

**DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION**

**ADOPTION OF MISSILE DEFENSE AGENCY ENVIRONMENTAL ASSESSMENT
FOR LONG RANGE DISCRIMINATION RADAR (LRDR) PERFORMANCE TESTING,
CLEAR AIR FORCE STATION, ALASKA (CAFS)**

And

**FINDING OF NO SIGNIFICANT IMPACT AND RECORD OF DECISION FOR
TEMPORARY FLIGHT RESTRICTIONS IN THE VICINITY OF CAFS FOR LRDR
PERFORMANCE TESTING**

August 2020

INTRODUCTION

The Missile Defense Agency (MDA) prepared a Final Environmental Assessment (Final EA), *Long Range Discrimination Radar Performance Testing, Clear Air Force Station, Alaska*, to evaluate the potential environmental impacts associated with conducting time-constrained performance testing and associated activities for the Long Range Discrimination Radar (LRDR) located at Clear Air Force Station (CAFS), Alaska. The Proposed Action analyzed in the Final EA includes: (1) MDA’s proposal to conduct testing of the LRDR’s capabilities and functions to verify that it functions according to design requirements and meets operational needs (“performance testing”); and (2) the FAA’s proposal to issue temporary flight restrictions (TFRs), to implement Special Security Instructions under Title 14 of the Code of Regulations (CFR) Section (§) 99.7, in areas where the performance testing would cause high-intensity radiated fields (HIRF) levels to exceed FAA certification standards for aircraft electrical and electronic systems. (The latter proposal is referred to in this document as the FAA’s Proposed Action.)

As the lead agency, the MDA prepared the Final EA in accordance with the National Environmental Policy Act (NEPA). The MDA invited the Federal Aviation Administration (FAA) to participate as a cooperating agency based on FAA’s jurisdiction by law as it must approve the establishment of the TFRs. As a cooperating agency, the FAA coordinated closely with the MDA, and actively participated in the preparation of the Final EA.

The Final EA was provided for public review from May 4, 2020, to June 2, 2020, and three comments were received. The potential environmental impacts of the alternatives are fully analyzed in the Final EA. A summary of the public involvement and agency coordination is contained in the Final EA.

MDA and the Department of the Air Force (DAF) issued a joint Finding of No Significant Impact (FONSI) on July 24, 2020.

In accordance with FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, and regulations and guidance of the Council on Environmental Quality, the FAA has conducted an independent evaluation and analysis of the MDA’s Final EA and adopts it for purposes of making its decision regarding the FAA’s Proposed Action. As discussed below, based on the information in the Final EA, the FAA has determined that its Proposed Action would not have a significant effect on the human environment.

THE FAA’S PROPOSED ACTION

The FAA’s Proposed Action includes: (1) the implementation of two TFRs, the areas and hours of which are described in **Table 1** below; and (2) the rerouting of instrument flight rules (IFR) flights around the TFRs, which would be in effect for 12 to 18 months. The LRDR performance testing would occur for 16 hours a day (specific times to vary by time of year). During the testing hours, the TFR in Zone 1 would be continuous, and the TFR in Zone 2 would be non-continuous, active for two hours a day (Tuesdays, Thursdays, and Saturdays, from 2:00 am to 4:00 am local Alaska time).

Table 1. Areas and Hours of Proposed TFRs.

Airspace Zone	Boundary Description	Base Altitude	Ceiling Altitude	Designated Time^a
Zone 1 (Continuous)	Within an area defined as 64° 20’ 13” N., 149° 13’ 12” W.; to 64° 17’ 20” N., 149° 11’ 25” W. (ENN 169018.4); to 64° 14’ 31” N., 149° 13’ 43” W.; then clockwise on a 3 NM arc centered on 64° 17’ 20” N., 149° 11’ 25” W.; to the point of origin (1,000 feet MSL to 1,599 feet MSL); excluding that portion wholly contained in R-2206 when active.	400 feet AGL (1,000 feet MSL)	999 feet AGL (1,599 feet MSL)	Daily; 4 p.m. - 7:59 a.m. AKDT/AKST (October 1 to April 30) and 8 p.m. - 11:59 a.m.
	Within an area defined as 64° 19’ 27” N., 149° 20’ 22” W.; then clockwise on a 4 NM arc centered on 64° 20’ 22” N., 149° 11’ 25” W.; to 64° 23’ 56” N., 149° 15’ 30” W.; 64° 17’ 20” N., 149° 11’ 25” W.; to 64° 14’ 10” N., 149° 14’ 01” W.; then clockwise on a 3 NM arc centered on 64° 16’ 55” N., 149° 16’ 41” W.; to the point of origin (1,600 feet MSL to FL320); excluding that portion wholly contained in R-2206 when active.	1,000 feet AGL (1,600 feet MSL)	32,000 feet MSL	AKDT (May 1 to September 30)
	Within an area defined as 64° 23’ 56” N., 149° 15’ 30” W.; then clockwise on a 4 NM arc centered on 64° 20’ 22” N., 149° 11’ 25” W.; to 64° 19’ 29” N., 149° 02’ 27” W.; to 64° 17’ 20” N., 149° 11’ 25” W.; to the point of origin (2,100 feet MSL to FL 320); excluding an area defined as 64° 22’ 07” N., 149° 03’ 09” W.; then clockwise on a 4 NM arc centered on 64° 20’ 22” N., 149° 11’ 25” W. to 64° 19’ 29” N., 149° 02’	1,500 feet AGL (2,100 feet MSL)	32,000 feet MSL	

