an alternate landing site to avoid collisions. The UAS may emit low levels of noise, but due to the short duration of each flight and distance of wildlife to the UAS, noise impacts are not anticipated. Due to the short duration of flight, the presence of a visual observer before and during each flight, and those flights would occur during daylight hours, DOE has determined there would be no effect to special status species as a result of project activities. No impacts to critical habitat would occur.

Flight activities would be conducted by NREL staff as authorized in accordance with NREL policies, procedures, and safety requirements and under FAA Part 107 regulations. Based on the locations of flights and planned safety measures, no adverse impacts are expected due to the activity.

A risk assessment has been completed for flights at both locations. Operational parameters, hazards, and controls are identified and defined in an Aviation Safety Plan that was prepared in consultation with NREL Environment, Safety, and Health staff and the UAS Steering Committee. The Flight Plan for this project has been submitted and approved by the Golden Field Office's Aviation Manager and Office Director. The Aviation Manager determined that the identified flight risks for the project "have been adequately identified and mitigated to low risk per the DOE Risk Assessment. If flight conditions change or the documented mitigation factors are unable to be implemented the mission will need to be paused so a reevaluation of hazards can occur."

NEPA PROVISION

DOE has made a final NEPA determination.

Include the following condition in the financial assistance agreement:

All required permissions shall be obtained as required prior to conducting flight activity.

Notes:

NREL
Nicole Serio, 9/14/2022

FOR CATEGORICAL EXCLUSION DETERMINATIONS

The proposed action (or the part of the proposal defined in the Rationale above) fits within a class of actions that is listed in Appendix A or B to 10 CFR Part 1021, Subpart D. To fit within the classes of actions listed in 10 CFR Part 1021, Subpart D, Appendix B, a proposal must be one that would not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, or similar requirements of DOE or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators), but the proposal may include categorically excluded waste storage, disposal, recovery, or treatment actions or facilities; (3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally

sensitive resources, including, but not limited to, those listed in paragraph B(4) of 10 CFR Part 1021, Subpart D, Appendix B; (5) involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species, unless the proposed activity would be contained or confined in a manner designed and operated to prevent unauthorized release into the environment and conducted in accordance with applicable requirements, such as those listed in paragraph B(5) of 10 CFR Part 1021, Subpart D, Appendix B.

There are no extraordinary circumstances related to the proposed action that may affect the significance of the environmental effects of the proposal.

The proposed action has not been segmented to meet the definition of a categorical exclusion. This proposal is not connected to other actions with potentially significant impacts (40 CFR 1508.25(a)(1)), is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1508.27(b)(7)), and is not precluded by 40 CFR 1506.1 or 10 CFR 1021.211 concerning limitations on actions during preparation of an environmental impact statement.

The proposed action is categorically excluded from further NEPA review.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:  **Electronically Signed By: Casey Strickland** Date: 9/14/2022
NEPA Compliance Officer

FIELD OFFICE MANAGER DETERMINATION

- Field Office Manager review not required
- Field Office Manager review required

BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :

Field Office Manager's Signature: _____ Date: _____
Field Office Manager