



ENVIRONMENTAL ASSESSMENT

High Frequency Beyond Line of Sight Antenna Project

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USAF AFMC AFRL/RIOCV

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Table 1: List of acronyms and abbreviations

ACAM	Air Conformity Applicability Model
AFRL/RI	Air Force Research Laboratory Information Directorate
AFSAM	Air Force School of Aerospace Medicine
ATA	Ava Test Annex
BLOS	Beyond Line of Sight
CEQ	Council on Environmental Quality
CSAF	Chief of Staff of the Air Force
DOD	Department of Defense
EA	Environmental Assessment
EMFR	Electro Magnetic Frequency Radiation
HF	High Frequency
IPAC	Information for Planning and Consultation
NEPA	National Environmental Policy Act
NTA	Newport Test Annex
NYSDEC	New York State Department of Environmental Conservation
SHPO	State Historic Preservation Officer
STA	Stockbridge Test Annex
THPO	Tribal Historic Preservation Officer
USDOI-FWS	United States Department of the Interior Fish and Wildlife Service
VCSAF	Vice Chief of Staff of the Air Force

Table 2: List of Appendices

Appendix A	NYSDEC Environmental Resource Mapper Wetlands and Streams Maps
Appendix B	ACAM Report
Appendix C	USAFSAM Update to Consultative Letter
Appendix D	US-DOIFWS Consultation, IPAC Species List
Appendix E	US-DOIFWS Species Conclusion Table (Eagles)
Appendix F	THPO Concurrence Correspondence
Appendix G	SHPO Concurrence Letter

1.0 PURPOSE AND NEED FOR ACTION

1.1 Introduction

The Air Force Research Laboratory Information Directorate (AFRL/RI) has conducted an assessment of potential environmental impacts related to the Proposed Action at three (3) satellite communications testing site facilities of AFRL/RI. The Proposed Action involves installing one (1) High Frequency Antenna at the Tanner Hill Facility and one (1) Walk Up Tower at the Irish Hill Facility, both located at the Newport Test Annex (NTA) as well as an (1) additional High Frequency Antenna at the Stockbridge Test Annex (STA). The NTA and STA have operated for decades as the communications testing facilities for transmissions to and from AFRL/RI due to their locations high on hilltops near the cities of Oneida and Utica, located in the state of New York, approximately 15 miles west and east from the home site of AFRL/RI.

AFRL's STA provides a key location for the development of communications and Unmanned Aerial Vehicle (UAV) technologies due to its remote location, ideal topographic conditions, and minimal impact potential on human habitation and the natural environment, since this site has long been impacted and disturbed for military equipment experimentation. AFRL's NTA is located in the town of Newport, NY, approximately 10 miles NE of Utica, NY, and occupies 181 acres of land. The site consists of 2 hilltop facilities: Irish Hill and Tanner Hill. These facilities sit adjacent to one another, separated by a 400 foot valley and 1.5 miles of linear distance. The NTA was established in 1954 and has hosted a variety of missions and model aircraft types throughout its history.

The proposed actions at these research facilities would provide infrastructure to enhance the High Frequency (HF) capabilities of the communications missions conducted at and between these sites, the main AFRL/RI campus and Kirtland Air Force Base, NM. HF modernization programs have been identified as a priority by both the Chief of Staff of the Air Force (CSAF) and the Vice-Chief of Staff of the Air Force (VCSAF) to address gaps identified by combatant commanders that could adversely impact Department of Air Force (DAF) ability to meet mission requirements. Our existing Air Force HF radio capabilities suffer from gaps in technological innovation, operator skill, and network performance.

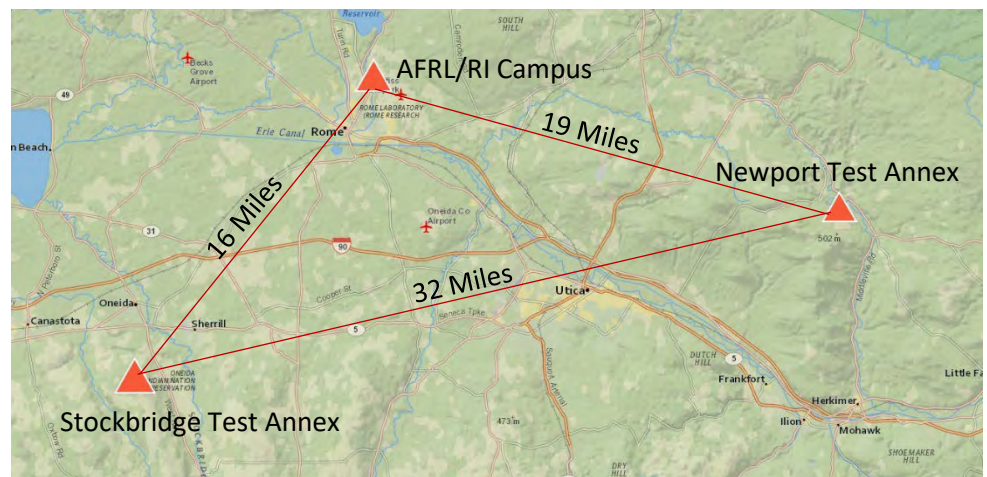


Figure 1: Locations of AFRL/RI, STA and NTA

The purpose of the Proposed Action is to enhance AFRL's HF Beyond Line of Sight (BLOS) capabilities by installing equipment at testing facilities, which would aid in the development of resilient, redundant, and contingency communications in support of Primary, Alternate, Contingency, and Emergency (PACE) planning. These communications are imperative to direct lethality from joint and combined forces. The need for the Proposed Action is to meet the increasing research and testing requirements placed on AFRL in support of the warfighter mission. Investment in DAF global HF infrastructure has been minimal to non-existent since the collapse of the Soviet Union and the end of the Cold War.

Recent events and unanticipated threats to USAF primary BLOS communication infrastructure have combined to illustrate that an adjunct communication capability is necessary. Current DAF HF networks, some of which were established as far back as World War I, can no longer provide this resiliency, unless USAF modernizes using the latest technologies. The enhancement of technologies such as moving from current analog systems to digital can provide capabilities that far exceed current, historical 3 kilohertz analog voice and data quality. Intelligent recapitalization and technology insertion are required to provide both a greater capability and technological growth path to maintain mission capabilities in increasingly challenging operational environments.

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 Proposed Action

This section describes the Proposed Action and alternatives considered, including the No-Action Alternative. It also documents the process the Air Force used to determine the scope of alternatives to be considered, with emphasis placed on what is "reasonable." Reasonable alternatives means a reasonable range of alternatives that are technically and economically feasible, and meet the purpose and need for the proposed action (40 CFR 1508.1).

2.2 Selection Standards

The scope and location of each Proposed Action and, where applicable, their alternatives, have undergone extensive review by AFRL/RI environmental proponents, local government agencies, and supporting installation and Air Force staff specialists.

Potential alternatives to the Proposed Actions were each evaluated based on three universal selection standards, which were applied to all alternatives. Each project description, beginning in Section 2.3, provides details regarding how these universal selection standards apply to specific project requirements.

2.3 Screening of Alternatives

The National Environmental Policy Act (NEPA) and the Council on Environmental Quality (CEQ) regulations mandate the consideration of reasonable alternatives for the Proposed Action. "Reasonable alternatives" are those that also could be utilized to meet the purpose of and need for

the Proposed Action. Per the requirements of 32 CFR §989, the Air Force EIAP regulations, selection standards are used to identify alternatives for meeting the purpose of and need for the Proposed Action.

In addition to supporting the Purpose of and Need for the Action, the Proposed Action must meet the following baseline requirements:

- Be compatible with the existing, ongoing military mission and activities at AFRL/RI and other DoD installations in the area.
- Be compatible with existing infrastructure and development at AFRL/RI and its vicinity (<40 miles).
- Meet applicable DoD installation master planning criteria, consistent with UFC 2-100-01, *Installation Master Planning*.
- Align with the 2021 Air Force Civil Engineering Strategic Plan (U.S. Air Force, 2021).
- Meet current Air Force requirements for functional space, consistent with Department of Air Force Manual 32-1084, *Standard Facility Requirements* (15 Jan 2020).
- Meet applicable DoD antiterrorism/force protection (AT/FP) criteria, consistent with Unified Facilities Criteria (UFC) 4-010-01, *DoD Minimum Antiterrorism Standards for Buildings*. and the Air Force Installation Force Protection Guide.
- Conform to the MAJCOM Civil Engineering Squadron Design Guide and the AFRL/RI Architectural Compatibility Guide, which helps to ensure a consistent and coherent architectural character throughout AFRL/RI.

In selecting possible alternative locations for the construction of the facilities described in the Proposed Action at AFRL/RI, the Air Force evaluated sites that **currently** met the following selection standards:

- A. Mission Essential: Follows the current warfighter mission needs.
- B. Site Security/Safety: The infrastructure must be located where existing safety and security measures are in place to prevent vandalism or damage to the proposed infrastructure.
- C. Frequency Approval: AFRL/RI already must have approval to operate equipment at specified frequencies at this site.
- D. HF Potential: The site must meet the HF distance requirements (at least 30 miles) needed to communicate as part of the HF BLOS network described in the Purpose and Need.
- E. Current Facility Condition: The action must occur at an installation site in operational condition with HF equipment and utilities already on site.
- F. Trained Personnel on site: Experienced engineers and support staff must be available to man and operate the equipment within a reasonable daily commute.

- G. Site Previously Disturbed/Excavated: The site substrate and soils must have been previously surveyed or excavated under other initiatives satisfying requiring cultural resource considerations.

Figure 2: Table of selection standards at proposed sites. A rating of “Potential” means the selection standard was not fully satisfied but components which would facilitate achieving the standard more efficiently were present.

Alternative Descriptions	Mission Essential	Site Security	Frequency Approval	Facility Condition	Site Previously Disturbed/Excavated	Trained personnel on site	HF Potential
Alternative 1: Construction/ Demolition	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Alternative 2: No Action Alternative	No	N/A	N/A	N/A	N/A	N/A	N/A
Verona Test Annex	Yes	No	No	No	Potential	No	No
Ava Test Annex	Yes	No	No	No	Potential	No	Yes
Fort Drum	Yes	Yes	No	No	Potential	No	Yes

2.4 Detailed Description Of Alternatives

2.4.1 Alternative 1 - (Proposed Action) - Construction of new facilities and demolition of auxiliary structures (B1605, 1640 & B1607) at preferred locations.

The proposed project includes the construction of two 100 ft. HF BLOS (3-30 MHz) antennas. One at the NTA Tanner Hill, and one at the STA. These antennas would be operating at frequencies similar to those of consumer grade electronics such as cellular phones, radio communications and broadcasting equipment. HF BLOS primary function is to communicate between the STA and NTA and Kirtland AFB, NM; approximately 2,000 miles. A 650 SF facility would be constructed at each HF antenna tower site for collection and interpretation of data received from each respective HF Antenna.

Each new HF Antenna support building would be constructed with a reinforced concrete foundation, Concrete masonry unit (CMU) block walls with exterior insulation and cladding that is appropriate for the regional climate, metal roofing, and infrastructure support systems sized to meet the building loads for each respective system. Buildings would not have restrooms or domestic water capabilities. Each new building would be constructed to meet Sensitive Compartmented Information Facility (SCIF) security standards. A storage facility would be constructed at the NTA Irish Hill to replace a current facility that would be demolished as part of the site improvements at the NTA Tanner Hill.

Additionally, this project proposes the construction an 80 ft. walk up tower on Irish Hill for experimentation in the microwave RF frequency range (30 MHz to the 300 GHz), THz range, and Optical frequency range. This new tower would perform the same types of experimentation that is currently underway at the NTA. All experimentation is covered by the current AFRL Form 5 (Laboratory Safety Permit form) authorization.

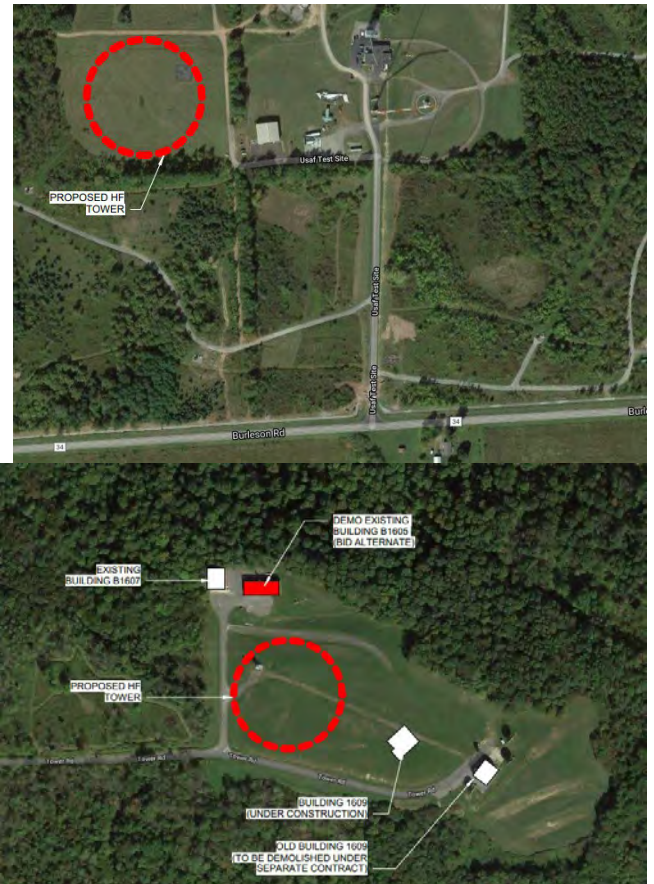


Figure 5: Aerial Image showing action area, NTA Tanner Hill



Figure 4: Aerial image showing action area, Irish Hill

HF BLOS Testing is not new or unique to the NTA and STA. The frequency range of operation for both test sites includes testing in the 3 to 30 MHz (High Frequency HF) range. The proposed HF antennas would be located on a 100 ft. tower with the entire antenna footprint located within a 100 ft. radius security fence. The fence would prevent personnel from entering the antenna footprint and coming in contact with the tower structure during frequency transmission.

The Proposed Action also includes the demolition and removal of unoccupied Structure 1640 (737 ft²), and Buildings 1605 (4000 ft²) and 1607 (3000 ft²), including all utilities and foundation, the site returned to grade, and re-seeded into green space which would add 7737ft² of green space. Grading or disturbances to surfaces to complete the Proposed Action would cover an anticipated area of 6400 ft² at the STA and another 6400 ft² at the NTA.

2.4.2 Alternative 2 - No Action Alternative

Under the No-Action Alternative, neither the Proposed Action (construction of HF BLOS antenna and associated facilities, construction of walk up tower, demolition of auxiliary facilities S1640, B1605 and B1607) nor Alternate Locations would proceed. Under this alternative, AFRL/RI would not have the capacity to achieve the HF BLOS communication goals described in the purpose and need for action above. Although the No-Action does not satisfy the purpose and need with improving RF pattern collection at the NTA, it is used to provide an environmental baseline for comparing the Proposed Action and Alternatives against.

2.4.3 Alternatives Considered But Eliminated From Detailed Analysis

Construction and operation of the proposed facilities at other AFRL and DOD sites within reasonable proximity to the STA/NTA are considered for this project. The Verona Test Annex (VTA; a property owned by AFRL/RI), the Ava Test Annex (ATA; formerly owned by AFRL/RI), and the U.S. ARMY installation at Fort Drum are potential locations for the installation and construction of these facilities.

Under this alternative, the facilities and equipment to be installed are largely identical to those described in the Proposed Action but more would be needed to meet the current performance level of the NTA and STA. In addition, VTA was eliminated due to its close proximity to STA; a minimum distance of 30 miles is required for HF communication purposes. Ava was eliminated during scoping as it was purchased by a non-profit and therefore no longer available for re-purchase. Finally, Fort

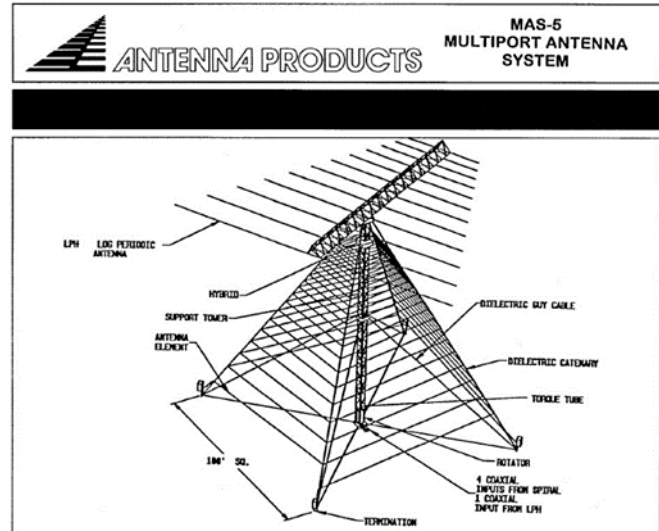


Figure 6: MAS 5 Antenna image

Drum's location was dismissed as the distance to the site from AFRL is too great, and the frequency approvals are not in place.

This action would not require the demolition and removal of facilities 1640, 1605 and 1607. Additional infrastructure, equipment and resources for security and operations at some of these sites, including major undertakings to retrofit or install proper facilities, would be required to achieve operation similar to the current state of those sites in the Proposed Action.

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

The Region of Influence (ROI) for the Proposed Action includes the Tanner Hill and Irish Hill facilities at the NTA and the STA, unless otherwise specified below for a particular resource area where a resource would have a different ROI.

3.1 Scope Of The Analysis

This chapter describes the current conditions of the environmental resources, either man-made or natural, that would be affected by implementing the Proposed Action or the No Action Alternative.

Based on the scope of the Proposed Action, issues with minimal or no impacts were identified through a preliminary screening process. The following describes those resource areas not carried forward for a detailed analysis, along with the rationale for their elimination.

Regardless of the alternative selected, the following resources would not be affected by the Proposed Action and are not discussed in detail in this EA.

3.1.1 Floodplains

As they are atop hills, neither the NTA or STA have major rivers, streams or tributaries which present threats of flooding and the associated threats to equipment or property damage and water quality or ecosystems. Small headwaters form and recede on each site when high precipitation events occur. There is no record of damages to property due to flooding at either the STA or NTA. A review of the Federal Emergency Management Agency (FEMA), Flood Insurance Rate Map (FIRM) for the project areas revealed that the project areas are not located in a floodplain. The areas are located in Zone C, which is defined as an area of minimal flood hazard, usually above the 500-year flood plain. The Preferred Action does not present potential impacts to floodplains.

3.1.2 Wetlands

A review of National Wetland Inventory (NWI) mapping indicates that there are two wetlands on the southern portion of the STA, to the east of the main entrance. These wetlands are less than 500 linear feet in size and identified as PSSEI, Palustrine shrub wetland. A site visit to evaluate this area for the extent of the mapped wetlands has indicated that the wetlands present in this area extend further south than the mapping indicates. Based on the approximate size of the wetlands at the STA, and the proposed layout of the HF antenna, none of the wetlands would be impacted during construction.

A review of the New York State Wetland data base indicates that there are no state wetlands within the project area at the NTA or STA sites (see Appendix A).

3.2 Air Quality

The STA and NTA are located in rural settings classified as attainment areas under the National Ambient Air Quality Standards (NAAQSs). Current activities at these locations produce little change in ambient air quality as their primary function is experimentation in communications and also small UAV technologies. Emission sources are operational and include sources such as building heating and small engines of vehicles accessing parts of the properties.

Proposed Action: An Air Conformity Applicability Model (ACAM) analysis was performed for the Proposed Action and results are attached in Appendix B. Total net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving “steady state” (i.e., net gain/loss upon action fully implemented) emissions. The ACAM analysis used the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the USAF Air Emissions Guide for Air Force Stationary Sources, the USAF Air Emissions Guide for Air Force Mobile Sources, and the USAF Air Emissions Guide for Air Force Transitory Sources.

“Insignificance Indicators” were used in the analysis to provide an indication of the significance of potential impacts to air quality based on current ambient air quality relative to the NAAQSs. These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold for actions occurring in areas that are “Clearly Attainment” (i.e., not within 5% of any NAAQS) and the General Conformity Rule (GCR) de minimis values (25 ton/yr for lead and 100 ton/yr for all other criteria pollutants) for actions occurring in areas that are “Near Nonattainment” (i.e., within 5% of any NAAQS). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutant is considered so insignificant that the action would not cause or contribute to an exceedance on one or more NAAQSs.