Airspace Zone	Boundary Description	Base Altitude	Ceiling Altitude	Designated Time^a
	27" W. to 64° 19' 19" N., 149° 03' 07" W. to 64° 19' 36" N., 149° 03' 18" W. to 64° 20' 49" N., 149° 03' 44" W. to 64° 21' 42" N., 149° 03' 37" W. to the point of origin (2,100 feet MSL to 3,200 feet MSL); excluding that portion wholly contained in R-2206 when active.			
Zone 2 (Non-continuous)	Within an area defined as 64° 20' 13" N., 149° 13' 12" W.; then clockwise on a 3 NM arc centered on 64° 17' 20" N., 149° 11' 25" W.; to 64° 18' 47" N., 149° 05' 23" W.; to 64° 17' 20" N., 149° 11' 25" W.; to point of origin (1,000 feet MSL to 1,599 feet MSL); excluding that portion wholly contained in R-2206 when active.	400 feet AGL (1,000 feet MSL)	999 feet AGL (1,599 feet MSL)	Tuesday, Thursday, Saturday; 2 a.m. - 4 a.m. AKDT/AKST
	Within an area defined as 64° 23' 56" N., 149° 15' 30" W.; then clockwise on a 4 NM arc centered on 64° 20' 22" N., 149° 11' 25" W.; to 64° 19' 29" N., 149° 02' 27" W.; to 64° 17' 20" N., 149° 11' 25" W.; to point of origin (1,600 feet MSL to 2,099 feet MSL); excluding that portion wholly contained in R-2206 when active.	1,000 feet AGL (1,600 feet MSL)	1,499 feet AGL (2,099 feet MSL)	
	Within an area defined as 64° 22' 07" N., 149° 03' 09" W.; then clockwise on a 4 NM arc centered on 64° 20' 22" N., 149° 11' 25" W.; to 64° 19' 30" N., 149° 02' 40" W.; to 64° 19' 19" N., 149° 03' 07" W.; to 64° 19' 36" N., 149° 03' 08" W.; to 64° 20' 49" N., 149° 03' 44" W. to 64° 21' 42" N., 149° 03' 37" W.; to the point of origin (2,100 feet MSL to 3,200 feet MSL); excluding that portion wholly contained in R-2206 when active.	1,500 feet AGL (2,100 feet MSL)	3,200 feet MSL	

During the hours of the TFRs, the following would apply:

- The existing IFR arrival and departure procedures at Healy River Airport, and emergency aircraft and medical evacuation flights into and out of Clear Airport, would be available through processes defined in a Letter of Agreement between MDA, CAFS, and the FAA.
- The FAA would provide notice (via Notices to Airmen [NOTAMs]) of: (1) the unavailability of affected approach procedures at Ted Stevens Anchorage International Airport (ANC); and (2) the unavailability of affected portions of airways V-436 and J-125.

PURPOSE AND NEED

The purpose of the FAA's Proposed Action is to accommodate MDA's performance testing of the LRDR. The FAA's Proposed Action is needed to protect aviation from the hazard posed by the HIRF generated during the testing.

ALTERNATIVES

In addition to the Proposed Action (described above), the Final EA also includes the No-Action Alternative. Under this alternative, time-constrained performance testing of the LRDR capabilities and functions would not occur within the timeframe required to meet operational requirements, and MDA would not be able to verify that the LRDR functions according to design requirements and meets operational need. MDA would only be able to test the LRDR in such a way that would contain HIRF within the existing R-2206. Therefore, no additional FAA action would be necessary to protect aviation from the HIRF. MDA would not meet the congressional mandate to deploy LRDR to protect the U.S. against long-range missile threats by December 31, 2020¹, because verification of the LRDR's capabilities would be incomplete. The No-Action Alternative would not satisfy the purpose or need for MDA's performance testing of the LRDR.

When developing the Proposed Action, MDA, DAF, and FAA considered temporarily restricting airspace near CAFS to exclude aircraft from operating within additional different proposed segments of airspace (i.e., segments in addition to Zone 1 and Zone 2) during a set 16-hour period that would be pre-coordinated with the Anchorage Air Route Traffic Control Center (ARTCC). For example, each month, one or more segments would be restricted and the next month a different set of segments would be restricted. The volume of airspace restricted would continue to change during the 12- to 18-month performance testing phase. Alternatively, MDA, DAF, and the FAA considered varying the times of day the airspace restriction would be in effect, which also would require pre-coordination with the Anchorage ARTCC. These alternatives were eliminated from further consideration and analysis due to concerns that the variable exclusion dimensions and times would lead to confusion and create safety issues in the aviation community, and would further increase the Anchorage ARTCC's workload.

ENVIRONMENTAL IMPACTS

In accordance with FAA Order 1050.1F, the FAA has conducted an independent evaluation of the Final EA.

Impact Categories

The following summarizes the results of FAA's independent evaluation of the information and analysis in the Final EA regarding the potential environmental impacts of the FAA's Proposed Action.

¹ A work delay at CAFS has impacted the deployment date for the LRDR. A new date has not been determined.

Air Quality

Potential effects of the FAA’s Proposed Action on air quality are addressed in Section 3.2 of the Final EA. FAA Order 1050.1F, Exhibit 4-1, states the FAA’s significance threshold for air quality: “The action would cause pollutant concentrations to exceed one or more of the National Ambient Air Quality Standards (NAAQS), as established by the Environmental Protection Agency under the Clean Air Act for any of the time periods analyzed, or to increase the frequency or severity of any such existing violations.” The Environmental Protection Agency has established NAAQS for six criteria pollutants: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM-10 and PM-2.5), and sulfur dioxide (SO₂).

The Air Quality region of influence (ROI) for the Proposed Action includes portions of the following areas in Alaska: Denali, Fairbanks North Star Borough, Yukon-Koyukuk Census Area, Denali Borough, Matanuska-Susitna Borough, and Municipality of Anchorage.

As of January 31, 2020, the Denali Borough has been designated as an attainment area by the USEPA and Alaska for all criteria pollutants (ADEC 1983, 40 CFR § 81.302). As a result, the General Conformity rule is not applicable to this attainment area.

Criteria pollutant emissions from aircraft flying above 3,000 feet AGL (default mixing zone height) are not counted in an air quality analysis per USEPA procedures because of the default height above which pollutant chemical reactions do not occur.

Detoured and rerouted flights would result in slightly increased flight times that would generate a slight increase in criteria pollutants. These emissions would be temporary over 12 to 18 months during the performance testing. **Table 2** below (based on Table 3-4 in the Final EA) summarizes the estimated increase in emissions of criteria pollutants from rerouted and detoured aircraft flights.

Table 2. Estimated Annual Air Emissions from Aircraft Rerouting and Detours during LRDR Performance Testing

	NO _x (tpy ^a)	VOCs (tpy ^a)	CO (tpy ^a)	SO _x (tpy ^a)	PM10 (tpy ^a)	PM2.5 (tpy ^a)
Additional Annual Reroute Emissions	0.06	0.02	0.46	<0.01	<0.01	<0.01
General Conformity Thresholds	100	100	100	100	100	100

^a Tons per year.

The estimated annual air emissions from the Proposed Action can be compared to the highest General Conformity 100 tpy *de minimis* level. Annual emissions of all criteria pollutants would be below the 100 tpy threshold. Therefore, the Proposed Action would not result in a significant impact on air quality. In addition, the Proposed Action would not have an adverse impact to air quality at Denali National Park and Preserve due to the minimal increase in air emissions and far distance from the park.

Based on the above, the FAA's Proposed Action would have no significant impacts on air quality when compared with the No Action alternative.

Biological Resources (including fish, wildlife, and plants)

The potential effects of the FAA's Proposed Action on biological resources are addressed in Section 3.3 of the Final EA. FAA Order 1050.1F, Exhibit 4-1, states the FAA's significance threshold for Biological Resources (including fish, wildlife, and plants): "The U.S. Fish and Wildlife Service or the National Marine Fisheries Service determines that the action would be likely to jeopardize the continued existence of a federally listed threatened or endangered species, or would result in the destruction or adverse modification of federally designated critical habitat."

The rerouting and detours in aircraft flight paths resulting from the FAA's Proposed Action would have no effect on biological resources within the ROI beyond existing conditions. These changes would not generate an increase in aircraft operations above existing frequencies. Therefore, the potential for aircraft to strike birds and other wildlife in the air would remain the same. In addition, the FAA's Proposed Action does not include any ground disturbance. Therefore, the FAA's Proposed Action would not result in significant impacts on biological resources when compared to the No Action Alternative.

Coastal Resources

Alaska does not have a federally approved coastal management program or defined coastal zones, therefore this environmental impact category is not relevant to FAA's Proposed Action.

Climate

The potential effects of the FAA's Proposed Action on climate are addressed in Section 3.2 of the Final EA. As recognized in the FAA's NEPA procedures, there are no significance thresholds for aviation GHG emissions, and it is not currently useful for the NEPA analysis to attempt to link specific climate impacts to a proposed action or alternative given the small percentage of emissions aviation projects contribute.²

The Climate ROI is the same as the Air Quality ROI for the Proposed Action. It includes portions of the following areas in Alaska: Denali, Fairbanks North Star Borough, Yukon-Koyukuk Census Area, Denali Borough, Matanuska-Susitna Borough, and Municipality of Anchorage.

The FAA's Proposed Action would result in the rerouting and detouring of aircraft flights during LRDR performance testing. Detoured and rerouted flights would result in slightly increased flight times that would generate a slight increase in GHGs from increased fuel use. These emissions would be temporary over 12 to 18 months during the performance testing.

The analysis documented in the Final EA shows that the FAA's Proposed Action would result in additional emissions of approximately 6,422 tpy of CO₂e. By comparison, this amount of CO₂e

² 1050.1F Desk Reference, Section 3.1.1 (FAA, 2020).

is approximately the GHG footprint of 672 homes' energy use for one year. As such, this annual emission of GHGs would not be expected to significantly increase the rate of climate change.

Based on its independent evaluation of the information and analysis in the Final EA, the FAA has determined that its Proposed Action would not result in significant impacts on Climate because it would introduce no more than minimal amounts of GHGs as compared to the No Action Alternative.

Department of Transportation Act, Section 4(f)

Section 4(f) of the U.S. Department of Transportation Act of 1966 (now codified at 49 USC § 303) provides that the Secretary of Transportation may approve a transportation project that requires the use of any publicly owned land from a public park, recreation area, or wildlife or waterfowl refuge of national, state, or local significance; or land from any publicly or privately owned historic site of national, state, or local significance, only if there is no feasible and prudent alternative to the use of such land and the program or project includes all possible planning to minimize harm resulting from the use. Because the Proposed Action is not a transportation project, Section 4(f) is not applicable.

Farmlands

Because no prime farmland and other important farmlands would be affected by the Proposed Action, this environmental impact category is not relevant to FAA's Proposed Action.

Historical, Architectural, Archeological, and Cultural Resources

The FAA impact category of Historical, Architectural, Archeological, and Cultural Resources is addressed in the Cultural Resources section (Section 3.4) of the Final EA. The National Historic Preservation Act (NHPA) Section 106 (Section 106) regulations direct federal agencies to make reasonable and good faith efforts to identify historic properties in regards to a proposed action (36 CFR § 800.4(b)(1)). Federal agencies are to take into account the nature and extent of potential effects on historic properties, and the likely nature and location of historic properties within areas that may be affected. Compliance with Section 106 requires consultation with the State Historic Preservation Officer (SHPO) and/or the Tribal Historic Preservation Officer (THPO) if there is a potential adverse effect to historic properties within the Area of Potential Effect (APE) that are on or eligible for listing on the NRHP.

The Alaska Heritage Resources Survey database identified 907 documented cultural resources within the APE including historic age and prehistoric-era resources³. Of these resources, 649 have not been evaluated for their NRHP eligibility potential, 150 have been determined not eligible for listing on the NRHP, 86 have either been determined eligible for listing on the NRHP or are contributing properties to an eligible historic district, 21 historic properties have been

³ The AHRS database also lists four paleontological sites within the APE. These resources are excluded from further discussion because paleontological sites are not cultural resources.

listed in the NRHP (including one National Historic Landmark), and one had its NRHP nomination closed.