Short term impacts to air quality include short durational dust and fine particulate matter added to the air in the immediate vicinity of the project areas from excavations and construction activities. The Proposed Action is located in an attainment area, therefore a conformity analysis is not required. The proposed construction does not include the installation of new stationary or mobile air emission sources. The optional demolition and removal of facilities 1640, 1605 and 1607 would not cause significant long term impact to air quality issues. Therefore, there would be no substantial negative long term impacts to air quality as a result of the Proposed Action.

Short term impacts to air quality include short durational dust and fine particulate matter added to the air in the immediate vicinity of the project areas from excavations and construction activities.

Alternative 2 - No Action Alternative

Under the no action alternative there would be no significant impacts to air quality.

3.3 Water Resources

Regulatory Agency mapping including National and State wetland maps from the USDO-I-FWS and NYSDEC, and FEMA Floodplain Mapping were reviewed for the site. No water resources are shown on the regulatory mapping in the vicinity of the Proposed Action. Groundwater does exist at the sites and a well would be utilized for non-potable services as it does currently for Buildings 1605 and 1609. Drinking water is provided by approved vendors. Distance to groundwater for both the NTA and STA are estimated to be 20 ft. deep.

Proposed Action: The Proposed Action would not involve impacts to water resources at the NTA or STA. Depth to groundwater for both the NTA and STA is assumed to be 20ft. Excavations and demolitions are not anticipated to reach depths greater than 6 feet deep.

The proposed action would yield a net gain in green space of 6187 ft². Demolition and removal of facilities S1640 (737 ft²), B1605 (4000 ft²) and B1607 (3000 ft²), including all utilities and foundation, the site re-seeded, would add 7737 ft² of green space. New impervious surfaces resulting from the proposed action would total 1550 ft², and include construction of HF antenna support buildings (650 ft² each) and the concrete pad for the walkup tower (250 ft²).

Construction/renovation and routine operations would have little or no impact on groundwater. As a result, the USAF anticipates no significant short or long-term adverse impacts. There would be no significant impacts to water resources at the NTA or STA.

Alternative 2 - No Action Alternative

The No-Action alternative does not present a potential to adversely impact wetlands or other water resources. No net gain in green space would occur.

3.3.1 Stormwater

The water resource area that the Alternatives have the potential to affect include the Tanner and Irish Hill sites (all areas within the parcel limits), the STA and the properties immediately surrounding the parcels. The current condition of the areas adjacent to and within the Proposed Action area is maintained lawn area, semi improved (mowed infrequently) grass/shrub lands, wooded land (forested) and several industrial-style office/research buildings. Areas of gravel and asphalt access roads are also located within the area of the Proposed Action. The primary drainage in the vicinity of NTA is the West Canada Creek located approximately 2 miles north of the site. The STA is on a high elevation point with watersheds of the Oneida Creek to the East and Cowaselon Creek to the West.

Proposed Action:

The immediate areas which will be impacted by the Proposed Action are described as areas of gravel and asphalt, and maintained mowed lawn space. Prior to beginning construction, contractors would be required to adopt a Storm Water Pollution Prevention Plan and qualify for a NPDES Storm Water Permit which would be reviewed and verified by AFRL/RI environmental staff. This includes the requirement for the Energy Independence and Security Act (EISA) under 42 USC §17094. EISA

requires federal agencies to establish storm water design requirements for construction projects that disturb a footprint greater than 5,000 ft² of land in order to maintain or restore the property to its pre-development hydrology state.

The Proposed Action would include very small additional impervious surfaces to the existing infrastructure of the STA and NTA. However, the option to demolish, remove and return the area of, and adjacent to, facilities 1640, 1605 and 1607 to green space has the potential to provide a net gain in vegetation on the NTA. Any additional impervious surface can increase runoff of storm water. The small structures in the Proposed Actions would be constructed in regions surrounded by vegetative buffers and gentle slopes in the immediate area. No additional erosion or deposition is expected to occur. As a result, there is no additional infrastructure needed to process storm water and no anticipated impact from the Proposed Action.

Alternative 2 - No Action Alternative

Under the no action alternative there would be no significant impacts to stormwater.

3.4 Safety and Occupational Health

The NTA, STA and AFRL/RI main campus have been successfully performing experimentation in ranges of electromagnetic frequency radiation (EMFR) for decades. Safety and health of engineers, staff and the public are considered and assessed as needed to ensure responsible and ethical operation of experiments. All EMFR experimentation and related operations are covered by the current AFRL Form 5 (Laboratory Safety Permit form) authorization.

Previously, on May 5th and 6th of 2015, The U.S. Air Force School of Aerospace Medicine (AFSAM) Consultative Service Division conducted a health risk assessment (HRA) to verify safe exposure levels of electromagnetic frequency radiation (EMFR) at the Newport Antenna Measurement Facility. At the request of the Air Force Research Laboratory, the HRA included measurements for potential exposure to EMFR as well as an evaluation for compliance with Air Force Instructions (AFI). The EMFR operations at the Newport Antenna Measurement Facility were found to be compliant with then current AFI 48-109 and Institute of Electrical and Electronics Engineers standards C95.1. No exposures on or around the NTA exceeded either the upper or lower tier maximum permissible exposure limits. Engineering and administrative controls are consistent with Air Force requirements and provide sufficient safety for all personnel at and near the facility. The analysis performed in 2015 suggested any changes to EMFR operations at the site be analyzed through AFSAM to avoid potential future concern. As a result, in 2021, AFSAM was notified and analyzed the Proposed Action and their impacts on occupational health and safety (see Appendix C).

Proposed Action:

One recommendation was made as a result of the consultation and previous analysis:

“USAFSAM concludes that the newly proposed MAS-5 antennas, if operated at the maximum power (1 kW), could pose a potential health risk for Newport facility workers or the general public. Based

on hazard calculations (operating at 1 kW), the maximum hazard distance for non-EMF workers (Lower Tier) is 58 ft from the antenna and 26 ft for facility workers trained in EMF (Upper Tier). It is recommended that installation of the MAS-5 antenna be designed in such a way to prevent direct-path emissions up to 58 ft. If direct path emissions are at sufficient height as to prevent direct exposures to someone on the ground, fencing or barriers preventing access may not be necessary; however, if the antennas emit at ground level, fencing or barriers should be installed around the MAS-5 towers to prevent unauthorized access to the MAS-5 antennas.

USAFSAM recommends that facility personnel request an update to AFRL-SA-WP-CL-2015-0024 once the new equipment is installed."

AFRL engineers and project proponents have concluded that the primary operational power for these transmitters would be in the 1kW power range and that the possibility of purchasing a 10kW transmitter is "highly unlikely". Both the NTA and STA are gated facilities with restricted access which keep the public at a distance greater than 200'.

Under the proposed 1kW power transmission, the proposed 100' security fence is approved and would be utilized. If future power increases are warranted, AFSAM guidance would be heeded and new fencing would be added to accommodate. A review of B1609's location and slight change in elevation showed the change would be insignificant and would not increase potential for exposure. Therefore, no significant impacts would result for Safety and Occupational Health under the Proposed Action.

Alternative 2 - No Action Alternative

Under the no action alternative there would be no significant impacts to safety and occupational health.

3.4.1 Accident Potential

Proposed Action: The Proposed Action involves the construction of new facility, which would be taller than the existing facility. This would make the antenna the tallest structure on Tanner Hill.

FAA Advisory Circular AC 70/7460-IL CHG 1 sets forth standards for marking and lighting obstructions that have been deemed to be a hazard to air navigation. In accordance with the document, "Any temporary or permanent structure, including all appurtenances, that exceeds an overall height of 200 feet (61 m) above ground level (AGL) or exceeds any obstruction standard contained in 14 CFR Part 77 should be marked and/or lighted." The CFR states the same 200 foot AGL reference but would require lighting within 3 nautical miles of an airport. None of the proposed structures would be within 3 nautical miles of an airport and would not exceed 100 ft. AGL. The requirements for lighting/marketing found in 14 CFR Part 77 and FAA Standards are not required. The height of the tallest structure is the 100ft antennae.

No long-term impacts related to accident potential are anticipated to result from the Proposed Action, as the mission activities conducted at the new facility would be identical to the activities conducted at the existing facility. Nor would the anticipated increase in mission activities from the

Proposed Action result in further impacting accident potential zones. Overall, there would be no significant impacts to accident potential under the Proposed Action.

Alternative 2 - No Action Alternative

Under the no action alternative there would be no significant impacts to accident potential.

3.5 Hazardous Materials/Waste

Current facilities and buildings at the NTA were constructed in the 1960's and 1970's and are known to have asbestos containing construction materials. The potential demolition of buildings 1605 and 1607 represent a potential threat via asbestos.

Proposed Action: The Proposed Action includes the demolition and removal of facilities 1640, 1605, and 1607 including all utilities and foundations, the sites returned to grade, and re-seeded into green space. These facilities contain hazardous materials which would need to be abated/disposed of in accordance with USAF RCRA HazMat/Waste protocols.

Short term impacts related to hazardous materials and waste from construction and demolition are anticipated as a result of the Proposed Action. These impacts would be limited to exposure to waste materials generated during the construction/demolition process, and are not anticipated to be hazardous. Hazardous materials screening and sampling has identified the presence of asbestos within the existing facility. All hazardous materials identified would be abated prior to demolition. No concerns related to impacts to local landfills for solid and hazardous waste debris are anticipated, as several large scale regional landfills accepting solid and hazardous waste including lead based paint are present within reasonable distances from the area of the Proposed Action.

State and regional environmental databases were reviewed in relation to the project site, and no spills or other records of hazardous materials in the vicinity were identified during the screening process. Lead and Polychlorinated Biphenyls (PCBs) were not found above regulatory limits and remediation would not be required. Long-term impacts related to hazardous materials and waste are not anticipated to result from the Proposed Action, as no change in mission activities would increase risk of exposure. Over all there would be no significant impacts resulting from hazardous materials and waste under Proposed Action.

Alternative 2 - No Action Alternative

Under the no action alternative there would be no significant impacts to hazardous materials or hazardous waste.

3.6 Biological/Natural Resources

Stockbridge Test Annex (STA) Considerations:

The STA has little elevation change with the high point at approximately 1290 feet above sea level and lowest point at approximately 1250 feet. This allows for a moderate to gentle sloping relief. Old agricultural practices on and around the site have enabled a broad scope approach to view the parcel in three areas; the northern portion, the middle portion and the southern portion.

The northern portion is dominated by mature deciduous and coniferous trees. These mature woods are generally found on the eastern and southern portion of this area. A large Sugar maple (*Acer saccharum*) and American Beech (*Fagus grandifolia*) hardwood stand encompasses the majority of this portion, with a smaller planted stand of mature conifers along the southern portion. The upper northwest corner is an open area that is vegetated with pioneer species such as goldenrod (*Solidago spp.*), multi-flora rose (*Rosa multiflora*), hawthorns (*Crataegus spp.*) and buckthorn (*Rhamnus spp.*).



Figure 6: Stockbridge Test Annex boundary and proposed location of new equipment (purple).

The middle portion of the site includes an area of sparsely vegetated conifers, a small stand of invasive species, an area of mixed woods and a stand of mature hardwoods. The eastern third of this area contains a stand of mature hardwoods. These hardwoods are categorized as a Sugar maple-Beech cover type. The western two thirds of this portion show signs of previous disturbance, with an area vegetated by the Tree-of-Heaven (*Ailanthus altissima*), an invasive species. This area transitions into a mixed stand of deciduous trees which then transitions into an open area that is somewhat sparsely vegetated by conifers. This section abuts the UAV runway testing site, a cleared area of approximately 5 acres with grass bordering the runways. Two steel containers are situated there, used for housing the testing equipment and personnel.

The southern or lower portion of the site that abuts Burses Road contains most of the facility buildings and driveway system. This area is primarily vegetated by pioneer species such as pin cherry (*Prunus pennsylvanica*), red maple (*Acer rubrum*), buckthorn, hawthorn, multi-flora rose, raspberries (*Rubus spp.*) and goldenrod. A small portion of this area contains an area along the western edge of 20-30 year old mixed hardwoods.

Proposed Action: The Proposed Action would occur within the green space directly adjacent to the driveway and buildings region (see Figure 6) requiring no impact to the majority of vegetation and forest resources. The Proposed Action alternative is planned to have disturbed areas reclaimed and re-vegetated with the present types of flora which is currently mowed and maintained.

Alternative 2: No Action

The No-Action and other alternatives would have no substantial adverse impact to natural communities due to lack of excavations.

Newport Test Annex (NTA)

Considerations: The Newport Test Annex is a facility which is comprised of 2 adjacent hilltop sites about 1.5 miles apart separated by a small valley of privately owned land and highway. The sites were selected for their elevation and relation to one another for operational experimentation, and have been utilized for decades in the discipline of testing radio frequencies and antenna radio patterns on aircraft in a simulated flight environment.

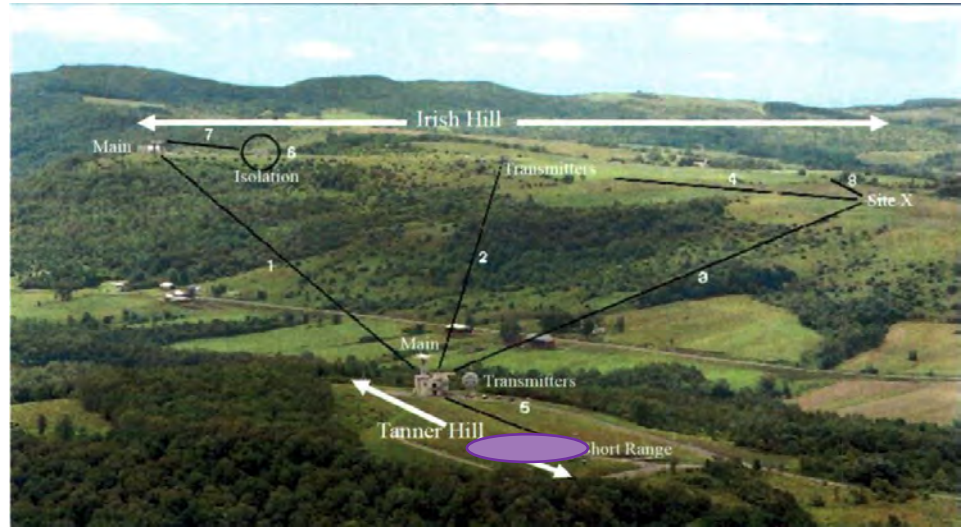


Figure 7: Newport Test annex facilities and proposed location of HF Antenna (purple)

The sites are predominantly green space, mowed and maintained for operational security and program operations. Both hilltop sites are surrounded by mid successional hardwood forests and early successional shrub and tall grass regions containing species such as goldenrod, multi-flora rose, hawthorns and buckthorn. The sites contain rows of and singular trees intermingled in the green spaces. Both hilltop sites feature simple access roads to the various facilities; some small impervious parking spaces are present adjacent to the buildings.

Proposed Action: The Proposed Actions at the NTA would occur within the currently maintained and mowed green spaces or within gravel hardpan parking and storage areas resulting in no disruption to current native flora on the site. Following excavation of the site and demolition and removal of the adjacent buildings the sites being demolished would be returned to green space.

Alternative 2 - No Action Alternative

Under the no action alternative there would be no significant impacts to biological/natural resources.

3.6.1 Threatened or Endangered Species

Proposed Action:

The United States Department of Interior-Fish and Wildlife Service (USDOI-FWS) Information for Planning and Consultation (IPAC) tool was used on April 4th 2022 to acquire information about the potential for this action to impact any threatened or endangered species, migratory birds or critical wildlife habitats. (See Appendix D). USDOI-FWS correspondence on previous AFRL projects at the STA mentioned three federally listed or proposed endangered or threatened species under federal jurisdiction for Madison County (STA location). These species were identified as the Chittenango ovate amber snail (*Novisuccinea chittenangoensis*), American hart's-tongue fern (*Asplenium scolopendrium* var. *Americana*), and Indiana bat (*Myotis sodalis*). Based on review of the species fact sheets, one threatened species (*Novisuccinea chittenangoensis*) is not likely to exist in the project area. IPAC analysis also confirms there are no currently listed threatened or endangered species in the immediate project area at any of the sites listed in the Proposed Action.

In addition, no habitat in the project impact area is currently designated or proposed “critical habitat” in accordance with the provisions of the Endangered Species Act. Similarly, the No-Action and other alternatives do not present substantial potential adverse impacts on Threatened and Endangered species since their physical imprints are less than that of the Proposed Action.

The New York State Department of Environmental Conservation (NYSDEC), New York Natural Heritage Program’s Environmental Resources Mapper was consulted on April 23rd 2022 regarding the potential presence of state listed species, significant natural communities, or other significant habitats on or adjacent to the project site. Guidance on use of the mapping tool and requesting a formal screening reads:

*“If your project site does not fall within an area displayed in the Rare Plants and Rare Animals layer or in the Significant Natural Communities layer, then New York Natural Heritage has no records to report in the vicinity of your project site. **Submitting a project screening request to NY Natural Heritage is not necessary.**”*

All activities listed in the Proposed Action were clear of any geospatial layers indicating potential presence of state listed species, significant natural communities, or other significant habitats. As a result AFRL is not required to submit a project screening request to the NY Natural Heritage Program.

The currently unlisted candidate species the Monarch Butterfly, *Danaus plexippus*, was identified for both project areas at the NTA and STA. While currently not listed, agencies are **not required** to consider with USDOI-FWS under section 7 of the Endangered Species Act, but their consideration and conservation is encouraged. Eastern Monarch butterflies undergo long-distance migration and would spend milder months in climates like those listed in the project area before migrating to overwintering grounds. One particularly critical component to the reproductive process for this species is the obligate milkweed (primarily *Asclepias spp.*) host plant which is common throughout

most of New York State. When considering the current land use of the regions described in the Proposed Action, they are primarily mowed green spaces which contain grasses which are maintained for safety and operational security of the sites, another space is a gravel driveway/storage pad space. These yard-like green spaces are not currently housing the milkweed plant and as a result would not impact Monarch butterfly reproduction.

Alternative 2 - No Action Alternative

Under the no action alternative there would be no significant impacts to threatened or endangered species or critical habitats.

3.6.2 Migratory Birds and Bald/Golden Eagle Protection

Utilizing the USDOJ-FWS IPAC tool, AFRL is able to review the presence of migratory bird species and protected eagle species which may occur within the proposed project area. Review of these species and their behaviors, habitat and probability of presence is then compared to the actions proposed to determine likelihood of the actions having an effect on the species.

Proposed Action: The species listed for the STA are the Bald Eagle *Haliaeetus leucocephalus*, and the Lesser Yellowlegs *Tringa flavipes*. The Newport location review mentioned 3 species to consider; the Bald Eagle *Haliaeetus leucocephalus*, the Golden Eagle *Aquila chrysaetos*, and the Bobolink *Dolichonyx oryzivorus*.

A review of the complete FWS species profile for the Lesser Yellowlegs describes it as a medium-sized, slender, long-legged shorebird which forages for aquatic and terrestrial invertebrates. Breeding occurs in boreal forest or forest/tundra edge systems and nesting occurs in small depressions on the ground lined with materials from the immediate vicinity of the region. The probability of presence tool lists 2 weeks in the month of August where the species has the chance to be present in the vicinity of the STA proposed location. This estimate is consistent with the species profile which mentions: "As a complete migrant, Lesser Yellowlegs occurs in high numbers in interior North America in spring and fall as well as the Atlantic coast in the fall." The action area in the STA is a relatively small region of mowed to yard length grass which is not in the immediate vicinity of shore or boreal/tundra habitats listed in the species profile. The lack of appropriate habitat (shores, marshes, tundra, and boreal forest) and short duration of possible presence in the region suggests no impact to the Greater Yellowlegs from the proposed or no action alternatives.

The Bald Eagle is protected under the Bald and Golden Eagle Protection Act which prohibits "take" of these species including disturbance which is defined as any action "that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior" (50 CFR 22.6). The New York State Department of Environmental Conservation (NYSDEC), New York Natural Heritage Program's Environmental Resources Mapper was consulted regarding the potential presence of known Bald Eagle nesting sites and did not reveal nesting locations within the 660 foot buffer to nest sites. As a result, a determination of "Not likely to disturb nesting Bald

Eagles” was added to the Species Conclusions Table (Appendix E). AFRL Natural Resources Staff have surveyed each site and were also not able to identify any Bald Eagle nesting sites within the 660 foot limitation at the NTA or STA. Because suitable habitat for this species is likely to exist near the Proposed Action area, resident staff to these locations would notify of any changes of nesting eagles within the 660’ buffer to the Proposed Action areas.

The Bobolink (*Dolichonyx oryzivorus*) USDO-I-FWS fact sheet is incomplete and as recommended, the Cornell University Bird Lab information is used for consideration. Project areas as outlined in the Proposed Action occur within the breeding range of the Bobolink. As ground nesters who prefer grassland habitats, this species is likely to be in the habitats surrounding the Proposed Action areas, in semi improved, occasionally mowed areas hundreds of feet from the proposed action site. As a result, a survey of the action area for nesting sites would be performed to identify any potential disturbance to nesting Bobolinks. The probability of presence estimates breeding for the Bobolink to occur from mid-May through August with the greatest probability of presence being late July. Timing construction to minimize Bobolink breeding disturbances would occur, as feasible.

The Golden Eagle *Aquila chrysaetos*, is a raptor species which migrates through the northeastern US. It was mentioned as part of the IPA review for the NTA location and its probability of presence was low for most of the year with one week in March having the greatest probability of presence. Like the Bald Eagle, the Golden Eagle is protected under the Bald and Golden Eagle Protection Act which prohibits “take” of these species including disturbance which is defined as any action “*that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior*” (50 CFR 22.6).” Sites listed in the Proposed Action are within migratory corridors for this species and do not occur in regions with suitable habitat for nesting of Golden Eagles. As cliff nesters, the species is unlikely to nest on the immediate properties listed. As a result, there is no anticipated effect from either the proposed or no action alternative.

As with any appurtenances which protrude from the ground, collisions with birds of any kind are possible. AFRL/RI notes that there is a chance birds of any species could strike the antennas or towers, however, based on the several other features on site currently that are similar in size and shape, there is no anticipated effect on species as the site managers have not seen any notable bird impacts.

Alternative 2 - No Action Alternative

Under the no action alternative there would be no significant impacts to migratory birds or eagles.

3.7 Cultural Resources

The resource area the alternatives have the potential to affect include the Tanner Hill site, the Irish Hill Site and the Stockbridge Test Annex in the immediate vicinity of the Proposed Actions. The area within the limits of the Proposed Action has the potential to contain cultural resources, including

archaeological artifacts, though unlikely due to a history of previous disturbance and fill etc. The surrounding area also has the potential to include archeological resources. The Proposed Action was analyzed to determine the potential impacts to these resources in regard to state and tribal historic protection offices (SHPO, THPO).

The STA falls within the heartland of the Historic Oneida Iroquois and is within the boundaries of the Oneida Indian Nation (OIN) land claim. Consultations with OIN in 1997 determined the site was important to the culture and traditions of the Oneida. However, the 2007 AFRL/RI Integrated Cultural Resources Management Plan (ICRMP) states that Stage 1B field investigations were conducted in 1999 and the effort failed to locate any archaeological sites of significance.

Proposed Action: For this project in particular the disturbed area is in previously heavily tilled farmland, therefore, it is anticipated that the reserved tribal rights would not be impaired by any of the proposed alternatives, including the No-Action alternative.

At the NTA, the Proposed Action involves the construction of new facilities and demolition of existing facilities on land that has already been disturbed/regraded. Based on previous consultations and the 2022 Historical Building Inventory, AFRL/RI believes the NYSHPO, would determine the buildings scheduled for demolition as not eligible for listing on the National Register for Historic Places and there are no other historic properties that would be affected by this undertaking.

Per 36 CFR 800.2 and DoDI 4710.02, consultations with the Oneida Indian Nation, Onondaga Nation, and St. Regis Mohawk Tribal Historic Preservation Offices as well as the New York State Office of Parks, Recreation and Historic Preservation State Historic Preservation Office (NYSHPO) were initiated on May 6, 2022. Each entity was provided with the project proposal, an aerial photo depicting the proposed site, and a detailed memo that explains the extent of the project.

On May 31st 2022, a response (Appendix F) from the OIN Historical Resources Specialist Jesse Bergevin stated that after review of the Proposed Action that: *“The Oneida Indian Nation concurs with the U.S. Air Force and Air Force Research Laboratory/Information Directorate that the Projects will have no effect on historic properties listed in or eligible for listing in the National Register of Historic Places.”*

On May 10th 2022, AFRL/RI received a phone call in which the Mr. Anthony Gonyea of the Onondaga Nation Historic Preservation Office which informed AFRL/RI that geographically separated units in Stockbridge, Newport (Tanner and Irish Hill) and Verona are outside the Onondaga Nation's area of concern and the Onondaga Nation is not interested in receiving Section 106 Consultation correspondence regarding undertakings at those locations. A follow up email was sent on the same date to confirm and is found in Appendix F.

The St. Regis Mohawk tribe did not respond to AFRL/RI's attempts at correspondence within the allotted timeframe or at any time since. In past consultation the St. Regis Mohawk Tribe has stated they have no land claims on the STA, and have not had provided comments on similar undertakings at the NTA.

Also on May 31st 2022, AFRL/RI received a letter (Appendix G) from NYSHPO which grants concurrence that the project “will have No Historic Properties Affected on properties eligible for or listed on the National Register of Historic Places.”

Therefore, based on the above listed consultations AFRL/RI anticipates no historic properties affected and tribal rights would not be impaired by the proposed action.

No-Action alternative: The No-Action alternative does not present a potential to adversely impact cultural resources.

3.8 Earth Resources (Geology/Soils/Topography)

Sitting atop hills in the central New York State region, both the NTA and STA are relatively flat with undulating landscapes. Elevation changes considerably in adjacent land parcels but not on USAF owned lands. Regions of each location see exposed bedrock in areas and also contain soils at depths that have been used as agricultural fields in the past. The STA in particular has been used as a military research facility with a history of soil disturbance to achieve various experimentation goals during different eras in military research resulting in different levels of analysis and consideration of the earth resources at the site. The sites are popular for their elevation and clear line of sight.

Proposed Action:

- 3.8.1 **Geology:** The process outlined in the Proposed Action includes small amounts of soil excavation for foundations of buildings and towers at both the NTA and STA. However, these excavations would not occur at a depth or magnitude that would alter geological features on any of the properties. There are no anticipated impacts on Geology from any of the alternatives proposed.
- 3.8.2 **Soils:** The construction of the facilities in the Proposed Action does require surface excavation for the foundations of the antenna buildings, the antenna structures themselves and the walk up tower. These actions would temporarily have a short durational impact to the soils in the immediate vicinity of the Proposed Actions. Excavation in the action area at the Tanner Hill facility and Irish Hill Facility would occur in areas which contain substrate which has been trucked in as fill (either topsoil or gravel) and most of which was recently disturbed for a construction project immediately adjacent to the area.
- Soils at the STA include: Aurora silt loam, Cazenovia silt loam, Honeoye silt loam, Lima silt loam, Lyons silt loam, Ovid silt loam, and Wassaic silt loam. The Proposed Action would occur in a small previously disturbed section of currently maintained green space and would not include the disturbance of any lands beyond what is necessary for installation of the equipment and structure. Again, short duration and minor impacts to soils at the site would occur.
- 3.8.3 **Topography:** There is no anticipated change in topography as the excavations proposed are relatively small in scope and magnitude, therefore no significant change in shape or structure of the landscape is anticipated from any of the actions described.

Alternative 2 - No Action Alternative

The No-Action alternative and the other alternatives do not present a potential to adversely impact earth resources.

3.9 Socioeconomic

The addition of the facilities described in the Proposed Action would enhance the missions of the already active and operational NTA and STA sites. These sites are located in rural regions of upstate New York with low population densities. As previously mentioned, the project has been analyzed for potential threats to human health and safety and deemed safe by the Air Force School of Aerospace Medicine. The period of construction of these facilities may temporarily increase the demand for jobs or housing for workers for the short duration of the project but is unlikely as the work can likely be performed by existing contractors within the region. The operation of these additional facilities would not require additional AFRL or contractor staff and as a result there is no anticipated changes to long term housing and income in the region.

No Action Alternative: The No-Action alternative would have no impact on socioeconomic concerns.

3.10 Environmental Justice

AFRL/RI is aware of the potential for initiatives undertaken by the USAF to potentially impact individuals and groups of people, especially those in economically or racially disadvantaged communities. Historically, initiatives with greater environmental impacts are often cited in regions of low economic prosperity or in communities of individuals who are less likely to oppose such actions due to circumstance of race, education or national origin. Analysis to avoid this phenomenon was performed by AFRL/RI.

Proposed Action: Potential impacts to Environmental Justice and Minority/Low Income populations were considered in the scoping of this project. A small population of Minority/Low income individuals are located in the town of Newport (3 miles from NTA) and a larger population in the cities of Utica and Rome (~15-20 miles from all sites). Access to these sites by individuals is very unlikely. While there is potential change in the view-shed of the sites with new structures being added, the overall appearance of the sites remains largely unchanged and difficult to see from distances mentioned above. As the character of these sites, which have served as military research facilities for roughly 70 years, is not being altered, nor would the character of the surrounding communities change. Therefore, there are currently no environmental justice concerns associated with the Proposed Action.

No Action Alternative: The No-Action alternative would have no impact on environmental justice concerns.

3.11 Other NEPA Considerations

3.11.1 Noise

Proposed Action: The Proposed Actions are located in rural regions of Oneida and Madison counties, not in close proximity to human habitation. Noise associated with the construction and demolition of the proposed action is not near any sensitive receptors or centers of high population. Anticipated noises from construction and demolition equipment, transportation trucks and other

equipment will occur for short periods of time throughout daylight working hours for the short duration in which demolition and construction occur.

Furthermore, the HF BLOS experimental program would consist of radio frequency communications transmissions that do not produce ambient noise level increases.

No Action Alternative: The No-Action alternative would have no impact on noise.

3.11.2 Parks

No designated parks are located within or adjacent to the project sites. No properties purchased with Land and Water Conservation funds would be required for this project. No park land would be utilized for this project. All properties surrounding the project site are privately owned. All Alternatives present similar levels of potential adverse impacts, virtually none.

3.11.3 Transportation

Rural highways and county roads provide access to both the STA and NTA. Traffic volumes on these roads are very low and flow continuously.

Preferred Alternative: Construction activity would result in minor increases to local traffic; however, these increases would be temporary and cease once the project is complete. Other than a temporary potential short term increase in traffic on the roads leading to the described facilities, there would be no long term change in level of traffic to or from this property as a result of the Proposed Action, or from the No-Action and other alternatives, resulting in minimal impact.

No Action Alternative: The No-Action alternative would have no impact on transportation conditions.

3.11.4 Utilities

The NTA and STA are currently operating research facilities which are equipped with buried electronic and communications utilities needed to satisfy experimentation requirements.

Preferred Action: The nature of the experiments which will be enhanced by the proposed action will not require additional capabilities in utility services. However new utility resources will need to be installed to each new physical structure from nearby access to power and communications utilities. Buried utility trenches are included in the estimated disturbed substrate figures provided in 2.4.1.

No Action Alternative: The No-Action alternative would have no impact on utility considerations.

3.11.5 Relationship of Short-Term Uses and Long-Term Productivity

The relationship between short-term uses and enhancement of long-term productivity from implementation of the Proposed Action is evaluated from the standpoint of short-term effects and long-term effects. Short-term effects would typically be those associated with the construction and demolition activities described in the Proposed Action. The long-term enhancement of productivity

would be those effects associated with operation and maintenance of the Tanner Hill, Irish Hill and Stockbridge Test Annexes after implementation of the Proposed Action.

The Proposed Action represents an enhancement of long-term mission productivity for antenna transmitter operations for AFRL/RI. The negative effects of short-term operational changes during construction activities would be minor compared to the positive benefits from demolition of facilities in disrepair and capability enhancement. Immediate and long-term benefits would be realized for operation and maintenance after completion of the Proposed Action.

3.11.6 Irreversible and Irretrievable Commitments of Resources

This EA identifies any irreversible and irretrievable commitments of resources that would be involved in the-Proposed Action if implemented. An irreversible effect results from the use or destruction of resources (e.g., energy) that cannot be replaced within a reasonable time. An irretrievable effect results from loss of resources (e.g., endangered species) that cannot be restored as a result of the Proposed Action. The short-term irreversible commitments of resources that would occur would include planning and engineering costs, building materials/supplies and their cost, and use of energy resources during construction (labor, generation of fugitive dust emissions, and creation of temporary construction noise).

3.12 Cumulative Effects

This EA also considers the effects of cumulative impacts as required in 40 CFR 1508.1(g). Cumulative effects, as defined by the CEQ (40 CFR 1508.1(g)) are “effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions”. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.

Past actions include the demolition of Building 1600 and the subsequent construction of building 1609, both on Tanner Hill. Effects on these projects were similar in scope to those in the proposed action. Antiquated facilities were demolished and replaced with newer, safer construction resulting in short term impacts on Air Quality, water resources and noise or traffic. The cumulative effects of previous projects added to the construction of the HF antenna and building demolition of B1605, 1607 and 1640 represent little cumulative change at these sites. As facilities are removed from these sites, the addition of new facilities in their place reduces the cumulative impacts as novel lands and resources return and emerge.

4.0 LIST OF PREPARERS

This EA has been prepared under the direction of the Air Force Civil Engineer Center, United States Air Force, Air Force Material Command, Air Force Research Laboratory/Information Directorate (AFRL/RI).

The individuals that contributed to the preparation of this EA are listed below.

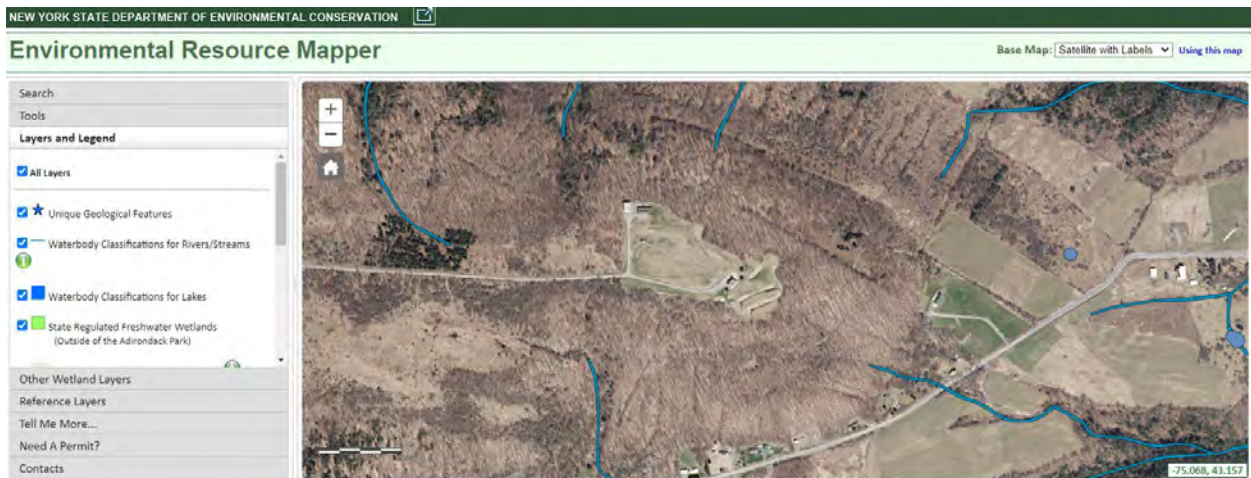
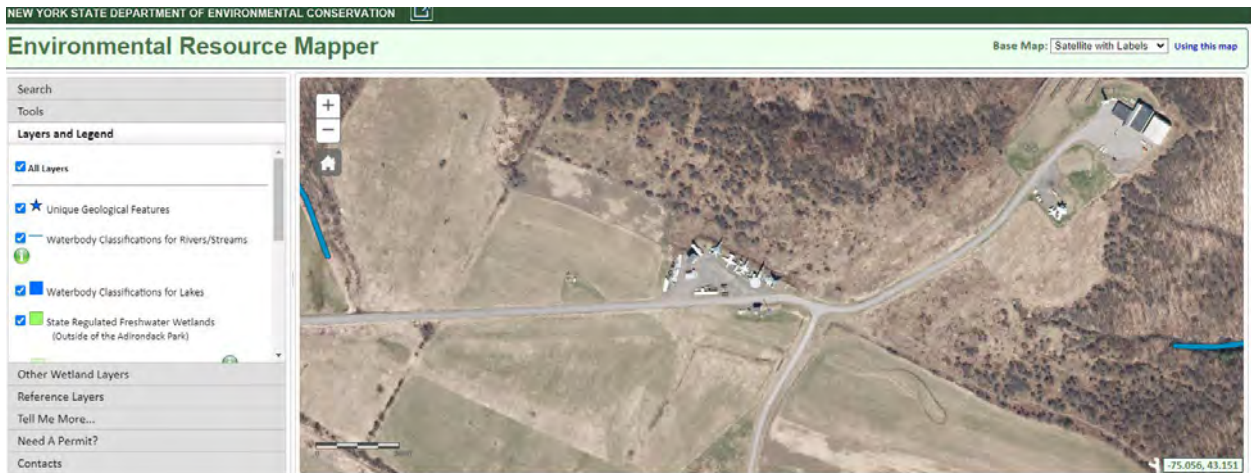
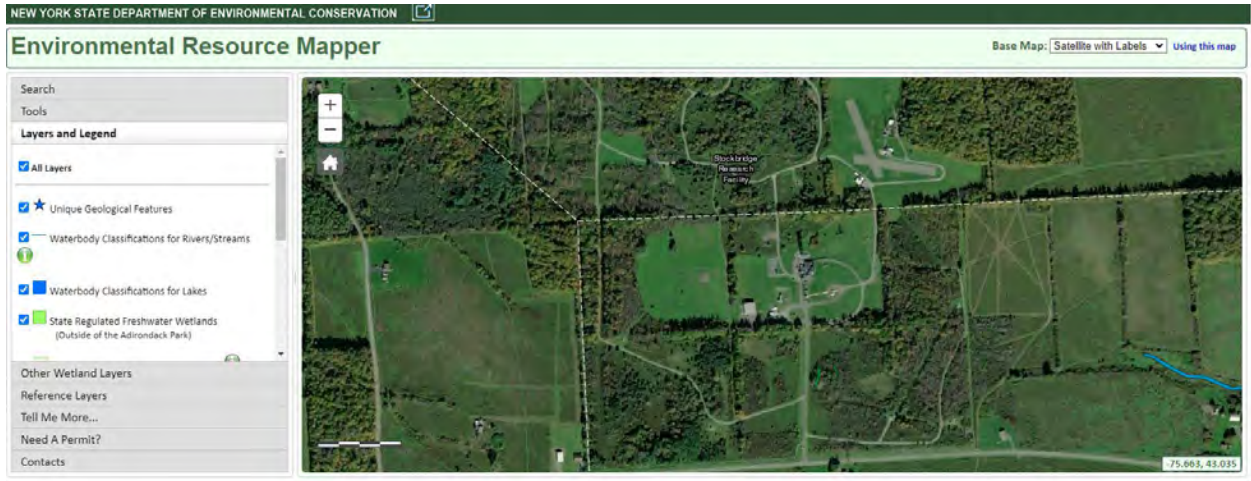
Name/ Organization	Resource Area	Years of Experience
Jeffrey Sann / AFRL	Natural Resources / NEPA	6
Jaclyn Holbritter / AFRL	Chief, RIOCV	20
John Heinig /AFRL	Technical Program Expert	30
Kendra Stagner /AFRL	Cultural Resources / Air Quality	3

5.0 LIST OF THOSE CONSULTED

List of those consulted:

Name	Organization
Sandie Doran	USFWS
Austin T. Bennet, Major	USAFSAM
Anthony Gonyea	Onondaga Nation Historic Preservation Office
James Carter	NY Parks Recreation and Historic Preservation
Jesse Bergevin	Oneida Indian Nation Historical Resources Specialist
Darren Bonaparte	Saint Regis Mohawk Tribe

Appendix A: NYSDEC Environmental Resource Mapper Wetlands and Streams Maps (Stockbridge, Irish Hill, Tanner Hill.)



Appendix B: ACAM Report, ACAM Detail Report

AIR CONFORMITY APPLICABILITY MODEL REPORT RECORD OF AIR ANALYSIS (ROAA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Manual 32-7002, Environmental Compliance and Pollution Prevention; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:

Base: ROME LAB
State: New York
County(s): Herkimer, Madison
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: BLOS- HF Antenna/Tower Construction Project

c. Project Number/s (if applicable):

d. Projected Action Start Date: 4 / 2023

e. Action Description:

2.4.1 Alternative 1 - (Preferred Alternative) - Construction of new facilities and demolition of auxiliary structures (B1605 & B1607) at preferred locations.