The FAA's Proposed Action would result in changes to aircraft flight paths during LRDR performance testing. Rerouted and detoured flights could result in slight changes to noise, but as discussed below under "Noise and Noise-Compatible Land Use," the Proposed Action would not result in significant or reportable increases in aircraft noise. No construction or other ground disturbing activities are part of the FAA's Proposed Action.

Consultation with federally recognized Native American representatives was undertaken to identify land, structures, or resources potentially of concern related to the Proposed Action. Outreach consisted of written correspondence mailed to tribal contacts on March 30, 2020. There have been no responses or concerns raised by any tribes regarding the Proposed Action, affected or proposed airspaces, or sacred sites or other cultural resources-related concerns.

In accordance with NHPA requirements, the USAF initiated consultation under Section 106 of the NHPA with the Alaska SHPO on the Proposed Action with a letter dated March 31, 2020 that identified the undertaking, APE, and the USAF's finding of "no historic properties affected." The Alaska SHPO concurred with the "no historic properties affected" finding via email on April 28, 2020. Copies of the Section 106 consultation letters and additional correspondence are located in Appendix C of the Final EA.

Therefore, the FAA has determined that its Proposed Action would not result in significant impacts on historical, architectural, archaeological or cultural resources when compared to the No Action alternative.

Land Use

The potential effects of the FAA's Proposed Action on land use are discussed in Section 3.7 of the Final EA. The FAA has not established a significance threshold for land use. The determination that significant impacts exist usually depends on whether the Proposed Action would result in other impacts exceeding thresholds of significance which have land use ramifications.

The ROI for land use includes CAFS, the land beneath the TFRs, and the airspace wherein flights would be rerouted/detoured during LRDR performance testing. CAFS consists of 11,438 acres in the Denali Borough of Alaska, approximately 350 acres of which is developed. CAFS is bordered to the east by the George Parks Highway (Alaska State Highway 3), to the north by the community of Anderson, and to the west by the Nenana River. The Alaska Mountain Range is located to the south, and Denali National Park is approximately 30 miles to the south of CAFS. Aside from the community of Anderson and unincorporated community of Clear in the immediate vicinity, CAFS is surrounded by public lands.

The community of Anderson, Alaska, is the nearest residential community to CAFS, approximately four miles to the north, and had a population of 137 people in 2018. The unincorporated community of Clear, Alaska, is located approximately three miles to the south.

These two communities are home to mainly CAFS military employees and their families (DoD 2016a). No other residential areas are within 15 miles of CAFS.

A Civil Air Patrol Glider Academy operates out of Clear Airport, which is adjacent to CAFS. During the annual academy in late spring/early summer, approximately 350 glider flights occur. Glider flights occur throughout the day and, because flights utilize thermals from the heat of the day, gliders may fly up to or after 8 p.m. To provide for a safe and efficient landing, typical aerotow procedures climb to altitudes up to 3,500 feet adjacent to the Clear Airport before release. Since the TFR hours would be from 8:00 pm to 11:59 am May 1 through September 30, there would be minimal impacts to glider flights.

Short-term impacts on operations based out of Clear Airport may occur during testing hours. Clear Airport would be closed six hours per week (i.e., for 2 hours, three times per week between the hours of 2 a.m. and 4 a.m.); however, emergency aircraft and medical evacuation flights into and out of Clear Airport would be available through processes defined in a Letter of Agreement between MDA, CAFS, and FAA, which would minimize adverse impacts on land use in the context of operations at Clear Airport.

Although use of airspace would be limited during performance testing, this would be unlikely to affect access to hunting/fishing areas via aircraft through local airports because there would be limited to no impacts on flight operations at these airports.

Therefore, the FAA has determined that its Proposed Action would not result in significant impacts on land use when compared to the No Action alternative.

Natural Resources and Energy Supply

The FAA has not established a significance threshold for this category, which is discussed in Section 3.8 of the Final EA.

The term “natural resources” refers to the materials or substances such as minerals, forests, water, and land that occur in nature. In the context of this project, natural resources and energy supply refers to the natural or depletable resources found within or near the project area such as water, and energy supplies such as electricity, natural gas, and fuels. The applicable natural resource to FAA’s Proposed Action is the additional fuel supply needed for aircraft that may be detoured or rerouted.

The Proposed Action would result in a change to aircraft flight paths during LRDR performance testing. Increased flight time would incrementally increase aviation fuel consumption. However, because the increased daily fuel demand would be low (one gallon for detoured VFR flights⁴ and 30 gallons to 805 gallons for rerouted IFR flights based on the reroute), no new aviation fuel storage tanks or changes to existing tanks would be required to supply new demand induced by the Proposed Action. It is unlikely that such reroutes and detours, and additional fuel usage would result in a noticeable increase in regional aviation fuel demand.

⁴ The estimated VFR flight detour distance is based on both TFRs being active, which is a conservative estimate since the TFR near Clear Airport would only be active from 2 am to 4 am on Tuesdays, Thursdays, and Saturdays, for a total of 6 hours a week.

Therefore, the FAA has determined that its Proposed Action would not result in significant impacts on natural resources and energy supply when compared to the No Action alternative.

Noise and Noise-Compatible Land Use

This impact category is addressed in Section 3.9 of the Final EA. For aviation noise analyses, the Federal Aviation Administration (FAA) has determined that the cumulative noise energy exposure of individuals to noise resulting from aviation activities must be established in terms of Day Night Average Sound Level (DNL), the FAA's primary noise metric. The FAA defines a "significant" noise increase as an increase in DNL of 1.5 dB or more in a noise sensitive area that is exposed to noise at or above DNL 65 dB, or that will be exposed at or above DNL 65 dB due to a DNL 1.5 dB or greater increase, when compared to the no action alternative for the same timeframe.⁵ For air traffic airspace and procedure actions, the FAA also identifies any areas where there would be a "reportable" noise increase, which the FAA defines as an increase in DNL of: (1) 3 dB or more at DNL 60 to <65 dB; or (2) 5 dB or more at DNL 45 to <60 DNL.⁶

As described in Appendix D of the Final EA, it is conservatively estimated that the FAA would reroute up to five IFR flights per day to avoid the proposed TFRs. Given the low number of affected flights, the FAA conducted aircraft noise screening to determine whether a detailed noise analysis was warranted.⁷ The FAA used the Traffic (TRAF) Test, as described in *Guidance for Noise Screening Air Traffic Actions* (MITRE, 2012).⁸ The TRAF test considers aircraft type, percent of nighttime operations, and altitudes flown to determine the maximum number of aircraft operations that could occur on a particular route or procedure before there would be a potential for reportable or significant noise increases. Based on the results of the noise screening, the FAA's rerouting of IFR flights would not have the potential to cause significant or reportable increases in aircraft noise.

Therefore, the FAA has determined that its Proposed Action would not result in significant noise impacts when compared to the No-Action Alternative.

⁵ FAA Order 1050.1F, Exhibit 4 1. The FAA also identifies the following as "factors to consider" in evaluating the context and intensity of noise impacts: "Special consideration needs to be given to the evaluation of the significance of noise impacts on noise sensitive areas within Section 4(f) properties (including, but not limited to, noise sensitive areas within national parks; national wildlife and waterfowl refuges; and historic sites, including traditional cultural properties) where the land use compatibility guidelines in 14 CFR part 150 are not relevant to the value, significance, and enjoyment of the area in question. For example, the DNL 65 dB threshold does not adequately address the impacts of noise on visitors to areas within a national park or national wildlife and waterfowl refuge where other noise is very low and a quiet setting is a generally recognized purpose and attribute."

⁶ FAA Order 1050.1F, Appendix B, paragraph B-1.4.

⁷ Under the FAA's NEPA procedures, aircraft noise screening may rule out the need for more detailed noise analysis. FAA Order 1050.1F, Appendix B, paragraph B-1.1. Only IFR flights that would be rerouted under the FAA's Proposed Action were included in the noise screening. The Final EA also conservatively estimates that an average of up to ten VFR flights per day would detour around the proposed TFRs. However, assigning VFR flights to any specific detour paths (including within the estimated potential flight lanes described in Appendix D of the Final EA) for the purpose of noise analysis would be speculative because it is unknown how many pilots might choose to fly a particular path or a specific altitude. VFR pilots typically do not interact with air traffic controllers unless they are flying in controlled airspace (Classes A, B, C, or D) or request radar flight following. VFR pilots are not required to file a flight plan, so it is difficult to capture their numbers or where they fly. Route of flight is at the pilot's discretion under VFR.

⁸ The MITRE document is listed in the FAA's *1050.1F Desk Reference* (available at https://www.faa.gov/about/office_org/headquarters_offices/apl/environ_policy_guidance/policy/faq_nepa_order/desk_ref/) as an approved noise screening tool for use in evaluating when proposed air traffic procedure actions may warrant additional review for potential noise impacts.

Socioeconomics, Environmental Justice, and Children’s Environmental Health and Safety Risks

Socioeconomics

The FAA has not established a significance threshold for socioeconomic impacts, which are discussed in Section 3.10 of the Final EA.

The Proposed Action has the potential to affect access to the navigable airspace in the vicinity of CAFS, which, in turn, could affect regional and local aviation traffic, both commercial and non-commercial. Consequently, the socioeconomics analysis evaluated the potential economic impact of the Proposed Action on Alaska’s aviation industry. Due to the project area’s rural location and weather extremes, and the population’s dependency on the civil aviation industry, air travel and transport could be affected by the Proposed Action.

As described in Appendix C of the Final EA, it is conservatively estimated that under the Proposed Action the FAA would reroute an average of up to five IFR flights per day around the proposed TFRs, and an average of up to ten VFR flights per day would detour around the proposed TFRs. The flight restrictions would be limited to 16 hours per day for the continuous TFR and 6 hours per week for the additional airspace for the non-continuous TFR during performance testing. From 8 a.m. to 3:59 p.m. local time from October 1 through April 30 and from 12 p.m. to 7:59 p.m. local time from May 1 through September 30 each day, the airspace would remain unrestricted, leaving opportunities for aircraft to operate and navigate during normal daylight conditions. Medical, law enforcement, and fire protection services still would be available during testing activities, and a Letter of Agreement between MDA, CAFS, and FAA would allow access by emergency aircraft and medical evacuation flights into and out of Clear and Healy River Airports.

For the socioeconomic analysis, the ROI consists of three out of the four boroughs or census areas that are in the Interior Region of Alaska. The three boroughs/census areas are the Denali Borough, Yukon-Koyukuk Census Area, and Fairbanks North Star Borough.

Most of the ground transportation in the study area near CAFS uses George Parks Highway as the main transportation corridor that connects Anchorage and Fairbanks. Air transportation is a key component due to the remote geographic region and has also been beneficial to the economy. The aviation system in Alaska is comprised of over 394 public airports. The Alaska Department of Transportation (Alaska DOT) and Public Facilities airport network makes up 239 of the 394 airports: 237 rural airports and 2 international airports at Fairbanks and. Of the 239 Alaska DOT-owned and operated airports, 172 are gravel; 46 are paved airports; 18 are seaplane bases; and there is one heliport. Fairbanks International Airport provides critical air service to more than 80 communities and remote locations in the Interior Region and Northern Alaska that rely upon air freight, mail and commuter services. The economic contribution of the aviation industry to Alaska in 2017 accounted for 35,000 jobs across the state and \$3.8 billion to the economy annually by supporting local businesses that employed Alaskans in year-around operations.

The Proposed Action would not be expected to result in changes in population or employment. The Proposed Action could have an impact on income for commercial aviators, and could cost

more for individual civilian pilots. Commercial and civilian aircraft would be required to undertake course deviations or altitude changes to avoid the airspace affected by LRDR performance testing. These reroutes and detours would require some aircraft to fly longer distances to reach their destination,⁹ resulting in an increase in associated costs from additional fuel and other operating costs.