The proposed project includes the construction of two 100 ft. Beyond Line of Sight (BLOS) High Frequency (HF) (3-30 MHz) antennas. One at the Newport Research Facility Tanner Hill location, and one at Stockbridge Research Facility. BLOS function is to primarily communicate between Stockbridge and Kirtland AFB, NM and between Newport and Kirtland AFB, NM. Roughly 2000 miles. A 650 SF facility will be constructed at each HF antenna tower site for collection and interpretation of data received from each respective HF Antenna.

Each new HF Antenna support building will be constructed with a reinforced concrete foundation, CMU block walls with exterior insulation and cladding that is appropriate for the regional climate, metal roofing, and with infrastructure support systems sized to meet the building loads for each respective system. Buildings will not have restrooms or domestic water capabilities. Each new building will be constructed to meet SCIF security standards. A storage facility will be constructed on the Newport Test Annex No 2 Transmitter Site to replace a current facility that will be demolished as part of the site improvements on the Newport Test Annex Receiver Site.

Additionally this project proposes the construction an 80 ft. walk up tower facility on Irish Hill for experimentation in the microwave RF frequency range (30 MHz to the 300 GHz), Thz range and Optical frequency range. This new tower will be utilized in performing the same types of experimentation that is currently being performed at the Newport test site. The 80 foot walk up tower will replace an existing experimentation tower currently in use. All experimentation is covered by the current Form 5 authorization.

BLOS - HF Testing is not new or unique to Newport and Stockbridge. The frequency range of operation for both test sites includes testing in the 3 to 30 MHz (High Frequency HF) range. The proposed HF antennas will be located on a 100 ft. tower with the entire antenna footprint located within an 80 ft. radius security fence. The fence will prevent personnel from entering the antenna footprint and coming in contact with the tower structure during frequency transmission.

The proposed action also includes the demolition and removal of unoccupied Building 1605, and Building 1607 including all utilities and foundation, the site returned to grade, and re-seeded into green space.

AIR CONFORMITY APPLICABILITY MODEL REPORT RECORD OF AIR ANALYSIS (ROAA)

I. Point of Contact:

Name: Kendra Stagner
Title: GS-11, Biological Scientist
Organization: AFRL/RIOCV
Email: kendra.stagner.1@us.af.mil
Phone Number: 315-330-2576

2. Air Impact Analysis: Based on the attainment status at the action location, the requirements of the General Conformity Rule are:

applicable
 not applicable

Total net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving “steady state” (i.e., net gain/loss upon action fully implemented) emissions. The ACAM analysis used the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the USAF Air Emissions Guide for Air Force Stationary Sources, the USAF Air Emissions Guide for Air Force Mobile Sources, and the USAF Air Emissions Guide for Air Force Transitory Sources.

“Insignificance Indicators” were used in the analysis to provide an indication of the significance of potential impacts to air quality based on current ambient air quality relative to the National Ambient Air Quality Standards (NAAQSs). These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold for actions occurring in areas that are “Clearly Attainment” (i.e., not within 5% of any NAAQS) and the GCR de minimis values (25 ton/yr for lead and 100 ton/yr for all other criteria pollutants) for actions occurring in areas that are “Near Nonattainment” (i.e., within 5% of any NAAQS). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutant is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQSs. For further detail on insignificance indicators see chapter 4 of the Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide, Volume II - Advanced Assessments.

The action’s net emissions for every year through achieving steady state were compared against the Insignificance Indicator and are summarized below.

Analysis Summary:

2023

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.095	250	No
NOx	0.536	250	No
CO	0.687	250	No
SOx	0.002	250	No
PM 10	0.155	250	No
PM 2.5	0.021	250	No
Pb	0.000	25	No
NH3	0.000	250	No
CO2e	169.0		

2024 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR
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**AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)**

		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.000	250	No
NOx	0.000	250	No
CO	0.000	250	No
SOx	0.000	250	No
PM 10	0.000	250	No
PM 2.5	0.000	250	No
Pb	0.000	25	No
NH3	0.000	250	No
CO2e	0.0		

None of estimated annual net emissions associated with this action are above the insignificance indicators, indicating no significant impact to air quality. Therefore, the action will not cause or contribute to an exceedance on one or more NAAQSs. No further air assessment is needed.

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Date: 2022.07.06 08:02:22 -0400

Kendra Stagner, GS-11, Biological Scientist

6 July 2022

DATE

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

1. General Information

- Action Location

Base: ROME LAB
State: New York
County(s): Herkimer, Madison
Regulatory Area(s): NOT IN A REGULATORY AREA

- Action Title: BLOS- HF Antenna/Tower Construction Project

- Project Number/s (if applicable):

- Projected Action Start Date: 4 / 2023

- Action Purpose and Need:

The proposed actions at these research facilities will provide infrastructure to enhance the High Frequency (HF) capabilities of the communications missions conducted at and between these sites, the main RRS campus and other AFRL facilities beyond. HF modernization programs have been identified as a priority by both the Chief of Staff of the Air Force (CSAF) and the Vice-Chief of Staff of the Air Force (VCSAF) to address gaps identified by combatant commanders that could adversely impact our ability to meet mission requirements. Our existing Air Force HF radio capabilities suffer from gaps in technological innovation, operator skill, and network performance.

Investment in our USAF global HF infrastructure has been minimal to non-existent since the collapse of the Soviet Union and the end of the Cold War. Recent events and unanticipated threats to our primary BLOS communication infrastructure have combined to illustrate that an adjunct communication capability is necessary. Resilient, redundant, and contingency communications in support of Primary, Alternate, Contingency, and Emergency (PACE) planning are imperative to direct lethality from joint and combined forces. Our current HF networks, (some of which were established as far back as World War I), can no longer provide us this resiliency, unless we modernize using the latest technologies. The use of technologies such as moving to digital versus our current analog systems can provide capabilities that far exceed our current, historical 3 kilohertz analog voice and data quality. Intelligent recapitalization and technology insertion are required to provide both a greater capability and technological growth path to maintain mission capabilities in increasingly challenging operational environments.

- Action Description:

2.4.1 Alternative 1- (Preferred Alternative) - Construction of new facilities and demolition of auxiliary structures (B1605 & B1607) at preferred locations.

The proposed project includes the construction of two 100 ft. Beyond Line of Sight (BLOS) High Frequency (HF) (3-30 MHz) antennas. One at the Newport Research Facility Tanner Hill location, and one at Stockbridge Research Facility. BLOS function is to primarily communicate between Stockbridge and Kirtland AFB, NM and between Newport and Kirtland AFB, NM. Roughly 2000 miles. A 650 SF facility will be constructed at each HF antenna tower site for collection and interpretation of data received from each respective HF Antenna.

Each new HF Antenna support building will be constructed with a reinforced concrete foundation, CMU block walls with exterior insulation and cladding that is appropriate for the regional climate, metal roofing, and with infrastructure support systems sized to meet the building loads for each respective system. Buildings will not have restrooms or domestic water capabilities. Each new building will be constructed to meet SCIF security standards. A storage facility will be constructed on the Newport Test Annex No 2 Transmitter Site to replace a current facility that will be demolished as part of the site improvements on the Newport Test Annex Receiver Site.

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Additionally this project proposes the construction an 80 ft. walk up tower facility on Irish Hill for experimentation in the microwave RF frequency range (30 MHz to the 300 GHz). Thz range and Optical frequency range. This new tower will be utilized in performing the same types of experimentation that is currently being performed at the Newport test site. The 80 foot walk up tower will replace an existing experimentation tower currently in use. All experimentation is covered by the current Form 5 authorization.

BLOS - IIF Testing is not new or unique to Newport and Stockbridge. The frequency range of operation for both test sites includes testing in the 3 to 30 MHz (High Frequency HF) range. The proposed HF antennas will be located on a 100 ft. tower with the entire antenna footprint located within an 80 ft. radius security fence. The fence will prevent personnel from entering the antenna footprint and coming in contact with the tower structure during frequency transmission.

The proposed action also includes the demolition and removal of unoccupied Building 1605, and Building 1607 including all utilities and foundation, the site returned to grade, and re-seeded into green space.

- Point of Contact

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- Activity List:

	Activity Type	Activity Title
2.	Construction / Demolition	Demolition of Building 1605- Newport Tanner Hill
3.	Construction / Demolition	Demolition of Building 1640- Newport Irish Hill
4.	Construction / Demolition	Install HF antenna- Stockbridge
5.	Construction / Demolition	Install HF antenna- Newport Tanner Hill
6.	Construction / Demolition	Install Walk-Up Tower- Newport Irish Hill

Emission factors and air emission estimating methods come from the United States Air Force's Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

2. Construction / Demolition

2.1 General Information & Timeline Assumptions

- Activity Location

County: Herkimer
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Demolition of Building 1605- Newport Tanner Hill

- Activity Description:

The proposed action also includes the demolition and removal of unoccupied Building 1605

- Activity Start Date

Start Month: 4
Start Month: 2023

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- Activity End Date

Indefinite: False
End Month: 4
End Month: 2023

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.007670
SO _x	0.000129
NO _x	0.048434
CO	0.066646
PM10	0.014993

Pollutant	Total Emissions (TONs)
PM 2.5	0.001963
Pb	0.000000
NH ₃	0.000056
CO ₂ e	12.9

2.1 Demolition Phase

2.1.1 Demolition Phase Timeline Assumptions

- Phase Start Date

Start Month: 4
Start Quarter: 1
Start Year: 2023

- Phase Duration

Number of Month: 0
Number of Days: 21

2.1.2 Demolition Phase Assumptions

- General Demolition Information

Area of Building to be demolished (ft²): 4000
Height of Building to be demolished (ft): 15.5

- Default Settings Used: Yes

- Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Concrete/Industrial Saws Composite	1	8
Rubber Tired Dozers Composite	1	1
Tractors/Loaders/Backhoes Composite	2	6

- Vehicle Exhaust

Average Hauling Truck Capacity (yd³): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HHDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

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	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.1.3 Demolition Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Concrete/Industrial Saws Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0382	0.0006	0.2766	0.3728	0.0127	0.0127	0.0034	58.549
Rubber Tired Dozers Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Tractors/Loaders/Backhoes Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	Pb	NH ₃	CO _{2e}
LDGV	000.265	000.002	000.193	002.954	000.008	000.007		000.023	00324.970
LDGT	000.311	000.003	000.333	003.906	000.011	000.010		000.024	00419.211
HDGV	000.714	000.005	001.057	015.590	000.025	000.022		000.045	00768.410
LDDV	000.123	000.003	000.131	002.419	000.004	000.004		000.008	00313.914
LDDT	000.266	000.004	000.378	004.163	000.007	000.006		000.008	00446.063
HDDV	000.400	000.013	004.413	001.518	000.166	000.153		000.027	01460.624
MC	002.293	000.003	000.777	013.149	000.028	000.025		000.053	00398.589

2.1.4 Demolition Phase Formula(s)

- Fugitive Dust Emissions per Phase

$$PM10_{fd} = (0.00042 * BA * BH) / 2000$$

PM10_{fd}: Fugitive Dust PM 10 Emissions (TONs)
 0.00042: Emission Factor (lb/ft³)
 BA: Area of Building to be demolished (ft²)
 BH: Height of Building to be demolished (ft)
 2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE_{POL}: Construction Exhaust Emissions (TONs)
 NE: Number of Equipment
 WD: Number of Total Work Days (days)
 H: Hours Worked per Day (hours)
 EF_{POL}: Emission Factor for Pollutant (lb/hour)
 2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = BA * BH * (1 / 27) * 0.25 * (1 / HC) * HT$$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
 BA: Area of Building being demolish (ft²)
 BH: Height of Building being demolish (ft)
 (1 / 27): Conversion Factor cubic feet to cubic yards (1 yd³ / 27 ft³)
 0.25: Volume reduction factor (material reduced by 75% to account for air space)

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HC: Average Hauling Truck Capacity (yd³)
 (1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd³)
 HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL} : Vehicle Emissions (TONs)
 VMT_{VE} : Vehicle Exhaust Vehicle Miles Travel (miles)
 0.002205: Conversion Factor grams to pounds
 EF_{POL} : Emission Factor for Pollutant (grams/mile)
 VM: Vehicle Exhaust On Road Vehicle Mixture (%)
 2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

VMT_{WT} : Worker Trips Vehicle Miles Travel (miles)
 WD: Number of Total Work Days (days)
 WT: Average Worker Round Trip Commute (mile)
 1.25: Conversion Factor Number of Construction Equipment to Number of Works
 NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL} : Vehicle Emissions (TONs)
 VMT_{WT} : Worker Trips Vehicle Miles Travel (miles)
 0.002205: Conversion Factor grams to pounds
 EF_{POL} : Emission Factor for Pollutant (grams/mile)
 VM: Worker Trips On Road Vehicle Mixture (%)
 2000: Conversion Factor pounds to tons

3. Construction / Demolition

3.1 General Information & Timeline Assumptions

- Activity Location

County: Herkimer
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Demolition of Building 1640- Newport Irish Hill

- Activity Description:

The proposed action also includes the demolition and removal of unoccupied Building 1640 including all utilities and foundation, the site returned to grade, and re-seeded into green space.

- Activity Start Date

Start Month: 4
Start Month: 2023

- Activity End Date

Indefinite: False
End Month: 4
End Month: 2023

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- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.007510
SO _x	0.000124
NO _x	0.046670
CO	0.066039
PM 10	0.006705

Pollutant	Total Emissions (TONs)
PM 2.5	0.001902
Pb	0.000000
NH ₃	0.000045
CO ₂ e	12.3

3.1 Demolition Phase

3.1.1 Demolition Phase Timeline Assumptions

- Phase Start Date

Start Month: 4
 Start Quarter: 1
 Start Year: 2023

- Phase Duration

Number of Month: 0
 Number of Days: 21

3.1.2 Demolition Phase Assumptions

- General Demolition Information

Area of Building to be demolished (ft²): 737
 Height of Building to be demolished (ft): 31

- Default Settings Used: Yes

- Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Concrete/Industrial Saws Composite	1	8
Rubber Tired Dozers Composite	1	1
Tractors/Loaders/Backhoes Composite	2	6

- Vehicle Exhaust

Average Hauling Truck Capacity (yd³): 20 (default)
 Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

3.1.3 Demolition Phase Emission Factor(s)

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Construction Exhaust Emission Factors (lb/hour) (default)

Concrete/Industrial Saws Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0382	0.0006	0.2766	0.3728	0.0127	0.0127	0.0034	58.549
Rubber Tired Dozers Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Tractors/Loaders/Backhoes Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	Pb	NH ₃	CO _{2e}
LDGV	000.265	000.002	000.193	002.954	000.008	000.007		000.023	00324.970
LDGT	000.311	000.003	000.333	003.906	000.011	000.010		000.024	00419.211
HDGV	000.714	000.005	001.057	015.590	000.025	000.022		000.045	00768.410
LDDV	000.123	000.003	000.131	002.419	000.004	000.004		000.008	00313.914
LDDT	000.266	000.004	000.378	004.163	000.007	000.006		000.008	00446.063
HDDV	000.400	000.013	004.413	001.518	000.166	000.153		000.027	01460.624
MC	002.293	000.003	000.777	013.149	000.028	000.025		000.053	00398.589

3.1.4 Demolition Phase Formula(s)

- Fugitive Dust Emissions per Phase

$$PM10_{FD} = (0.00042 * BA * BH) / 2000$$

- PM10_{FD}: Fugitive Dust PM 10 Emissions (TONs)
- 0.00042: Emission Factor (lb/ft³)
- BA: Area of Building to be demolished (ft²)
- BH: Height of Building to be demolished (ft)
- 2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

- CEE_{POL}: Construction Exhaust Emissions (TONs)
- NE: Number of Equipment
- WD: Number of Total Work Days (days)
- H: Hours Worked per Day (hours)
- EF_{POL}: Emission Factor for Pollutant (lb/hour)
- 2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = BA * BH * (1 / 27) * 0.25 * (1 / HC) * HT$$

- VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
- BA: Area of Building being demolish (ft²)
- BH: Height of Building being demolish (ft)
- (1 / 27): Conversion Factor cubic feet to cubic yards (1 yd³ / 27 ft³)
- 0.25: Volume reduction factor (material reduced by 75% to account for air space)
- HC: Average Hauling Truck Capacity (yd³)
- (1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd³)
- HT: Average Hauling Truck Round Trip Commute (mile/trip)

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$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL} : Vehicle Emissions (TONs)
 VMT_{VE} : Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
 EF_{POL} : Emission Factor for Pollutant (grams/mile)
 VM : Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

VMT_{WT} : Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL} : Vehicle Emissions (TONs)
 VMT_{WT} : Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
 EF_{POL} : Emission Factor for Pollutant (grams/mile)
 VM : Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

4. Construction / Demolition

4.1 General Information & Timeline Assumptions

- Activity Location

County: Madison

Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Install HF antenna- Stockbridge

- Activity Description:

The proposed project includes the construction of two 100 ft. Beyond Line of Sight (BLOS) High Frequency (HF) (3-30 MHz) antennas.

Each new HF Antenna support building will be constructed with a reinforced concrete foundation, CMU block walls with exterior insulation and cladding that is appropriate for the regional climate, metal roofing, and with infrastructure support systems sized to meet the building loads for each respective system. Buildings will not have restrooms or domestic water capabilities. Each new building will be constructed to meet SCIF security standards

- Activity Start Date

Start Month: 4

Start Month: 2023

- Activity End Date

Indefinite: False

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End Month: 4
End Month: 2023

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.032166
SO _x	0.000591
NO _x	0.180974
CO	0.219133
PM 10	0.063595

Pollutant	Total Emissions (TONs)
PM 2.5	0.007109
Pb	0.000000
NH ₃	0.000096
CO ₂ e	57.4

4.1 Site Grading Phase

4.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date

Start Month: 4
Start Quarter: 1
Start Year: 2023

- Phase Duration

Number of Month: 0
Number of Days: 21

4.1.2 Site Grading Phase Assumptions

- General Site Grading Information

Area of Site to be Graded (ft²): 6400
Amount of Material to be Hauled On-Site (yd³): 620
Amount of Material to be Hauled Off-Site (yd³): 0

- Site Grading Default Settings

Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Graders Composite	1	6
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	6
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust

Average Hauling Truck Capacity (yd³): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HLDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

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	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

4.1.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Tractors/Loaders/Backhoes Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	Pb	NH ₃	CO _{2e}
LDGV	000.265	000.002	000.193	002.954	000.008	000.007		000.023	00324.970
LDGT	000.311	000.003	000.333	003.906	000.011	000.010		000.024	00419.211
HDGV	000.714	000.005	001.057	015.590	000.025	000.022		000.045	00768.410
LDDV	000.123	000.003	000.131	002.419	000.004	000.004		000.008	00313.914
LDDT	000.266	000.004	000.378	004.163	000.007	000.006		000.008	00446.063
HDDV	000.400	000.013	004.413	001.518	000.166	000.153		000.027	01460.624
MC	002.293	000.003	000.777	013.149	000.028	000.025		000.053	00398.589

4.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase

$$PM10_{FD} = (20 * ACRE * WD) / 2000$$

- PM10_{FD}: Fugitive Dust PM 10 Emissions (TONs)
- 20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
- ACRE: Total acres (acres)
- WD: Number of Total Work Days (days)
- 2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

- CEE_{POL}: Construction Exhaust Emissions (TONs)
- NE: Number of Equipment
- WD: Number of Total Work Days (days)
- H: Hours Worked per Day (hours)
- EF_{POL}: Emission Factor for Pollutant (lb/hour)
- 2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = (HA_{Onsite} + HA_{Offsite}) * (1 / HC) * HT$$

- VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

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HA_{Onsite} : Amount of Material to be Hauled On-Site (yd³)
 $HA_{Offsite}$: Amount of Material to be Hauled Off-Site (yd³)
 HC: Average Hauling Truck Capacity (yd³)
 (1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd³)
 HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL} : Vehicle Emissions (TONs)
 VMT_{VE} : Vehicle Exhaust Vehicle Miles Travel (miles)
 0.002205: Conversion Factor grams to pounds
 EF_{POL} : Emission Factor for Pollutant (grams/mile)
 VM: Vehicle Exhaust On Road Vehicle Mixture (%)
 2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

VMT_{WT} : Worker Trips Vehicle Miles Travel (miles)
 WD: Number of Total Work Days (days)
 WT: Average Worker Round Trip Commute (mile)
 1.25: Conversion Factor Number of Construction Equipment to Number of Works
 NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL} : Vehicle Emissions (TONs)
 VMT_{WT} : Worker Trips Vehicle Miles Travel (miles)
 0.002205: Conversion Factor grams to pounds
 EF_{POL} : Emission Factor for Pollutant (grams/mile)
 VM: Worker Trips On Road Vehicle Mixture (%)
 2000: Conversion Factor pounds to tons

4.2 Trenching/Excavating Phase

4.2.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date

Start Month: 4
 Start Quarter: 1
 Start Year: 2023

- Phase Duration

Number of Month: 0
 Number of Days: 21

4.2.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information

Area of Site to be Trenched/Excavated (ft²): 1800
 Amount of Material to be Hauled On-Site (yd³): 0
 Amount of Material to be Hauled Off-Site (yd³): 0

- Trenching Default Settings

Default Settings Used: Yes

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Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust

Average Hauling Truck Capacity (yd³): 20 (default)

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDBGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDBGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

4.2.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Tractors/Loaders/Backhoes Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	Pb	NH ₃	CO _{2e}
LDGV	000.265	000.002	000.193	002.954	000.008	000.007		000.023	00324.970
LDGT	000.311	000.003	000.333	003.906	000.011	000.010		000.024	00419.211
HDBGV	000.714	000.005	001.057	015.590	000.025	000.022		000.045	00768.410
LDDV	000.123	000.003	000.131	002.419	000.004	000.004		000.008	00313.914
LDDT	000.266	000.004	000.378	004.163	000.007	000.006		000.008	00446.063
HDDV	000.400	000.013	004.413	001.518	000.166	000.153		000.027	01460.624
MC	002.293	000.003	000.777	013.149	000.028	000.025		000.053	00398.589

4.2.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase

$$PM10_{FD} = (20 * ACRE * WD) / 2000$$

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

PM10_{FD}: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd³)
HA_{OffSite}: Amount of Material to be Hauled Off-Site (yd³)
HC: Average Hauling Truck Capacity (yd³)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd³)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

5. Construction / Demolition

5.1 General Information & Timeline Assumptions

- Activity Location

County: Herkimer
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Install HF antenna- Newport Tanner Hill

- Activity Description:

The proposed project includes the construction of two 100 ft. Beyond Line of Sight (BLOS) High Frequency (HF) (3-30 MHz) antennas.