Costs associated with additional fuel requirements and other operating costs could result in a decrease in income for small aircraft business operators and higher fuel costs for individual pilots. It is likely that business operators may pass the added fuel costs onto customers of commercial flights. Individual pilots could assume the higher fuel costs, choose different flight paths, or fly less often. It is not expected that the additional operating costs would significantly affect aircraft operators.

To calculate the estimated total annual additional fuel required and associated additional cost, the analysis in the Final EA assumed that the maximum number of detoured VFR flights (3,650) and rerouted IFR flights (1,825) would occur per year and that the VFR and IFR aircraft would be a Cessna 208 and a B737, respectively, at full passenger capacities. Assuming 3,650 VFR flights would be detoured per year, it was calculated that 2,482 pounds of additional fuel would be required annually that would cost an additional approximately \$2,190. It is not known how many of the 1,825 rerouted IFR flights per year would be on J-125 and rerouted to the Western Reroute, would be on V-436 and rerouted to the Western Reroute, or would be on V-436 and rerouted to the V-438 Reroute. Therefore, using the most conservative approach, two different annual additional fuel requirements and associated costs were calculated assuming that all 1,825 rerouted IFR flights would be rerouted to either the Western Reroute or to the V-438 Reroute. Assuming all rerouted IFR flights would be rerouted to the Western Reroute, it was calculated that 69,350 pounds of additional fuel would be required that would cost an additional approximately \$61,191 on an annual basis. Assuming all rerouted IFR flights would be rerouted to the V-438 Reroute, it was calculated that 1,996,550 pounds of additional fuel would be required that would cost an additional approximately \$1,761,662 on an annual basis.

To calculate the total annual additional other operating costs, the analysis in the Final EA assumed that the maximum number of detoured VFR flights (3,650) and rerouted IFR flights (1,825) would occur per year and that the VFR and IFR aircraft would be a Cessna 208 and a B737, respectively. Assuming 3,650 VFR flights with one pilot and one passenger would be detoured per year, it was calculated that the total additional other operating costs for detoured VFR flights would be approximately \$3,249 on an annual basis. Assuming all rerouted IFR flights would be rerouted to the Western Reroute, it was calculated that the total additional other operating costs for rerouted IFR flights would be \$25,331 on an annual basis. Assuming all rerouted IFR flights would be rerouted to the V-438 Reroute, it was calculated that the total additional other operating costs for rerouted IFR flights would be \$715,108 on an annual basis.

The total incremental costs (for additional fuel and other operating costs) were calculated to be \$1.49 per detoured VFR flight, and \$47.41 for each IFR flight on the Western Reroute. The total

⁹ The estimated VFR flight detour distance is based on both TFRs being active, which is a conservative estimate since the TFR near Clear Airport would only be active from 2 am to 4 am on Tuesdays, Thursdays, and Saturdays, for a total of 6 hours a week.

annual costs (for additional fuel and other operating costs) were calculated to be approximately \$5,439 for all detoured VFR flights and approximately \$86,523 for all IFR flights on the Western Reroute. Additional total costs (for additional fuel and other operating costs) for all IFR flights on the V-438 Reroute were calculated to be \$1,357.13 per rerouted flight, and approximately \$2,476,762 per year.

Worst case assumptions were used for the calculation of estimated additional total costs. All rerouted IFR flights would not be B737 aircraft at full passenger capacity, actual IFR flights on J-125 would not all be rerouted to the V-438 Reroute, and the rerouting of the affected flights on V-436 would be a combination of the Western Reroute and the V-438 Reroute based upon their ability to accommodate supplemental oxygen requirements. As such, it is likely that a range of IFR aircraft at different capacities would be rerouted, and not all 1,825 annual rerouted IFR flights would be rerouted to V-438, which means the total costs would likely be lower. In addition, the increased costs would be spread among many aircraft.

At most, the Proposed Action would involve rerouting of 5 IFR flights per day and detours by 10 VFR flights per day; however, the flight restrictions would be limited to 16 hours per day for Zone 1 and approximately 6 hours per week for the additional airspace in Zone 2 during performance testing. From 8 a.m. to 3:59 p.m. AKDT or AKST from October 1 through April 30 and from 12 p.m. to 7:59 p.m. AKDT from May 1 through September 30 each day, the airspace would remain unrestricted, leaving opportunities for aircraft to operate and navigate during normal daylight conditions. Medical, law enforcement, and fire protection services still would be available during testing activities, and a Letter of Agreement between MDA, CAFS, and FAA would allow access by emergency aircraft and medical evacuation flights into and out of Clear Airport and Healy River Airport.

Based on the FAA's independent evaluation of the information and analysis in the Final EA, including the hours of the proposed TFRs, the conservative assumptions used to calculate estimated additional aircraft operating costs, and the number and range of potentially-affected flights and operators, the FAA has determined that its Proposed Action would not result in significant socioeconomic impacts when compared to the No Action alternative.

Environmental Justice and Children's Health and Safety Risks

The FAA has not established a significance threshold for Environmental Justice or for Children's Environmental Health and Safety Risks, which are discussed in Section 3.11 of the Final EA.

The ROI for environmental justice is defined as the region in which there is the potential for adverse impacts from the Proposed Action. The ROI consists of the affected airspace within the Proposed Action, the CAFS boundary, and surrounding communities of Healy, Ferry, and the City of Nenana. The City of Anderson, which consists of both the off-base civilian community population and the on-installation CAFS population, is the only community that underlies the proposed TFRs. Nearby communities and boroughs were also included in the ROI to inform the analysis.

The City of Nenana, Municipality of Anchorage, and Yukon-Koyukuk Census Area have minority populations that are meaningfully greater than that of the State of Alaska. Residents in Denali Borough and Yukon-Koyukuk Census Area have low-income populations meaningfully greater than that in the State of Alaska. The City of Nenana had the highest percentage of children at 28.2 percent, followed second by Healy CDP at 19.3 percent, compared to the state of Alaska at 25.2 percent. Six schools are within the potentially affected communities of the ROI and surrounding area.