Each new HF Antenna support building will be constructed with a reinforced concrete foundation, CMU block walls with exterior insulation and cladding that is appropriate for the regional climate, metal roofing, and with infrastructure support systems sized to meet the building loads for each respective system. Buildings will not have restrooms or domestic water capabilities. Each new building will be constructed to meet SCIF security standards. A storage facility will be constructed on the Newport Test Annex No 2 Transmitter Site to replace a current facility that will be demolished as part of the site improvements on the Newport Test Annex Receiver Site.

- Activity Start Date

Start Month: 4
Start Year: 2023

- Activity End Date

Indefinite: False
End Month: 4
End Year: 2023

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.032153
SO ₂	0.000590
NO _x	0.180828
CO	0.219082
PM 10	0.062212

Pollutant	Total Emissions (TONs)
PM 2.5	0.007104
Pb	0.000000
NH ₃	0.000095
CO ₂ e	57.3

5.1 Site Grading Phase

5.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date

Start Month: 4
Start Quarter: I
Start Year: 2023

- Phase Duration

Number of Month: 0
Number of Days: 21

5.1.2 Site Grading Phase Assumptions

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- General Site Grading Information

Area of Site to be Graded (ft²): 6400
 Amount of Material to be Hauled On-Site (yd³): 590
 Amount of Material to be Hauled Off-Site (yd³): 0

- Site Grading Default Settings

Default Settings Used: Yes
 Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Graders Composite	1	6
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	6
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust

Average Hauling Truck Capacity (yd³): 20 (default)
 Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

5.1.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Tractors/Loaders/Backhoes Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	Pb	NH ₃	CO _{2e}
LDGV	000.265	000.002	000.193	002.954	000.008	000.007		000.023	00324.970
LDGT	000.311	000.003	000.333	003.906	000.011	000.010		000.024	00419.211
HDGV	000.714	000.005	001.057	015.590	000.025	000.022		000.045	00768.410

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

LDDV	000.123	000.003	000.131	002.419	000.004	000.004		000.008	00313.914
LDDT	000.266	000.004	000.378	004.163	000.007	000.006		000.008	00446.063
HDDV	000.400	000.013	004.413	001.518	000.166	000.153		000.027	01460.624
MC	002.293	000.003	000.777	013.149	000.028	000.025		000.053	00398.589

5.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase

$$PM10_{FD} = (20 * ACRE * WD) / 2000$$

PM10_{FD}: Fugitive Dust PM 10 Emissions (TONs)
 20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
 ACRE: Total acres (acres)
 WD: Number of Total Work Days (days)
 2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE_{POL}: Construction Exhaust Emissions (TONs)
 NE: Number of Equipment
 WD: Number of Total Work Days (days)
 H: Hours Worked per Day (hours)
 EF_{POL}: Emission Factor for Pollutant (lb/hour)
 2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
 HA_{OnSite}: Amount of Material to be Hauled On-Site (yd³)
 HA_{OffSite}: Amount of Material to be Hauled Off-Site (yd³)
 HC: Average Hauling Truck Capacity (yd³)
 (1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd³)
 HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONs)
 VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
 0.002205: Conversion Factor grams to pounds
 EF_{POL}: Emission Factor for Pollutant (grams/mile)
 VM: Vehicle Exhaust On Road Vehicle Mixture (%)
 2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
 WD: Number of Total Work Days (days)
 WT: Average Worker Round Trip Commute (mile)
 1.25: Conversion Factor Number of Construction Equipment to Number of Works
 NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

V_{POL} : Vehicle Emissions (TONs)
 VMT_{WR} : Worker Trips Vehicle Miles Travel (miles)
 0.002205: Conversion Factor grams to pounds
 EF_{POL} : Emission Factor for Pollutant (grams/mile)
 VM : Worker Trips On Road Vehicle Mixture (%)
 2000: Conversion Factor pounds to tons

5.2 Trenching/Excavating Phase

5.2.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date

Start Month: 4
 Start Quarter: 1
 Start Year: 2023

- Phase Duration

Number of Month: 0
 Number of Days: 21

5.2.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information

Area of Site to be Trenched/Excavated (ft²): 1600
 Amount of Material to be Hauled On-Site (yd³): 0
 Amount of Material to be Hauled Off-Site (yd³): 0

- Trenching Default Settings

Default Settings Used: Yes
 Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust

Average Hauling Truck Capacity (yd³): 20 (default)
 Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HGCV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HGCV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

5.2.3 Trenching / Excavating Phase Emission Factor(s)

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Tractors/Loaders/Backhoes Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	Pb	NH ₃	CO _{2e}
LDGV	000.265	000.002	000.193	002.954	000.008	000.007		000.023	00324.970
LDGT	000.311	000.003	000.333	003.906	000.011	000.010		000.024	00419.211
HDGV	000.714	000.005	001.057	015.590	000.025	000.022		000.045	00768.410
LDDV	000.123	000.003	000.131	002.419	000.004	000.004		000.008	00313.914
LDDT	000.266	000.004	000.378	004.163	000.007	000.006		000.008	00446.063
HDDV	000.400	000.013	004.413	001.518	000.166	000.153		000.027	01460.624
MC	002.293	000.003	000.777	013.149	000.028	000.025		000.053	00398.589

5.2.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase

$$PM10_{FD} = (20 * ACRE * WD) / 2000$$

- PM10_{FD}: Fugitive Dust PM 10 Emissions (TONs)
- 20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
- ACRE: Total acres (acres)
- WD: Number of Total Work Days (days)
- 2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

- CEE_{POL}: Construction Exhaust Emissions (TONs)
- NE: Number of Equipment
- WD: Number of Total Work Days (days)
- H: Hours Worked per Day (hours)
- EF_{POL}: Emission Factor for Pollutant (lb/hour)
- 2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$$

- VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
- HA_{OnSite}: Amount of Material to be Hauled On-Site (yd³)
- HA_{OffSite}: Amount of Material to be Hauled Off-Site (yd³)
- HC: Average Hauling Truck Capacity (yd³)
- (1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd³)
- HT: Average Hauling Truck Round Trip Commute (mile/trip)

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$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL} : Vehicle Emissions (TONs)
 VMT_{VE} : Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
 EF_{POL} : Emission Factor for Pollutant (grams/mile)
 VM : Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

VMT_{WT} : Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL} : Vehicle Emissions (TONs)
 VMT_{VE} : Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
 EF_{POL} : Emission Factor for Pollutant (grams/mile)
 VM : Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

6. Construction / Demolition

6.1 General Information & Timeline Assumptions

- Activity Location

County: Herkimer
Regulatory Area(s): NOT IN A REGULATORY AREA

- **Activity Title:** Install Walk-Up Tower- Newport Irish Hill

- Activity Description:

This project proposes the construction an 80 ft. walk up tower facility on Irish Hill for experimentation in the microwave RF frequency range (30 MHz to the 300 GHz), Thz range and Optical frequency range. This new tower will be utilized in performing the same types of experimentation that is currently being performed at the Newport test site. The 80 foot walk up tower will replace an existing experimentation tower currently in use.

- Activity Start Date

Start Month: 4
Start Month: 2023

- Activity End Date

Indefinite: False
End Month: 4
End Month: 2023

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.015242
SO _x	0.000307
NO _x	0.078914
CO	0.116146
PM10	0.007879

Pollutant	Total Emissions (TONs)
PM 2.5	0.003047
Pb	0.000000
NH ₃	0.000057
CO ₂ e	29.1

6.1 Trenching/Excavating Phase

6.1.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date

Start Month: 4
 Start Quarter: 1
 Start Year: 2023

- Phase Duration

Number of Month: 0
 Number of Days: 21

6.1.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information

Area of Site to be Trenched/Excavated (ft²): 700
 Amount of Material to be Hauled On-Site (yd³): 590
 Amount of Material to be Hauled Off-Site (yd³): 35

- Trenching Default Settings

Default Settings Used: Yes
 Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust

Average Hauling Truck Capacity (yd³): 20 (default)
 Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

6.1.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	Pb	NH ₃	CO _{2e}
LDGV	000.505	000.007	000.537	004.408	000.016	000.014		000.034	00372.100
LDGT	000.619	000.010	000.920	006.517	000.018	000.016		000.034	00497.387
HDGV	001.371	000.015	003.029	025.684	000.043	000.038		000.046	00769.407
LDDV	000.258	000.003	000.313	003.423	000.007	000.006		000.008	00377.653
LDDT	000.575	000.005	000.846	007.048	000.008	000.008		000.008	00588.925
HDDV	000.714	000.014	008.157	002.593	000.372	000.343		000.027	01531.606
MC	002.399	000.008	000.802	014.879	000.030	000.026		000.050	00397.842

6.1.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase

$$PM10_{FD} = (20 * ACRE * WD) / 2000$$

PM10_{FD}: Fugitive Dust PM 10 Emissions (TONs)
 20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
 ACRE: Total acres (acres)
 WD: Number of Total Work Days (days)
 2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE_{POL}: Construction Exhaust Emissions (TONs)
 NE: Number of Equipment
 WD: Number of Total Work Days (days)
 H: Hours Worked per Day (hours)
 EF_{POL}: Emission Factor for Pollutant (lb/hour)
 2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
 HA_{OnSite}: Amount of Material to be Hauled On-Site (yd³)
 HA_{OffSite}: Amount of Material to be Hauled Off-Site (yd³)
 HC: Average Hauling Truck Capacity (yd³)
 (1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd³)
 HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONs)
 VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
 0.002205: Conversion Factor grams to pounds
 EF_{POL}: Emission Factor for Pollutant (grams/mile)
 VM: Vehicle Exhaust On Road Vehicle Mixture (%)
 2000: Conversion Factor pounds to tons

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

Appendix C: USAFSAM Update to Consultative Letter

Consult #72197 - Request for EMF Survey Request Update to Consultative Letter, AFRL-SA-WP-CL-2015-0024

SITUATION

The Newport Antenna Measurement Facility located in Rome, NY is looking to update electromagnetic frequency radiation (EMFR) equipment and requires an updated health risk assessment (HRA).

BACKGROUND

In May 2015, at the request of the Air Force Research Laboratory (AFRL), the United States School of Aerospace Medicine's (USAFSAM) Consulting Division (OEC) conducted an HRA of the EMFR hazards at the Newport Antenna Measurement Facility located in Rome, NY. That consultative letter (see Attachment 1) stated, "Any changes to the layout or procedures at the Newport facility will require a new survey." On 24 January 2022, the AFMC/SGPB notified USAFSAM that the Newport facility was looking to update the EMFR equipment and required a new assessment.

Since the new equipment has not yet been purchased or installed at the Newport facility, USAFSAM/OEC decided a visit to the Newport facility is not necessary at this time. Based on the information provided, OEC has constructed hazard calculations to determine if the new equipment is likely to change the health risks at the facility.

ASSESSMENT

Based on the information provided to USAFSAM, the proposed changes to the facility are as follows:

1. The addition of 2 new Beyond Line of Sight-High Frequency (BLOS-HF) MAS-5 antenna systems. They are 100 ft. towers/antennas systems operating 3-30 MHz
 - a. One located at Tanner Hill
 - b. One located at Stockbridge
 - c. The MAS-5 antenna has the capability (with the correct antenna transmitter equipment) to emit 1 kW which is greater than anything that was evaluated (1W) during the 2015 assessment.
2. The addition of a new 80-ft tower with the same EMFR criteria as antennas evaluated during the 2015 assessment.
 - a. Located at Irish Hill
 - b. Incorporating same or similar (power and frequencies) emitters as the equipment currently at Irish Hill

Based on hazard calculations conducted for the MAS-5 (see Attachment 2), the two new MAS-5 towers proposed for the Tanner Hill and Stockbridge locations could potentially generate worker or public exposures that exceed the upper and lower tier Maximum Permissible Exposure (MPE) limits.

Additionally, as the newly proposed 80-ft tower planned for the Irish Hill location operates within the same parameters as existing equipment, the new antenna is unlikely to yield worker or public exposures that exceed either the upper or lower tier MPEs.

RECOMMENDATION

USAFSAM concludes that the newly proposed MAS-5 antennas, if operated at the maximum power (1 kW), could pose a potential health risk for Newport facility workers or the general public. Based on hazard calculations (operating at 1 kW), the maximum hazard distance for non-EMF workers (Lower Tier) is 58 ft from the antenna and 26 ft for facility workers trained in EMF (Upper Tier). It is recommended that installation of the MAS-5 antenna be designed in such a way to prevent direct-path emissions up to 58 ft. If direct path emissions are at sufficient height as to prevent direct exposures to someone on the ground, fencing or barriers preventing access may not be necessary; however, if the antennas emit at ground level, fencing or barriers should be installed around the MAS-5 towers to prevent unauthorized access to the MAS-5 antennas.

USAFSAM recommends that facility personnel request an update to AFRL-SA-WP-CL-2015-0024 once the new equipment is installed.

References: (a) AFI 48-109, 01 August 2014, *Electromagnetic Field Radiation (EMFR) Occupational and Environmental Health Program*

(b) IEEE C95.1, 08 February 2019, *IEEE Standard for Safety Levels with Respect to Human Exposure to Electric, Magnetic, and Electromagnetic Fields, 0 Hz to 300 GHz*

2 Attachments:

1. AFRL-SA-WP-CL-2015-0024
2. MAS-5 Hazard Calculations

REPORT DOCUMENTATION PAGE			<i>Form Approved</i> OMB No. 0704-0188		
<small>Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.</small>					
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			5c. PROGRAM ELEMENT NUMBER		
			5d. PROJECT NUMBER		
6. AUTHOR(S) Bret Rogers			5e. TASK NUMBER		
			5f. WORK UNIT NUMBER		
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13. SUPPLEMENTARY NOTES					
14. ABSTRACT This health risk assessment (HRA), conducted 5-6 May 2015, was requested to verify safe exposure levels of electromagnetic frequency radiation (EMFR) at this Air Force (AF) facility. At the request of the Air Force Research Laboratory (AFRL), the U.S. Air Force School of Aerospace Medicine, Consultative Services Division assessed AFRL's Newport Antenna Measurement Facility. This HRA included measurements for potential exposures to EMFR as well as an evaluation for compliance with AF standards. EMFR operations at the Newport Antenna Measurement Facility are compliant with the current AFI 48-109 and IEEE C95.1. No exposures on or around the Newport facility exceed either the upper or lower tier maximum permissible exposure limits. Engineering and administrative controls are consistent with AF requirements and provide sufficient safety for all personnel at and near the facility. Any changes to the layout or procedures at the Newport facility will require a new survey.					
15. SUBJECT TERMS EMF, MPE, HRA, Newport, Rome Laboratory, AFRL					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			Dr. David Carpenter
U	U	U	SAR	25	19b. TELEPHONE NUMBER (include area code)

Standard Form 298 (Rev. 8-98)
Prescribed by ANSI Std. Z39.18

Atch 1



DEPARTMENT OF THE AIR FORCE
USAF SCHOOL OF AEROSPACE MEDICINE (AFMC)
WRIGHT-PATTERSON AFB OH

15 July 2015

MEMORANDUM FOR AFRL/RIOCV
ATTN: WILLIAM BRAIN
150 ELECTRONIC PARKWAY
ROME, NY 13441

FROM: USAFSAM/OEC
2510 Fifth Street
Wright-Patterson AFB, OH 45433-7913

SUBJECT: Consultative Letter, AFRL-SA-WP-CL-2015-0024, EMFR HRA of the Newport Antenna Measurement Facility

1. INTRODUCTION:

a. *Purpose:* This health risk assessment (HRA), conducted 5-6 May 2015, was requested to verify safe exposure levels of electromagnetic frequency radiation (EMFR) at this Air Force (AF) facility.

b. *Background:* At the request of the Air Force Research Laboratory (AFRL), the U.S. Air Force School of Aerospace Medicine, Consultative Services Division (USAFSAM/OEC) assessed AFRL's Newport Antenna Measurement Facility. This HRA included measurements for potential exposures to EMFR as well as an evaluation for compliance with AF standards.

(1) The New York Department of Health was notified in advance and asked to observe this survey. In response, the NY Department of Health sent two personnel to the Newport Antenna Measurement Facility to observe operations and USAFSAM survey procedures.

(2) Exposure to EMFR may pose health risks due to its ability to heat body tissue enough to cause damage. Absorbed energy causes body temperatures to rise due to the body's inability to dissipate the added energy.

(3) USAFSAM performed this HRA in accordance with Air Force Instruction (AFI) 48-109, *Electromagnetic Field Radiation (EMFR) Occupational and Environmental Health Program*, and the Institute of Electrical and Electronics Engineers (IEEE) C95.1, *IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields*. Maximum permissible exposure (MPE) limits for this evaluation are based on the upper tier limits from these standards. Upper tier limits are defined, in these standards, as limits for people who are knowledgeable of the EMFR transmissions. The survey team compared measured

results of this evaluation to the lower tier limits to ensure compliance with all standards. Lower tier limits are defined in these standards as limits for people without knowledge of the EMFR transmissions.

(4) The Newport Antenna Measurement Facility is located 30 miles southeast of Rome, NY, near Newport, NY. The facility is split between two hilltop locations: Irish Hill and Tanner Hill. The hilltops are separated by a distance of 1.5 miles with a 400-foot-deep intervening valley. The antenna range is used to measure antenna radiation patterns, antenna-to-antenna isolation, full up radio frequency performance, and the development of state-of-the-art antenna measurement technologies.

(5) The site has various EMF systems as seen in Figure 1. This facility has operated in this configuration for approximately 30 years. Its systems include continuous wave emitters that transmit through various size antennas. See Table 1 for an inventory of emitters found at the Newport facility. Not all of these emitters are currently functional, as indicated in Table 1.