The proposed performance testing of the LRDR would result in negligible, short-term impacts on environmental justice populations in the ROI, but impacts would not be disproportionate. The FAA's Proposed Action would not have significant impacts in any other environmental impact category. As noted above under "Historical, Architectural, Archeological, and Cultural Resources," consultation with federally recognized Native American representatives was undertaken and there have been no concerns raised by any tribes regarding the Proposed Action.

Therefore, the FAA has determined that its Proposed Action would not result in significant impacts on environmental justice populations or children when compared to the No Action alternative.

Visual Effects

Visual effects are discussed in Section 3.12 of the Final EA. The FAA has not established a significance threshold for Visual Effects, but has identified factors to consider in evaluating their context and intensity.¹⁰

The Proposed Action has the potential to affect flight paths for regional and local aviation traffic, both commercial and non-commercial. The Region of Influence includes the Scenic Byway George Parks Highway (Alaska State Highway 3), the Tanana River Basin, and the Denali National Park and Preserve. Tourists visiting Alaska and Denali National Park and Preserve are the most sensitive viewer group in the ROI that expect to see uninterrupted views of the landscape.

Impacts that could result from performance testing of the LRDR would be changes to the contextual settings of visual resources impacts due to the introduction of additional rerouted and detoured aircraft within desirable viewsheds and landscapes as part of the Proposed Action. New flight patterns would occur only during the times of performance testing, 4 p.m. to 7:59 a.m. local time and from October 1 through April 30, and 8 p.m. to 11:59 a.m. local time from May 1 through September 30, which are not peak times for daylight observation of relevant viewsheds and landscapes during the majority of the year.

The majority of visitors to Denali National Park and Preserve are not likely to view any aircraft that would be rerouted and detoured due to the Proposed Action as the reroutes and detours would not affect the park area. While backcountry hikers seeking solitude may be most annoyed by visible aircraft, they would generally have short view durations as the aircraft moves through

¹⁰ See FAA Order 1050.1F, Exhibit 4-1.

the area, and the potential for one of the approximately 15 rerouted or detoured flights per day to coincide with a backcountry hiker is unlikely.

Therefore, the FAA's Proposed Action would have no significant impact on visual resources when compared with the No Action Alternative.

Water Resources

Wetlands and Floodplains

The FAA's Proposed Action would not create a physical disturbance or create ground disturbance that would impact wetlands or floodplains; therefore, this impact category is not applicable.

Surface Waters and Groundwater

The FAA's Proposed Action would not impact surface water or groundwater; therefore, this impact category is not applicable.

Wild and Scenic Rivers

There are no designated wild and scenic rivers located within the proposed TFRs, or below areas where aircraft may be rerouted; therefore, this impact category is not applicable.

Based on the information above on wetlands, floodplains, surface waters, groundwater, and wild and scenic rivers, the FAA has determined that its Proposed Action would not result in significant impacts on water resources when compared to the No Action alternative.

Cumulative Impacts

Cumulative impacts result from incremental impacts of an action when combined with other past, present, and reasonably foreseeable future actions (40 CFR 1508.7). Cumulative impacts can result from individually minor but collectively significant actions over a period of time (CEQ, 1997). Cumulative impacts would occur if incremental impacts of the Proposed Action, added to the environmental impacts of past, present, and reasonably foreseeable future actions, would result in an adverse effect to resources in the region. The Final EA analyzed 26 past, present, and foreseeable future projects in the ROI.

Because LRDR performance testing would be temporary with a temporal impact period of 12 to 18 months, it would not have long-term cumulative impacts on any environmental category.

Air Quality

Short-term negligible cumulative impacts on air quality would be expected from air emissions generated during construction of LRDR and non-LRDR facilities at CAFS, combined with a potential negligible increase in air emissions from aircraft traveling on longer routes below 3,000 feet AGL, resulting from rerouting and detours during LRDR performance testing.

Biological Resources

Short-term, negligible cumulative impacts on biological resources would be expected from the Proposed Action and cumulative projects. Short-term cumulative impacts on biological resources could occur from the disturbance or removal of bird and bat habitat during construction of LRDR

and non-LRDR facilities at CAFS, and rare events during testing when a bird or bat is close enough to the radar unit when it is operating in tracking mode that tissue damage could occur. Although proposed demolition of infrastructure at CAFS could create additional habitat for terrestrial wildlife that fly, it is unlikely that birds or bats flying in front of the radar unit during testing would be exposed to the radar beam for a sufficient length of time to be harmed because the beam is narrow and pulses rapidly.

Natural Resources and Energy Supply

Short-term, negligible cumulative impacts on natural resources and energy supply would be expected from the Proposed Action and cumulative projects. Construction of LRDR and non-LRDR facilities at CAFS, increased cargo air traffic from Anchorage International Airport, and construction of the Alaska LNG project, during LRDR performance testing would result in a short-term increased demand on natural resources and energy supply in the region.

Noise

Short-term, negligible cumulative impacts on noise would be expected from the Proposed Action and cumulative projects. Results of the noise screening showed that the rerouting of aircraft would not result in a significant or reportable increase in aircraft noise during LRDR performance testing. In addition, no changes to airfield noise timing or intensity would result from limiting the use of affected airspace.

Visual Effects

Short-term, intermittent, negligible cumulative visual impacts would be expected from the Proposed Action and cumulative projects. The Proposed Action could have short-term, intermittent, negligible visual impacts from introduction of additional aircraft within desirable viewsheds and landscapes resulting from aircraft detouring and rerouting during LRDR performance testing.

Conclusion

Based on its independent review of the FAA Proposed Action, the FAA has determined there would be no significant cumulative impacts as a result of the FAA's Proposed Action.