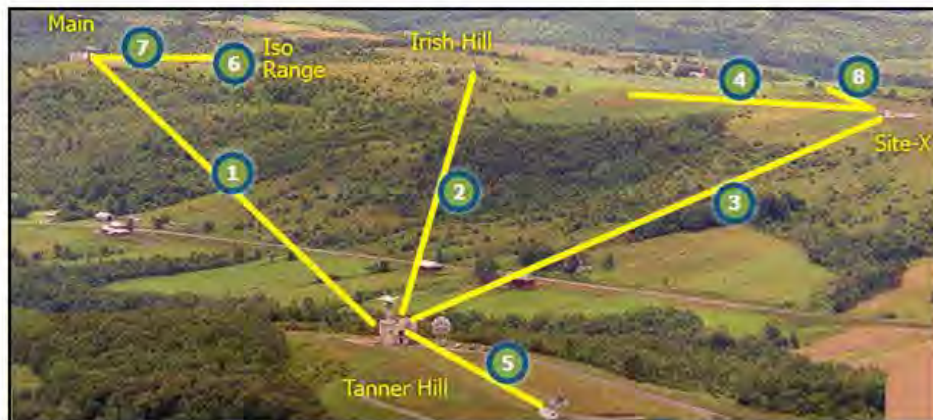


Figure 1. Newport Antenna Measurement Facility

Table 1. Newport Facility Emitter Inventory

Emitter Model and Antenna Size	Emitter Location	Quantity	Emitter Functional? (Yes/No)
Scientific Atlanta Inc. 15-ft Reflector	Tanner Hill Bldg 1600 Tower on Roof	1	YES
Scientific Atlanta Inc. 28-ft Reflector	Tanner Hill Left & Right of Transmit Bays	3	YES (2 of 3)
Scientific Atlanta Inc. 10-ft Reflector	Tanner Hill Upper & Lower Transmit Bays	3	YES
Scientific Atlanta Inc. 8-ft Reflector	Tanner Hill Upper & Lower Transmit Bays	2	YES
Scientific Atlanta Inc. 6-ft Reflector	Tanner Hill Upper & Lower Transmit Bays	2	YES
Scientific Atlanta Inc. 4-ft Reflector	Tanner Hill Upper & Lower Transmit Bays	2	YES
Scientific Atlanta Inc. 10-ft Reflector	Irish Hill Site X 1400-ft Transmit Range	1	YES
Scientific Atlanta Inc. 15-ft Reflector	Irish Hill Site X 1400-ft Range	1	YES
Scientific Atlanta Inc. 10-ft Reflector	Irish Hill Bldg 1620 Transmit Bay	1	NO
Scientific Atlanta Inc. 8-ft Reflector	Irish Hill Bldg 1620 Transmit Bay	1	NO
Log-Periodic Antenna	Irish Hill – Mobile	1	YES

c. *Survey Personnel:*

- (1) Health Physicist, USAFSAM/OEC
- (2) Health Physics Technician, USAFSAM/OEC

d. *Personnel Contacted:*

- (1) Occupational Safety Manager, AFRL/RIOCV
- (2) Newport Site Manager, AFRL/RITE
- (3) Director, Bureau of Environmental Radiation Protection, New York State Department of Health
- (4) Research Scientist, Bureau of Environmental Radiation Protection, New York State Department of Health

e. *EMF Measurement Equipment:*

- Narda Broadband Field Meter NBM-520 (SN A-0063, Calibrated December 2013, Calibration Due December 2015)
- Narda Broadband Field Meter NBM-550 (SN B-0858, Calibrated December 2013,

Calibration Due December 2015)

- Narda Electric Field Probe Model EF5092 (SN 1003, Calibrated December 2013, Calibration Due December 2015)
- Narda Shaped Probe Model EB 5091 (SN 01032, calibrated December 2013, Calibration Due December 2015)

2. METHODOLOGY:

a. *Site Layout:* The primary focus of this survey is to evaluate the various emitter systems located on Tanner Hill. There are 10 functional antennas and 1 nonfunctional antenna located in and adjacent to building 1600 (see Figures 2 through 5). Building 1600 has upper and lower transmit bays. The upper transmit bay houses four antennas, and the lower transmit bay houses three antennas. These antennas vary between 4, 6, 8, and 10 feet in diameter. There is currently one 15-foot antenna located on the roof and two 28-foot antennas located on either side of the building. Irish Hill has additional emitters that operate when needed. These systems include 10- and 15-foot antennas as well as a log-periodic antenna (see Figures 6 through 8). The site contains various aircraft. Some aircraft are actual airframes to test antennas, while other aircraft were full scale models used to mimic the real aircraft. These aircraft do not contain their normal working components. Aircraft are placed on positioners that rotate the aircraft to test antenna patterns. See Figure 9 for an example test configuration.



Figure 2. Tanner Hill

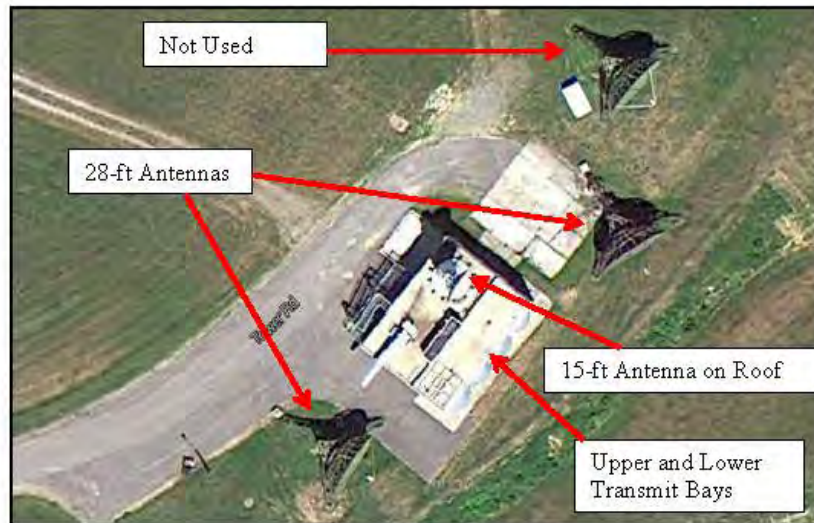


Figure 3. Building 1600 Layout

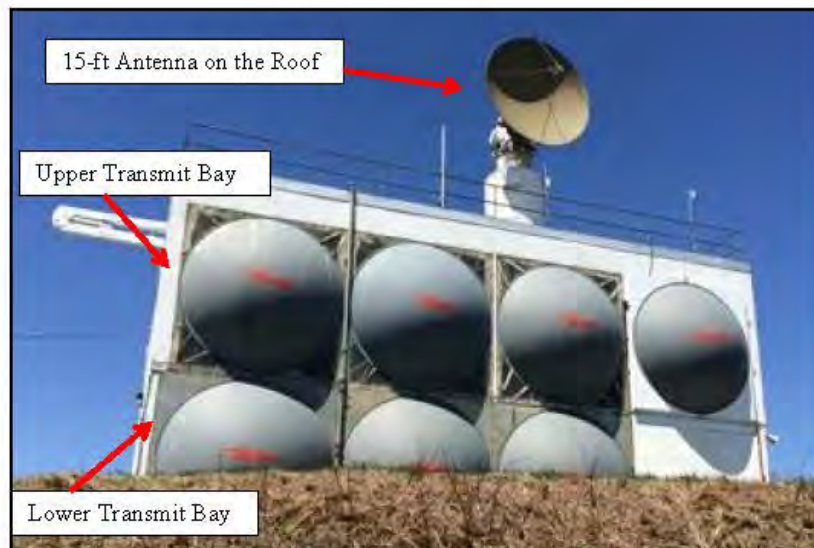


Figure 4. Building 1600 Upper and Lower Transmit Bays and Roof Antenna



Figure 5. Building 1600 28-Foot Antenna (Typical)



Figure 6. Irish Hill Overview

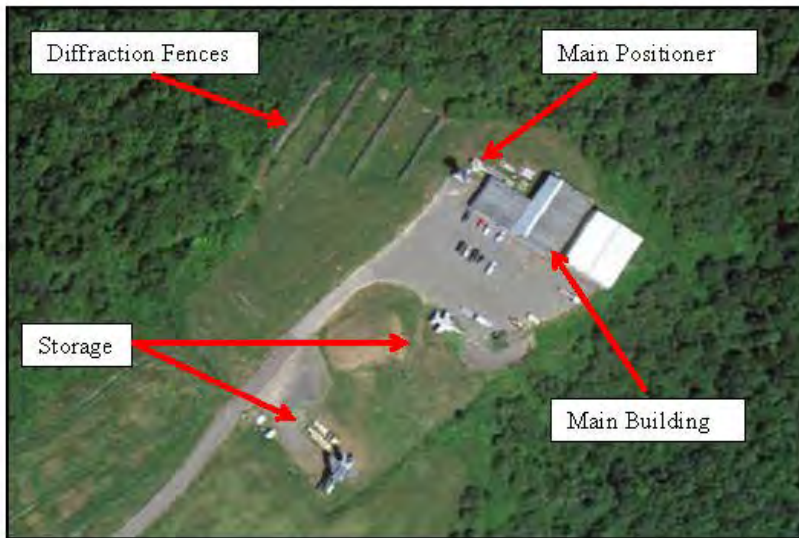


Figure 7. Irish Hill Main Building



Figure 8. Irish Hill Building 1620 and Old Test Fixtures



Figure 9. Aircraft Positioner with a Full-Scale Model of an F-35

b. *Process:* All EMF engineering and administrative control measures were reviewed for compliance with AFI 48-109 and IEEE C95.1. USAFSAM/OEC performed calculations on the potential hazards of each emitter (see Attachment 1). The survey team also evaluated antenna pattern models to determine where the transmitted energy was going. USAFSAM/OEC then measured power densities in areas in front of accessible emitter systems to validate these calculations and models. Not all emitters were accessible or operational; therefore, transmitters and antenna systems were visually inspected to verify potential hazards.

c. *Hazard Distance Calculations:* An EMFR hazard distance is the distance from an emitter where transmitted energy densities can exceed MPE values. Calculations are a useful tool to predict the hazard distance of an EMFR system. Calculated hazard distances provide a worst-case scenario to begin survey work. These worst-case distances ensure no survey personnel are overexposed. Typical measured hazard distances are 50-80% of the calculated hazard distances. The differences are due to inefficiencies in the emitter system such as transmission line loss or antenna efficiency.

d. *Emitter Antenna Modelling:* USAFSAM utilized antenna pattern models to evaluate all emitters at the Newport site. AFRL provided models of each size antenna for evaluation. See Attachment 2 for AFRL antenna pattern models. USAFSAM validated these models with physical measurements and visual inspections of equipment to determine where EMFR energy was accessible to personnel and ensured that stray energy is not transmitted in unwanted directions.

e. *Physical Measurement Procedures:* USAFSAM/OEC performed EMF measurements at all potentially affected areas accessible to personnel during normal operations, both indoors and outdoors. USAFSAM/OEC took measurements at the highest power setting of 1 watt using a Narda broadband field meter and probe. The survey team selected Narda EF5092 and EB5091 probes since they have the appropriate frequency response and power-density detection capability. The survey team performed scans utilizing the real time monitoring capability of the Narda system. USAFSAM/OEC then corrected the raw data collected from the Narda system using calibration factors per manufacturer's recommendation. Peak measured values were multiplied by the correction factor to produce the reported measured values. See Attachment 3 for calibration correction factors. Reported exposure level measurement values were compared to the MPE levels. Emission measurements were taken from both the 28- and 6-foot antennas. The survey team took these measurements as close to the antenna as possible based on terrain restrictions. See Figures 10 and 11 for measurement scenarios.



Figure 10. Measurement Scenario for a 6-Foot Antenna



Figure 11. Measurement Scenario for a 28-Foot Antenna

3. RESULTS: Table 2 summarizes the EMF evaluation at the Newport Antenna Measurement Facility.

Table 2. Summary of EMF Evaluation in and Around the Newport Antenna Measurement Facility

Emitter System	Calculated Hazard Distance (ft)	Calculated Hazard Distance Validated as Worst-Case? (YES/NO)	System Accessible During Survey (YES/NO)	Accessible Exposure Exceeds Upper-Tier MPE?	Accessible Exposure Exceeds Lower-Tier MPE?
4-ft Antenna	4.7	YES	NO	NO	NO
6-ft Antenna	4.2	YES	YES	NO	NO
8-ft Antennas	3.4	YES	NO	NO	NO
10-ft Antennas	4.4	YES	NO	NO	NO
15-ft Antennas	5.5	YES	NO	NO	NO
28-ft Antennas	8.7	YES	YES	NO	NO
Log-Periodic Antenna	0.1	YES	NO	NO	NO

a. *Physical Measurements:* All measurements were below both upper and lower tier MPE levels. Theoretical hazard distances were shown to be the worst-case scenario. Physical measurements were made on both the 28-foot system as well as a 6-foot system. This evaluation showed that AFRL antenna models are valid and that the calculated theoretical hazard distances were conservative estimates.

(1) Readings for the 28-foot antenna:

- 5.79% of the upper tier MPE at 73 feet in front of the antenna
- 38.0% of the lower tier MPE at 73 feet in front of the antenna

(2) Readings for the 6-foot antenna:

- 5.0% of upper tier MPE within 1 foot of the ray dome
- 50.0% of lower tier MPE within 1 foot of the ray dome

b. *Evaluation of Engineering Control Measures:* Various engineering controls are utilized to include key controls on emitters and physical barriers surrounding the site to restrict access.

c. *Evaluation of Administrative Control Measures:* Newport personnel implement various administrative controls to include training, warning signs, and visual monitoring.

4. DISCUSSION:

a. No surveyed areas exceeded the applicable EMFR MPEs. All final EMFR measurements were less than 5.7% of the worst-case upper tier MPE values and less than 50% for lower tier MPE values (see Attachment 1 for MPE values). Due to the low powers, frequencies, and directionality of the EMFR systems, no hazardous levels of EMFR measurements were expected or existed in areas accessible to personnel.

b. USAFSAM could not evaluate all emitters with physical measurements. Some emitters were not operational and others were not accessible due to their elevated positions above the ground. For these systems, USAFSAM verified the transmitter specifications and compared these systems to similar equipment at the site to validate the calculated hazard distances provided in this report. The survey team was able to visually inspect all transmitters and antennas on the site. USAFSAM observed that the same low-power transmitter system was utilized to operate each of the antennas to create a complete system. For systems not physically measured, personnel will not be allowed within the calculated hazard distances. This restriction will provide protection against the transmissions at or near the site.

c. Various aircraft are subjected to radiation from the test antennas. The aircraft systems operate in receive mode only; therefore, no evaluation was required.

5. CONCLUSIONS AND RECOMMENDATIONS:

a. EMFR operations at the Newport Antenna Measurement Facility are compliant with the current AFI 48-109 and IEEE C95.1.

- b. No worker or public exposures on or around the Newport facility exceed either the upper or lower tier MPEs.
 - c. Engineering and administrative controls are consistent with AF requirements and provide sufficient safety for all personnel at and near the facility.
 - d. Any changes to the layout or procedures at the Newport facility will require a new survey.
6. If you have any questions regarding this report, please contact the ESOH Service Center at Commercial 937-938-3764 (DSN 798-3764) or esoh.service.center@us.af.mil.



BRET Z. ROGERS
Department of the Air Force
Radiation Consultant

- 3 Attachments:
- 1. Hazard Distance Calculations
 - 2. Newport Antenna Pattern Models
 - 3. Calibration Certificates for Narda Equipment

cc:
AFMSA/SG3PB
AFMC/SGPB
66 MDS/SGOJ

Attachment 1
Hazard Distance Calculations

A1. USAFSAM calculated the worst-case hazard distances per methods published in AFI 48-109 and IEEE C95.1 (see Equation A1-1). Parameters for each antenna are entered into the equation to find a calculated theoretical hazard distance. See Table A1-1 for emitter parameters. USAFSAM selected MPE from IEEE C95.1. MPE values vary based on frequency; therefore, the lowest and most restrictive MPE was selected to provide a worst-case theoretical hazard distance. See Table A1-2 for worst-case MPE and associated hazard distance.

$$D(\text{meters}) = \sqrt{\frac{P_{\text{ave}}(\text{watts}) G_{\text{abs}}}{4 \pi \text{MPE} \left(\frac{\text{W}}{\text{m}^2}\right)}} \quad \text{Equation A1-1}$$

Where:

$G_{\text{abs}} = \log_{-1}[\text{Gain}(\text{dBi})/10]$

P_{ave} = average power

MPE = either upper or lower tier MPE taken from IEEE C95.1

Table A1-1. Newport Emitter Parameters

Emitter System	Frequency Range (MHz)	Average Power (Watts)	Worst Case Antenna Gain (dBi)
4-ft Antenna	12400-18000	1.0	44.5
6-ft Antenna	8000-12400	1.0	43.5
8-ft Antennas	4000-8000	1.0	41.5
10-ft Antennas	1000-4000	1.0	39.0
15-ft Antennas	1000-2000	1.0	41.0
28-ft Antennas	400-1000	1.0	41.0
Log-Periodic Antenna	500	1.0	7.5

Table A1-2. Newport Emitter MPEs and Calculated Hazard Distances

Emitter System	Upper Tier		Lower Tier	
	Worst-Case MPE from IEEE C95.1 (W/m ²)	Calculated Hazard Distance (ft)	Worst-Case MPE from IEEE C95.1 (W/m ²)	Calculated Hazard Distance (ft)
4-ft Antenna	100.0	4.7	10.0	15.0
6-ft Antenna	100.0	4.2	10.0	13.3
8-ft Antennas	100.0	3.4	10.0	10.6
10-ft Antennas	33.3	4.4	5.0	11.2
15-ft Antennas	33.3	5.5	5.0	14.2
28-ft Antennas	13.3	8.7	2.0	22.4
Log-Periodic Antenna	16.7	0.1	2.5	0.1