Other Considerations

Based on the FAA's independent evaluation of the information and analysis in the Final EA regarding potential impacts on land use, the FAA's Proposed Action is consistent with the plans, goals, and policies for the area and with the applicable regulations and policies of federal, state, and local agencies.

PUBLIC INVOLVEMENT

Stakeholder Letters and Associated Comments

Between April 6th and 7th, 2020, MDA sent out letters to identified stakeholders, which included local and state elected officials, state and local government agencies, local businesses, and interested members of the public. The letters summarized the status of the construction at CAFS, the redesign to the proposed special use airspace in response to scoping comments, and the need for testing and the proposed testing schedule. Lastly, the letter encouraged the stakeholders to provide input on the provided information.

Nine individuals/groups submitted comments. Multiple topics were raised in these comments, including: requesting a shorter daily testing timeframe outside to support local flight operations, a change in the testing hours to allow flights later in the day, contact information should be provided and include a telephone number and a radio frequency, the use of a TFR for testing is not appropriate, questions on the differences and relationship between the proposed actions for the EA for the LRDR performance testing and the Environmental Impact Statement (EIS) for LRDR operations, and if notification of the LRDR Performance Testing Proposed Final EA was provided to the general aviation community and airline representatives because the Proposed Action may have impacts on both groups.

Changes were made to the proposed action and other parts of the Final EA to respond to these comments during the preparation of the Final EA. For example, changes include modification of the TFR area and hours, and the addition of the stakeholder list in Appendix C.

NEPA

As part of the NEPA process, the Proposed Final EA was released for a 30-day public review period. A Notice of Availability announcing the review period was published in two local newspapers (i.e., Anchorage Daily News and Fairbanks Daily-News Miner) and mailed to federal, state, and local agencies, and interested members of the public. Federal, state, and local agencies and members of the public were encouraged to review and comment on the Proposed Final EA during the 30-day public review period. An electronic copy of the Proposed Final EA was posted to MDA's project website, <https://www.mda.mil/system/lrdr.html>. The Proposed Final EA was also sent to local libraries in Alaska (i.e., Z.J. Loussac Library in Anchorage; Anderson Village Library in Anderson; Noel Wein Library in Fairbanks; Nenana Public Library in Nenana; and Tri-Valley Community Library in Healy libraries) for public review.

The Proposed Final EA review period began on May 4, 2020 and ended on June 2, 2020. Three entities (the U.S. Coast Guard, Seventeenth District; Alaska Airmen Association; and the Environmental Protection Agency) sent in comments during this time period. Appendix C includes a copy of the Notice of Availability (NOA) for the Proposed Final EA and MDA's Proposed FONSI. This NOA was emailed to 86 stakeholders, and was announced on KUAC (FM 89.9) and the KUAC website. Appendix C also includes correspondence including letters to the Alaska State Historic Preservation Officer, the Nenana Native Council, elected officials, and others identified as stakeholders. This NOA was also published in area newspapers.

Other Public Outreach Activities

- FAA-MDA Meeting with the Alaska Industry Council – December 11, 2019
- MDA meeting with Helicopter Association International – April 21, 2020
- MDA meeting with City of Anderson Mayor and Fire Chief, and local pilot/emergency medical technician – April 30, 2020

INCORPORATED BY REFERENCE

In addition to the Final EA, the FAA has also reviewed the following information:

- *Long-Range Discrimination Radar Clear Air Force Station, Alaska Final Environmental Assessment, June 2016*¹¹

¹¹ Available at https://www.mda.mil/global/documents/pdf/env_LRDR_finalEA_FONSI_CAFS_2016_07_08.pdf.

DECISIONS AND ORDERS

Adoption

The FAA has conducted an independent evaluation of the Final EA. Based on its independent evaluation, the FAA has determined that the Final EA adequately addresses the FAA's Proposed Action and meets the applicable standards in FAA Order 1050.1F and regulations of the Council on Environmental Quality implementing the National Environmental Policy Act (40 CFR parts 1500-1508).

Accordingly, the FAA adopts the Final EA, Appendices and all information identified therein, incorporated by reference, and made publicly available.

Finding

The FAA finds that its Proposed Action would not significantly affect the human environment and therefore preparation of an Environmental Impact Statement is not warranted.

Decision and Approval

After careful and thorough consideration of the facts contained herein, the undersigned finds that the proposed Federal action is consistent with existing national environmental policies and objectives as set forth in Section 101 of NEPA and other applicable environmental requirements and will not significantly affect the quality of the human environment or otherwise include any condition requiring consultation pursuant to Section 102(2)(C) of NEPA.

The undersigned has carefully considered the FAA's statutory mandate under 49 USC 40103 to ensure the safe and efficient use of the national airspace system as well as the other aeronautical goals and objectives discussed in the Final EA. The undersigned finds that the FAA's Proposed Action provides the best approach for meeting the purpose of, and need for, that action.

Accordingly, under the authority delegated to the undersigned by the Administrator of the FAA, the undersigned approves and authorizes all necessary agency action to implement the FAA's Proposed Action.

This decision signifies that applicable Federal environmental requirements relating to the FAA's Proposed Action have been met. The decision enables the FAA to implement that action.

Approved: _____

Scott M. Rosenbloom,
Manager, Rules and Regulations Group
Mission Support Services
Air Traffic Organization
Federal Aviation Administration

Date: 10 August 2020

Right of Appeal

This FONSI/ROD constitutes a final order of the FAA Administrator and is subject to exclusive judicial review under 49 U.S.C. §46110 by the U.S. Circuit Court of Appeals for the District of Columbia or the U.S. Circuit Court of Appeals for the circuit in which the person contesting the decision resides or has its principal place of business. Any party having substantial interest in this order may apply for review of the decision by filing a petition for review in the appropriate U.S. Court of Appeals no later than 60 days after the order is issued in accordance with the provisions of 49 U.S.C. §46110. Any party seeking to stay implementation of the ROD must file an application with the FAA prior to seeking judicial relief as provided in Rule 18(a) of the Federal Rules of Appellate Procedure.