Attachment 2
Newport Antenna Pattern Models

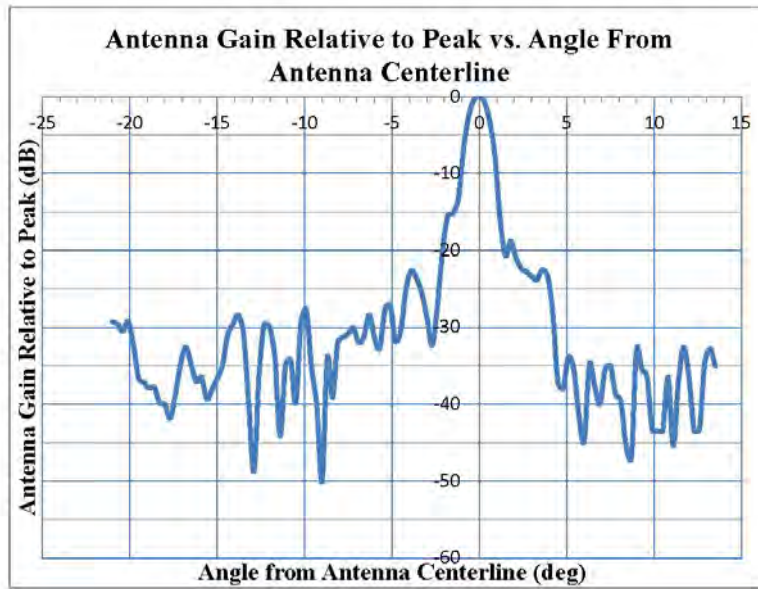


Figure A2-1. 4-Foot Antenna Model

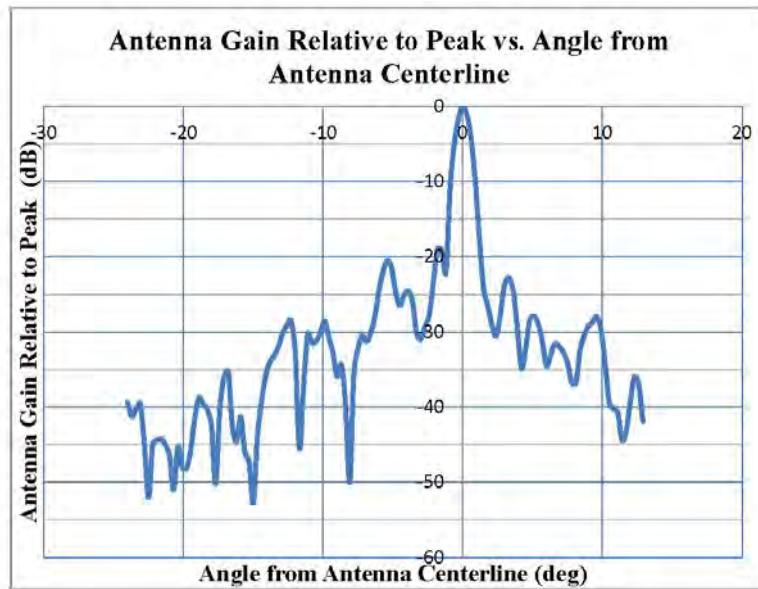


Figure A2-2. 6-Foot Antenna Model

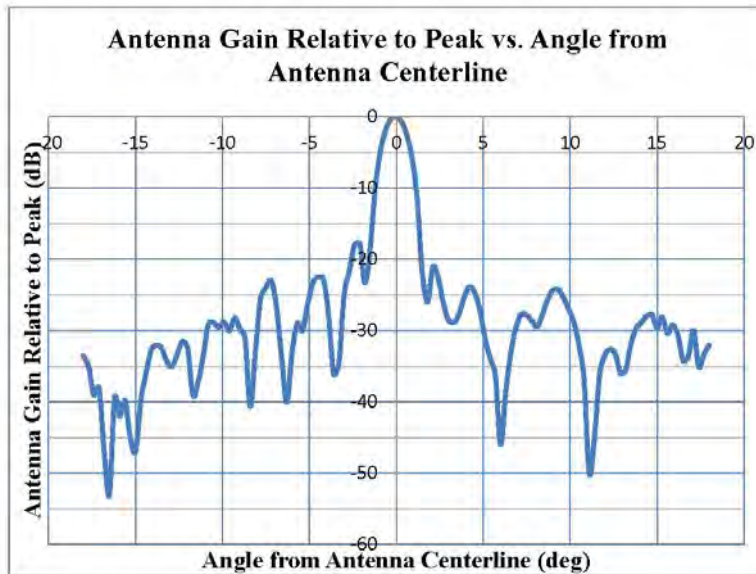


Figure A2-3. 8-Foot Antenna Model

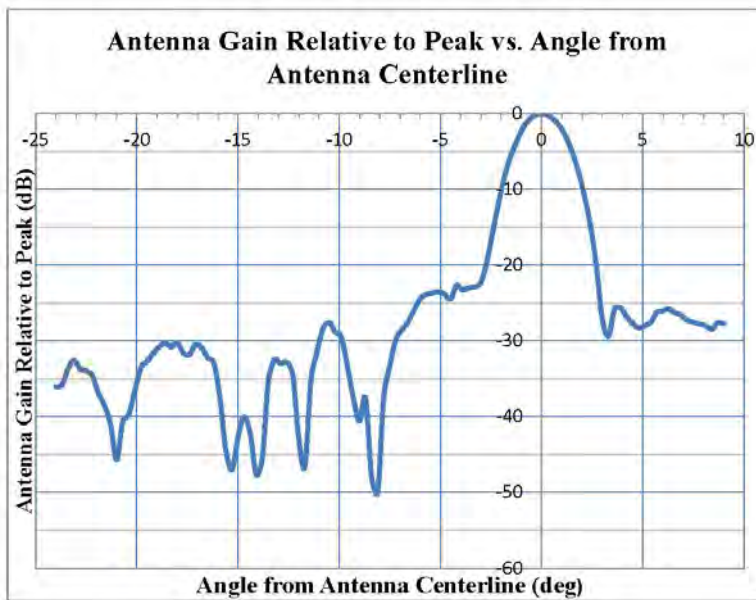


Figure A2-4. 10-Foot Antenna Model

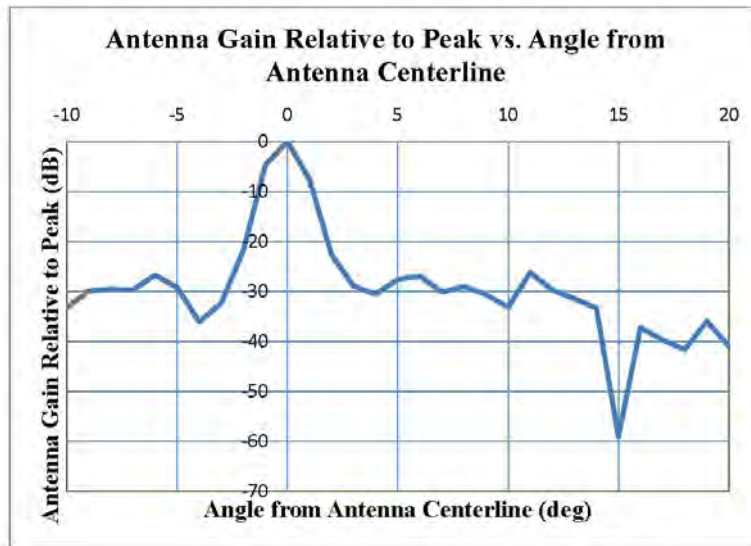


Figure A2-5. 15-Foot Antenna Model

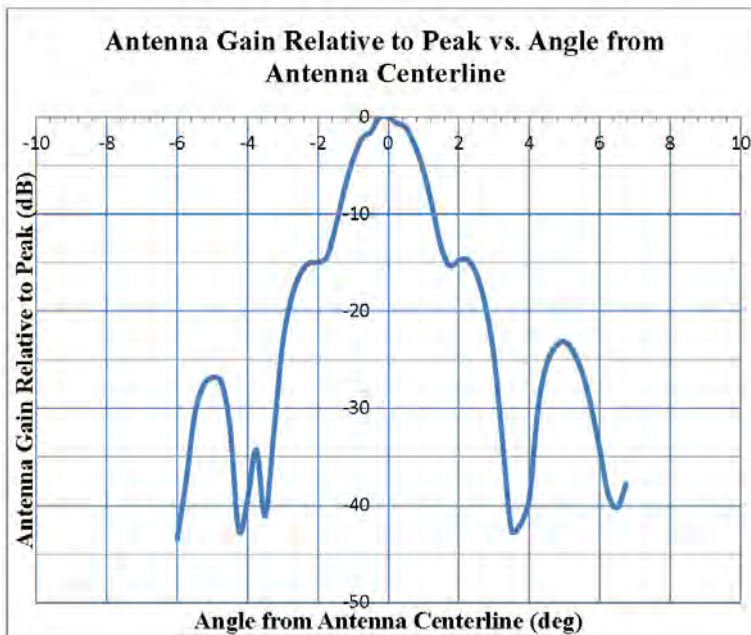


Figure A2-6. 28-Foot Antenna Model

Attachment 3
Calibration Certificates for Narda Equipment

**US Army Primary
Standards Laboratory
Electromagnetic Standards Laboratory
AMSAM-TMD-SM
Redstone Arsenal, AL 35898-5000**

Report of Calibration

for
Radiation Monitor
Narda NBM-520, S/N A-0063
with
Isotropic Probe
Narda EF-5092, S/N 01003
Submitted By
ENSV00



Calibration of this device was performed under ambient conditions of $23^{\circ}\text{C} \pm 2^{\circ}\text{C}$ and nominal 50 percent relative humidity. The temperature of the device was maintained constant to within 1.0°C during the calibration. The calibration frequency was accurate to $\pm 0.1\%$. The probe was immersed in an electromagnetic field with a nominal power density of 50 percent of the full-scale meter range indicated.

This device was calibrated using technique number MSL-7. Calibrations below 1 GHz were performed in a transverse electromagnetic (TEM) cell. The power density at the probe was calculated using the calibrated electrical characteristics of the cell and the measured net power transmitted into the cell.

At frequencies of 1 GHz and above the probe was immersed in an electromagnetic field established in an anechoic chamber facility using standard gain horns. The power density at the probe was calculated using the measured net transmitted power, the distance from the horn, and the horn gain corrected for distance. The probe was mounted on a multi-axis positioner, with the probe element centered on the horn boresight axis and the probe handle oriented parallel to the horn boresight axis.

The total estimated measurement uncertainty in Calibration Factor at the time of calibration is plus or minus 2.0 dB and represents an approximate 95% ($k=2$) confidence level. The user should be aware that over the recommended calibration interval the reported calibration factors could change significantly within the stated uncertainty, depending on how well the probe is protected from rough usage. The user should be aware that there are many factors that may cause the item to drift out of calibration before the recommended interval has expired.

All values provided herein are traceable to the National Institute of Standards and Technology (NIST). Supporting documentation relative to traceability is on file and is available for examination upon request. This calibration is accredited to ISO/IEC 17025 by the American Association for Laboratory Accreditation (A2LA Cert. No. 1256.01). The quality system of the US Primary Standards Laboratory is registered to ISO 9001:2008. This report may not be reproduced except in full without the permission of the Electromagnetic Standards Laboratory.

It should be noted that when the probe is hand-held, additional measurement errors are possible due to perturbations of the field by the probe cable and/or the operator. These errors can usually be held to 0.5 dB or less by holding the probe close to the transmitting source, as far as possible away from the operator.

The probe **CALIBRATION FACTOR** is a correction to be applied to the meter indication to obtain the true power density. Calibration Factor is calculated as the true power density divided by the peaked meter indication. Multiply the meter indication by the Calibration Factor to obtain the true power density.

Calibration Report No. PJ121213-0006
Date Calibrated: 17 Dec 2013
Calibration Due: 7 Dec 2015

Page: 1 of 2

AMSAM-TMD-SM
 Radiation Monitor/Isotropic Probe
 Narda NBM-520/Narda EF-5092
 Serial No. A-0003/01003

Calibration Data Table	
All Values Apply to Meter Range: 2(mW/cm ²)	
Frequency (GHz)	Calibration Factor
0.3000	1.054
0.5000	1.490
2.4500	1.185
3.0000	1.341
6.0000	1.098
9.0000	0.915
12.0000	1.302
15.0000	1.496
18.0000	1.583
26.5000	1.284
40.0000	1.203
Standards used during calibration	
NIST 5cm Antenna #3: Report# 923034 Cal Date 27 Sep 2011	
NIST 5cm Antenna #4: Report# 922683 Cal Date 27 Sep 2011	
NIST 8mm Antenna #2: Report# 906601 Cal Date 17 Jul 2010	
NIST 8mm Antenna #3: Report# 700348 Cal Date 17 Jul 2010	



Calibration Performed By:

Brandon A. May
 Electronics Engineer
 Electromagnetic Standards Laboratory
 DSN: 746-4961 Comm: 256-876-4961
 E-mail: brandon.a.may.civ@mail.mil

Calibration Report No. PJ131213-0006
 Date Calibrated: 17 Dec 2013
 Calibration Due: 7 Dec 2015



Calibration Reviewed By:

David G. Zupac
 Electronics Engineer
 Electromagnetic Standards Laboratory
 DSN: 788-5848 Comm: 256-842-5848
 E-mail: david.g.zupac.civ@mail.mil

**US Army Primary
Standards Laboratory
Electromagnetic Standards Laboratory
AMSAM-TMD-SM
Redstone Arsenal, AL 35898-5000**

Report of Calibration

for
Radiation Monitor
Narda NBM-550, S/N B-0838
with
Isotropic Probe
Narda EB-5091, S/N 01032
Submitted By
FNSY00



Calibration of this device was performed under ambient conditions of 23°C ± 2°C and nominal 50 percent relative humidity. The temperature of the device was maintained constant to within 1.0 °C during the calibration. The calibration frequency was accurate to ± 0.1%. The probe was immersed in an electromagnetic field with a nominal power density of 50 percent of the full-scale meter range indicated.

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Page:1 of 2

AMSAM-TMD-SM
 Radiation Monitor/Isotropic Probe
 Narda NBM-550/Narda EB-5091
 Serial No. B-0858/01032

Calibration Data Table	
All Values Apply to Meter Range 2(mW/cm ²)	
Frequency (GHz)	Calibration Factor
0.0030	0.676
0.0100	0.909
0.0300	1.258
0.0500	0.919
0.1000	0.965
0.2000	1.154
0.3000	1.473
2.4500	1.007
3.0000	1.176
6.0000	0.940
9.0000	1.386
12.0000	1.549
15.0000	1.529
18.0000	1.522
26.5000	1.437
40.0000	1.232
Standards used during calibration:	
NIST Smm Antenna #3: Report# 923034, Cal Date 27 Sep 2011	
NIST Smm Antenna #4: Report# 923683, Cal Date 27 Sep 2011	
NIST Bmm Antenna #2: Report# 936801, Cal Date 17 Jul 2010	
NIST Bmm Antenna #3: Report# 700348, Cal Date 17 Jul 2010	


 Calibration Performed By:

Brandon A. May
 Electronics Engineer
 Electromagnetic Standards Laboratory
 DSN: 746-4961 Comm: 256-876-4961
 E-mail: brandon.a.may.civ@mail.mil


 Calibration Reviewed By:

David G. Zajac
 Electronics Engineer
 Electromagnetic Standards Laboratory
 DSN: 788-5848 Comm: 256-842-5848
 E-mail: david.g.zajac.civ@mail.mil

Calibration Report No: P111213-0009
 Date Calibrated: 17 Dec 2013
 Calibration Due: 7 Dec 2015

D _{MPE} Calculation				WPID:	C#72197	DATE:	20220314	
INSTRUCTIONS: ● To Calculate MPE: Enter Frequency in KHz, MHz or GHz (select appropriate radio button) MPE related fields are GREEN ● To calculate D _{MPE} : enter value of PEAK POWER (in watts), and Gain in Decibels (all that is needed for CW). All D _{MPE} fields are RED ● If unit is a pulsed emitter enter pulse width in seconds/milli/micro and also add the value for the Pulse Repetition Frequency. Selecting CW as emitter type, invalidates these fields (BLUE)				BASE:	Rome, NY	ORGANIZATION:	AFRL	
				WORKPLACE:	Newport Antenna Measurement Facility			
				BUILDING LOCATION:	N/A	ROOM/AREA:	N/A	
$D_{MPE} = 3.28 \sqrt{\frac{P_{avg} \times G_{abs}}{4 \times \pi \times MPE}} = \text{Distance in feet to MPE}$				Where: D _{MPE} = distance in feet from the antenna to the point at which the MPE (in W/m ²) is found 3.28 = conversion from meters to feet P _{avg} = average power in watts (if pulsed, you will have to use the duty factor (DF)) G _{abs} = absolute gain (calculated from the gain in decibels) (G _{abs} = 10 ^{0.5dB/10}) (unitless) 4 = unitless constant MPE = maximum permissible exposure				
EMITTER IDENTIFICATION:		DESCRIPTION:		TYPE/EMITTER:				
MAS-5 Port 1-4		Multiport Antenna System		●Continuous Wave (CW) ●Pulsed				
FREQUENCY:	30	Peak Power (Pp) (watts):	1,000 Watts	Pulse Width (PW):	0	Pulse Repetition Frequency (PRF):	0 pps	
If you know the P _{avg} input here only: _____ W		Peak Power (Pp) & Pulse Width (PW) & Pulse repetition Frequency (PRF) = P _{avg}		P _{avg} (Watts (W))				
Gain in Decibels:	7 Db	Absolute Gain (G _{abs}):	5.01	If you know the G _{abs} input here only: _____		Beam Width (BW): 1 degrees Sector Size (SS): 1 degrees		
For Rotating Beam Emitters: $D_{MPE} = 3.28 \sqrt{\frac{P_{avg} \times G_{abs} \times RRF}{4 \times \pi \times MPE}} = \text{feet}$ Where: RRF = Beam Width / Sector size (unitless) Beam Width = width of beam in degrees Sector size = total path the beam sweeps through in degrees				RRF: 1		IMPORTANT: If the emitter is NOT a rotating beam, the BW and SS should both be set to 1		
Upper Tier		Lower Tier		ADJUST MPE: $MPE_{adj} = \frac{AT}{ET} \times MPE$ Where: MPE _{adj} = Adjusted MPE AT = Averaging Time (from chart below) ET = Actual Exposure time (has to be less than AT) (mins) MPE = Maximum Permissible Exposure for the given frequency		Exposure Time (ET) (min(s))		
	E-field	H-field	E-field	H-field				
MPE	10.00 w/m ²	111.11 w/m ²	2.00 w/m ²	111.11 w/m ²				
D _{MPE}	20.71 Ft	6.21 Ft	46.32 Ft	6.21 Ft				

Exposure Reference Tables (Table Calculates where required (green fields) base on the given frequency)

Maximum Permissible Exposures (MPE) for Controlled RF Environments (Upper Tier)

Frequency range (MHz)	RMS electric field strength (E) ^a (V/m)	RMS magnetic field strength (H) ^a (A/m)	RMS power density, E-field (W/m ²)	RMS power density, H-field (W/m ²)	Averaging time E ² , H ² , or S (min)
0.1-1.0	1842	f _h /300 N/A	9000	100000/f _h ² N/A	6
1.0-30	1842/f _h 61.40	30.3/f _h 0.54	9000/f _h ² 10	100000/f _h ² 111	6
30-100	61.4	30.3/f _h 0.54	10	100000/f _h ² 111	6
100-300	61.4	0.163	10		6
300-3000	-	-	f _h /30	N/A	6
3000-30000	-	-	100		19.5/(f _h -1.579)
30000-300000	-	-	100		3.52/(f _h -0.476)

Note - f_h is the frequency in MHz, f_h is the frequency in GHz

a. For exposures that are uniform over the dimensions of the body, such as certain far-field plane-wave exposures, the exposure field strengths and power densities are compared with the MPEs in the table. For non-uniform exposures, the mean values of the exposure fields, as obtained by spatially averaging the squares of the field strengths or averaging the power densities over an area equivalent to the vertical cross section of the human body

b. These plane-wave equivalent power density values are commonly used as a convenient comparison with MPEs at higher frequencies and are displayed on some instruments in use.

Action Level - Maximum Permissible Exposures for the General Public When No RF Safety Program (RFSP) Exists (Lower Tier)

Frequency range (MHz)	RMS electric field strength (E) ^a (V/m)	RMS magnetic field strength (H) ^a (A/m)	RMS power density, E-field (W/m ²)	RMS power density, H-field (W/m ²)	Averaging time E ² or S (min)	Averaging time H ² (min)
0.1-1.34	61.4	10.3/f _h N/A	1000	100000/f _h ² N/A	6	6
1.34-3	61.4/f _h N/A	10.3/f _h N/A	1000/f _h ² N/A	100000/f _h ² N/A	f _h ² /20.3	6
3-30	61.4/f _h 27.46	10.3/f _h 0.54	1000/f _h ² 2.00	100000/f _h ² 111.11	30	6
30-100	27.5	10.3/f _h 0.54	2	100000/f _h ² 111.03	30	6.00
100-400	27.5	0.0729	2		30	
400-2000	-	-	f _h /200	N/A	30	
2000-5000	-	-	10		30	
5000-30000	-	-	10		100/f _h	N/A
30000-100000	-	-	10		35.24/f _h ^{0.67}	N/A
100000-300000	-	-	10	N/A	100000/f _h ^{0.67}	N/A

Note - f_h is the frequency in MHz, f_h is the frequency in GHz

a. For exposures that are uniform over the dimensions of the body, such as certain far-field plane-wave exposures, the exposure field strengths and power densities are compared with the MPEs in the table. For non-uniform exposures, the mean values of the exposure fields, as obtained by spatially averaging the squares of the field strengths or averaging the power densities over an area equivalent to the vertical cross section of the human body (projected area), or a smaller area depending on the frequency (see "Notes to Tables" below), are compared with the MPEs in the table.

b. The left column is the averaging time for |E|², the right column is the averaging time for |H|² (or frequencies greater than 400 MHz, the averaging time is for power density S).

c. These plane-wave equivalent power density values are commonly used as a convenient comparison with MPEs at higher frequencies and are displayed on some instruments in use.

PREPARED BY: (Name, Grade, AFSC) <div style="text-align: center; font-family: cursive;">Austin T. Bennett</div> Name: AUSTIN T. BENNETT Title: Branch Chief, Installation Site Support	REVIEW BY: (Name, Grade, AFSC) _____ _____
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Atch 2

D _{MPE} Calculation				WPIID: C#72197	DATE: 20220314	
INSTRUCTIONS: ● To Calculate MPE: Enter Frequency in KHz, MHz or GHz (select appropriate radio button) MPE related fields are GREEN ● To calculate D _{MPE} : enter value of PEAK POWER (in watts), and Gain in Decibels (all that is needed for CW). All D _{MPE} fields are RED ● If unit is a pulsed emitter enter pulse width in seconds/milli/micro and also add the value for the Pulse Repetition Frequency. Selecting CW as emitter type, invalidates these fields (BLUE)				BASE: Rome, NY	ORGANIZATION: AFRL	
				WORKPLACE: Newport Antenna Measurement Facility		
				BUILDING LOCATION: N/A	ROOM/AREA: N/A	
$D_{MPE} = 3.28 \sqrt{\frac{P_{avg} \times G_{abs}}{4 \times \pi \times MPE}} = \text{Distance in feet to MPE}$				Where: D _{MPE} = distance in feet from the antenna to the point at which the MPE (in W/m ²) is found 3.28 = conversion from meters to feet P _{avg} = average power in watts (if pulsed, you will have to use the duty factor (DF)) G _{abs} = absolute gain (calculated from the gain in decibels) (G _{abs} = 10 ^{0.5dB/10}) (unitless) 4 = unitless constant MPE = maximum permissible exposure		
EMITTER NOMENCLATURE: MAS-5 Port 5		DESCRIPTION: Multiport Antenna System			TYPE/EMITTER: Continuous Wave (CW) CW/Mod	
FREQUENCY: 30 MHz	Peak Power (P _{pk}) (watts): 1,000 Watts	Beam Width (BW) 0 degrees	Class: Omnidirectional	Pulse Repetition Frequency (PRF) 0 pps	P _{avg} (Watts (W)) 1000	
GAIN IN DECIBELS: 12 Db		ABSOLUTE GAIN (G _{abs}): 15.85	If you know the G _{abs} input here only		For ROTATING BEAM EMITTERS: D _{MPE} = 3.28 √(P _{avg} × G _{abs} × RRF / (4 × π × MPE)) = feet	
		Beam Width (BW): 180 degrees		Sector Size (SS): 360 degrees		
		RRF: 0.5		IMPORTANT: If the emitter is NOT a rotating beam, the BW and SS should both be set to 1		
Upper Tier		Lower Tier		ADJUST MPE: MPE _{adj} = AT / ET × MPE		
E-field		H-field		E-field		
MPE 10.00 w/m ²		111.11 w/m ²		2.00 w/m ²		
D _{MPE} 26.05 Ft		7.81 Ft		58.24 Ft		
				Where: MPE _{adj} = Adjusted MPE AT = Averaging Time (from chart below) ET = Actual Exposure time (has to be less than AT) (mins) MPE = Maximum Permissible Exposure for the given frequency		
Exposure Reference Tables (Table Calculates where required (green fields) base on the given frequency)						
Maximum Permissible Exposures (MPE) for Controlled RF Environments (Upper Tier)						
Frequency range (MHz)	RMS electric field strength (E) ^a (V/m)	RMS magnetic field strength (H) ^a (A/m)	RMS power density, E-field (W/m ²)	RMS power density, H-field (W/m ²)	Averaging time E ² , H ² , or S (min)	
0.1-1.0	1842	0.375/f ₀ N/A	9000	100000/f ₀ ² N/A	6	
1.0-30	1842/f ₀ 61.40	0.375/f ₀ 0.54	9000/f ₀ ² 10	100000/f ₀ ² 111	6	
30-100	61.4	0.375/f ₀ 0.54	10	100000/f ₀ ² 111	6	
100-300	61.4	0.163	10		6	
300-3000	-	-	f ₀ /90	N/A	6	
3000-30000	-	-	100		19.5/(f ₀ -1.579)	
30000-300000	-	-	100		3.52/(f ₀ -0.476)	
Note—f ₀ is the frequency in MHz, f ₀ is the frequency in GHz. a. For exposures that are uniform over the dimensions of the body, such as certain far-field plane-wave exposures, the exposure field strengths and power densities are compared with the MPEs in the table. For non-uniform exposures, the mean values of the exposure fields, as obtained by spatially averaging the squares of the field strengths or averaging the power densities over an area equivalent to the vertical cross section of the human body. b. These plane-wave equivalent power density values are commonly used as a convenient comparison with MPEs at higher frequencies and are displayed on some instruments in use.						
Action Level - Maximum Permissible Exposures for the General Public When No RF Safety Program (RFSP) Exists (Lower Tier)						
Frequency range (MHz)	RMS electric field strength (E) ^a (V/m)	RMS magnetic field strength (H) ^a (A/m)	RMS power density, E-field (W/m ²)	RMS power density, H-field (W/m ²)	Averaging time E ² or S (min)	Averaging time H ² (min)
0.1-1.34	61.4	0.375/f ₀ N/A	1000	100000/f ₀ ² N/A	6	6
1.34-3	61.4/f ₀ N/A	0.375/f ₀ N/A	1000/f ₀ ² N/A	100000/f ₀ ² N/A	f ₀ ² /20.3	6
3-30	61.4/f ₀ 27.46	0.375/f ₀ 0.54	1000/f ₀ ² 2.00	100000/f ₀ ² 111.11	30	6
30-100	27.5	0.375/f ₀ 0.54	2	100000/f ₀ ² 111.03	30	6.00
100-400	27.5	0.0729	2		30	
400-2000	-	-	f ₀ /200	N/A	30	
2000-5000	-	-	10		30	
5000-30000	-	-	10		100/f ₀	N/A
30000-100000	-	-	10		35.24/f ₀ ^{0.67}	N/A
100000-300000	-	-	10	N/A	100000/f ₀ ^{0.67}	N/A
Note—f ₀ is the frequency in MHz, f ₀ is the frequency in GHz. a. For exposures that are uniform over the dimensions of the body, such as certain far-field plane-wave exposures, the exposure field strengths and power densities are compared with the MPEs in the table. For non-uniform exposures, the mean values of the exposure fields, as obtained by spatially averaging the squares of the field strengths or averaging the power densities over an area equivalent to the vertical cross section of the human body (projected area), or a smaller area depending on the frequency (see "Notes to Tables" below), are compared with the MPEs in the table. b. The left column is the averaging time for E ² , the right column is the averaging time for H ² (or frequencies greater than 400 MHz, the averaging time is for power density S). c. These plane-wave equivalent power density values are commonly used as a convenient comparison with MPEs at higher frequencies and are displayed on some instruments in use.						
PREPARED BY: (Name, Grade, AFSC) Austin T. Bennett Name: AUSTIN T. BENNETT Title: Branch Chief, Installation Site Support				REVIEW BY: (Name, Grade, AFSC)		

Atch 2

Appendix D: US-DOIFWS Consultation, IPAC Species List



United States Department of the Interior

FISH AND WILDLIFE SERVICE
New York Ecological Services Field Office
3817 Luker Road

Cortland, NY 13045-9385

Phone: (607) 753-9334 Fax: (607) 753-9699

<http://www.fws.gov/northeast/nyfo/es/section7.htm>



In Reply Refer To:

Project Code: 2022-0027583

Project Name: Stockbridge and Newport Facilities HF Antenna Installs

April 04, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2))

04/04/2022

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(c). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see <https://www.fws.gov/birds/policies-and-regulations.php>.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see <https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

04/04/2022

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Attachment(s):

- Official Species List

01/04/2022

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New York Ecological Services Field Office

3817 Luker Road

Cortland, NY 13045-9385

(607) 753-9334

04/04/2022

Project Summary

Project Code: 2022-0027583
Event Code: None
Project Name: Stockbridge and Newport Facilities HF Antenna Installs
Project Type: New Constr - Above Ground
Project Description: The proposed project includes the construction of two 100 ft. Beyond Line of Sight (BLOS) High Frequency (HF) (3-30 MHz) antennas. One at the Newport Research Facility Tanner Hill location, and one at Stockbridge Research Facility. BLOS function is to primarily communicate between Stockbridge and Kirtland AFB, NM and between Newport and Kirtland AFB, NM. Roughly 2000 miles. A 650 SF facility will be constructed at each HF antenna tower site for collection and interpretation of data received from each respective HF Antenna.

Each new HF Antenna support building will be constructed with a reinforced concrete foundation, CMU block walls with exterior insulation and cladding that is appropriate for the regional climate, metal roofing, and with infrastructure support systems sized to meet the building loads for each respective system. Buildings will not have restrooms or domestic water capabilities. Each new building will be constructed to meet SCIF security standards. A storage facility will be constructed on the Newport Test Annex No 2 Transmitter Site to replace a current facility that will be demolished as part of the site improvements on the Newport Test Annex Receiver Site.

Additionally this project proposes the construction an 80 ft. walk up tower facility on Irish Hill for experimentation in the microwave RF frequency range (30 MHz to the 300 GHz), Thz range and Optical frequency range. This new tower will be utilized in performing the same types of experimentation that is currently being performed at the Newport test site. The 80 foot walk up tower will replace an existing experimentation tower currently in use. All experimentation is covered by the current Form 5 authorization.

BLOS - HF Testing is not new or unique to Newport and Stockbridge. The frequency range of operation for both test sites includes testing in the 3 to 30 MHz (High Frequency HF) range. The proposed HF antennas will be located on a 100 ft. tower with the entire antenna footprint located within an 80 ft. radius security fence. The fence will prevent personnel from entering the antenna footprint and coming in contact with the tower structure during frequency transmission.

The proposed action also includes the demolition and removal of

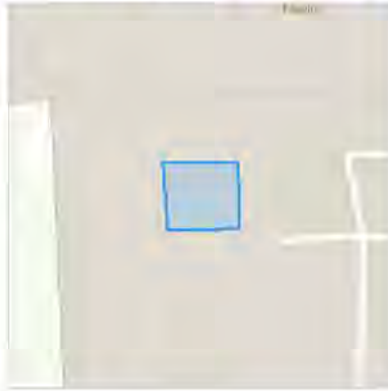
04/04/2022

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unoccupied Building 1605, and Building 1607 including all utilities and foundation, the site returned to grade, and re-seeded into green space.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@43.0319059,-75.6529447,1045904,14z>



Counties: Madison County, New York

04/04/2022

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

01/04/2022

IPaC User Contact Information

Agency: Air Force
Name: Jeffrey Sann
Address: Air Force Research Laboratory Rome Labs
Address Line 2: 150 Electronic Parkway
City: Rome
State: NY
Zip: 13316
Email: jeffrey.sann@us.af.mil
Phone: 3153302146



United States Department of the Interior

FISH AND WILDLIFE SERVICE
New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385

Phone: (607) 753-9334 Fax: (607) 753-9699

<http://www.fws.gov/northeast/nyfo/es/section7.htm>



In Reply Refer To:
Project Code: 2022-0030725
Project Name: HF Stockbridge Location

April 12, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2))

04/12/2022

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(c). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see <https://www.fws.gov/birds/policies-and-regulations.php>.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see <https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. **Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.**

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Attachment(s):

- Official Species List

04/12/2022

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New York Ecological Services Field Office

3817 Luker Road

Cortland, NY 13045-9385

(607) 753-9334

04/12/2022

Project Summary

Project Code: 2022-0030725
Event Code: None
Project Name: HF Stockbridge Location
Project Type: New Constr - Above Ground
Project Description: The proposed project includes the construction of two 100 ft. Beyond Line of Sight (BLOS) High Frequency (HF) (3-30 MHz) antennas. One at the Newport Research Facility Tanner Hill location, and one at Stockbridge Research Facility. BLOS function is to primarily communicate between Stockbridge and Kirtland AFB, NM and between Newport and Kirtland AFB, NM. Roughly 2000 miles. A 650 SF facility will be constructed at each HF antenna tower site for collection and interpretation of data received from each respective HF Antenna.

Each new HF Antenna support building will be constructed with a reinforced concrete foundation, CMU block walls with exterior insulation and cladding that is appropriate for the regional climate, metal roofing, and with infrastructure support systems sized to meet the building loads for each respective system. Buildings will not have restrooms or domestic water capabilities. Each new building will be constructed to meet SCIF security standards. A storage facility will be constructed on the Newport Test Annex No 2 Transmitter Site to replace a current facility that will be demolished as part of the site improvements on the Newport Test Annex Receiver Site.

Additionally this project proposes the construction an 80 ft. walk up tower facility on Irish Hill for experimentation in the microwave RF frequency range (30 MHz to the 300 GHz), Thz range and Optical frequency range. This new tower will be utilized in performing the same types of experimentation that is currently being performed at the Newport test site. The 80 foot walk up tower will replace an existing experimentation tower currently in use. All experimentation is covered by the current Form 5 authorization.

BLOS - HF Testing is not new or unique to Newport and Stockbridge. The frequency range of operation for both test sites includes testing in the 3 to 30 MHz (High Frequency HF) range. The proposed HF antennas will be located on a 100 ft. tower with the entire antenna footprint located within an 80 ft. radius security fence. The fence will prevent personnel from entering the antenna footprint and coming in contact with the tower structure during frequency transmission.

The proposed action also includes the demolition and removal of

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unoccupied Building 1605, and Building 1607 including all utilities and foundation, the site returned to grade, and re-seeded into green space.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@43.1616324,-75.06558573651367,14z>



Counties: Herkimer County, New York

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Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

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IPaC User Contact Information

Agency: Air Force
Name: Jeffrey Sann
Address: Air Force Research Laboratory Rome Labs
Address Line 2: 150 Electronic Parkway
City: Rome
State: NY
Zip: 13316
Email: jeffrey.sann@us.af.mil
Phone: 3153302146

Appendix E: US-DOIFWS Species Conclusion Table (Eagles)

Species Conclusions Table Project Name: HF Antennae

Stockbridge and Newport

Date: 4/14/2022

Species Name	Potential Habitat Present?	Species Present?	Piping Plover Critical Habitat Present?	ESA / Eagle Act Determination (REQUIRED) (e.g. no effect; may affect but not likely to adversely affect; likely to adversely affect; no take; may affect but 4(d) rule).	Notes / Documentation Summary (include full rationale in your report)
Bald Eagle				No Effect	Unlikely to disturb nesting Bald Eagles

Last modified: 9/29/2016

Appendix F: THPO Concurrence Correspondence

ONEIDA INDIAN NATION:

From: Jesse Bergevin
To: STAGNER, KENDRA M GS-11 USAF AFMC AFRL/RIOCV
Cc: HOLBRITTER, JACLYN A DR-02 USAF AFMC AFRL/RIOCV
Subject: [Non-DoD Source] RE: LIFT and HF Tower Section 106 Consultation
Date: Tuesday, May 31, 2022 1:49:06 PM

Kendra,

After a review of the documentation for the Limited Iterative Flight Test initiative and Install HF Towers at Test Sites projects (the "Projects"), the Oneida Indian Nation concurs with the U.S. Air Force and Air Force Research Laboratory/Information Directorate that the Projects will have no effect on historic properties listed in or eligible for listing in the National Register of Historic Places.

Please let me know if there are any questions.

Best Regards,

JESSE BERGEVIN
Historical Resources Specialist
ONEIDA INDIAN NATION
P: 315.829.8463
2037 Dream Catcher Plaza
Oneida, NY 13421

-----Original Message-----

From: STAGNER, KENDRA M GS-11 USAF AFMC AFRL/RIOCV [<mailto:kendra.stagner.1@us.af.mil>]

Sent: Tuesday, May 10, 2022 2:49 PM

To: Jesse Bergevin <jbergevin@oneida-nation.org>

Cc: HOLBRITTER, JACLYN A DR-02 USAF AFMC AFRL/RIOCV <jaclyn.holbitter@us.af.mil>

Subject: LIFT and HF Tower Section 106 Consultation

Good afternoon Jesse,

Attached you will find Section 106 consultation packages for our Limited Iterative Flight Test (LIFT) initiative as well as Install HF Towers at Test Sites project for your review.

Please let us know if you have any questions or concerns regarding either undertaking.

Thanks!!

Kendra

Kendra M. Stagner
Biological Scientist, GS-11
Air Force Research Laboratory
Information Directorate
150 Electronic Parkway
Rome, NY 13441
(P) 315.330.2576
Kendra.Stagner.1@us.af.mil

ONONDAGA NATION:

From: Anthony Gonyea
To: STAGNER, KENDRA M GS-11 USAF AFMC AFRL/RIOCV
Subject: [Non-DoD Source] Re: Consultation Area of Concern
Date: Tuesday, May 10, 2022 2:38:38 PM

Yes, that is correct.

On Tue, May 10, 2022, 2:32 PM STAGNER, KENDRA M GS-11 USAF AFMC AFRL/RIOCV

<kendra.stagner.1@us.af.mil <<mailto:kendra.stagner.1@us.af.mil>> > wrote:

Good afternoon Mr. Gonyea,

I'd like to verify that per our conversation this morning, Air Force Research Laboratory Information Directorate in Rome, and its associated geographically separated units in Stockbridge, Newport (No. 1 & 2) and Verona are outside the Onondaga Nation's area of concern and the Onondaga Nation is not interested in receiving Section 106 Consultation correspondence regarding undertakings at those locations, would that be correct?

Thank you!
Kendra M. Stagner
Biological Scientist, GS-11
Air Force Research Laboratory
Information Directorate
150 Electronic Parkway
Rome, NY 13441
(P) 315.330.2576
Kendra.Stagner.1@us.af.mil <<mailto:Kendra.Stagner.1@us.af.mil>>

ST REGIS MOHAWK:

From: STAGNER, KENDRA M GS-11 USAF AFMC AFRL/RIOCV
To: SANN, JEFFREY M DR-02 USAF AFMC AFRL/RIOCV
Subject: FW: Section 106 Consultation
Date: Thursday, June 30, 2022 12:00:11 PM
Followed up again via phone on May 24, 2022 and Mr. Bonapart confirmed that he had received the section 106 packages and was behind on reviewing section 106 packages.

-----Original Message-----

From: STAGNER, KENDRA M GS-11 USAF AFMC AFRL/RIOCV
Sent: Tuesday, May 17, 2022 1:58 PM
To: 'darren.bonaparte@srmt-nsn.gov' <darren.bonaparte@srmt-nsn.gov>
Subject: RE: Section 106 Consultation

Good afternoon Mr. Bonaparte,

I just wanted to follow up to ensure you received my previous email regarding Section 106 consultation for our LIFT initiative and HF Tower Installation?
Thank you!
Kendra

-----Original Message-----

From: STAGNER, KENDRA M GS-11 USAF AFMC AFRL/RIOCV
Sent: Tuesday, May 10, 2022 2:43 PM
To: darren.bonaparte@srmt-nsn.gov
Subject: Section 106 Consultation

Good afternoon Mr. Bonaparte,

Per our conversation this morning, attached are the Section 106 consultation letters for our Limited Iterative Flight Test (LIFT) initiative and Installation of HF Towers at Test Sites and their associated attachments. Please feel free to reach out if you have any questions or concerns.
Thank you!!
Kendra
Kendra M. Stagner

Environmental Assessment: High Frequency Beyond Line of Sight Antenna Project, AFRL/RI Newport and Stockbridge Test Annexes, New York. UNCLASSIFIED

Biological Scientist, GS-11
Air Force Research Laboratory
Information Directorate
150 Electronic Parkway
Rome, NY 13441
(P) 315.330.2576
Kendra.Stagner.1@us.af.mil

Appendix G: SHPO Concurrence Letter



New York State
Parks, Recreation and
Historic Preservation

KATHY HOCHUL
Governor

ERIK KULLESEID
Commissioner

May 31, 2022

Colonel Fred E. Garcia
Director, Information Directorate & Commander, AFRL/Detachment 4
United States Air Force Research Laboratory
333 East Washington Street
Syracuse, New York 13202

Re: **Install HF Antenna Towers at Test Sites
Madison County
22PR03180**

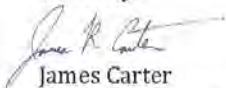
Dear Colonel Garcia,

Thank you for requesting the comments of the New York State Historic Preservation Office (SHPO). We have reviewed the provided documentation in accordance with Section 106 of the National Historic Preservation Act of 1966. These comments are those of SHPO and relate only to above-ground built historic/cultural resources. These comments do not include or relate to archaeological resources in or near your project which must also be considered in accordance with Section 106 of the National Historic Preservation Act of 1966. They also do not include or relate to other environmental impacts to New York State Parkland that may be involved in or near your project. Such impacts must be considered as part of the environmental review of the project pursuant to the National Environmental Policy Act and/or the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8).

We have reviewed the documentation that was submitted to our office on May 10th, 2022 for: Installation of HF antennas at Stockbridge Test Annex and Newport Test Annex No.1 and installation of a walk up tower at Newport Test Annex No. 2. Based on this review, the SHPO concurs with the USAF that the aforementioned project will have *No Historic Properties Affected* on properties eligible for or listed on the National Register of Historic Places.

If you have any questions, I can be reached via e-mail at james.carter@parks.ny.gov

Sincerely,



James Carter
Historic Preservation Program Analyst
Division for Historic Preservation
New York State Parks, Recreation & Historic Preservation

New York State Office of Parks, Recreation and Historic Preservation
Division for Historic Preservation, Peebles Island, PO Box 189, Waterford, New York 12188-0189
518-237-8643 • <https://parks.ny.gov/shpo>