Final
Environmental Assessment
Combat Air Forces Adversary Air
Seymour Johnson Air Force Base, North Carolina

June 2020

United States Air Force
4th Fighter Wing

Seymour Johnson Air Force Base, North Carolina



This page intentionally left blank

PRIVACY ADVISORY

This Final Environmental Assessment is provided in accordance with the National Environmental Policy Act, the President's Council on Environmental Quality National Environmental Policy Act Regulations (40 Code of Federal Regulations Parts 1500-1508), and 32 Code of Federal Regulations Part 989, *Environmental Impact Analysis Process (EIAP)*. Private information from public commenters, such as personal home addresses and phone numbers, is not published in this document to comply with Privacy Act requirements.

This page intentionally left blank

COVER SHEET

FINAL ENVIRONMENTAL ASSESSMENT (EA) FOR COMBAT AIR FORCES ADVERSARY AIR, SEYMOUR JOHNSON AIR FORCE BASE

a. *Responsible Agency*: United States Air Force (Air Force)

b. *Cooperating Agency*: None

c. *Proposals and Actions:* The environmental assessment (EA) analyzes a Proposed Action to provide dedicated contract adversary air (ADAIR) sorties for Combat Air Forces training for Seymour Johnson Air Force Base (AFB). Contract ADAIR would support Seymour Johnson AFB training operations out of Kinston Regional Jetport (ISO), Kinston, North Carolina. The Proposed Action would include the addition of 91 contracted maintainers and 18 contracted pilots and approximately 2,720 annual contracted sorties. Approximately 2,590 sorties would be added to perform training activities within the Burner Air Traffic Control Assigned Airspace (ATCAA) with Hatteras ATCAA/Pamlico Military Operations Areas (MOAs), R-5306A and Core MOA, Seymour Johnson Echo MOA, Gamecock A MOA, Farmville MOA, R-5314/Phelps MOA, and Warning Areas W-122, W-177, W-161, and W-72, while 130 sorties would be for trips off the airport for maintenance and some pilot proficiency time. The Proposed Action includes elements affecting ISO and include ADAIR aircraft, facilities, maintenance, personnel, and sorties.

d. *For Additional Information:* Ms. Cathryn Pesenti, 4th Civil Engineer Squadron, 1095 Peterson Avenue, Seymour Johnson AFB, North Carolina 27531, or by email to cathryn.pesenti@us.af.mil.

e. *Designation:* Final EA

f. *Abstract:* This EA has been prepared pursuant to provisions of the National Environmental Policy Act, Title 42 United States Code §§ 4321 to 4347, implemented by Council on Environmental Quality Regulations, Title 40, Code of Federal Regulations (CFR) Parts 1500 to 1508, and 32 CFR Part 989, *Environmental Impact Analysis Process (EIAP)*. Potentially affected environmental resources were identified in coordination with local, state, and federal agencies. Specific environmental resources with the potential for environmental consequences include airspace management and use; noise; safety; air quality; biological resources; land use; socioeconomics – income and employment; environmental justice and protection of children; cultural resources; hazardous materials and waste and toxic substances; and infrastructure, utilities, and transportation.

The purpose of the Proposed Action is to provide dedicated contract ADAIR sorties to improve the quality of training and readiness of pilots of the 4th Fighter Wing located at Seymour Johnson AFB, North Carolina. By providing a dedicated contract ADAIR capability, F-15E aircrews would gain more realistic air-to-air training during their training syllabus tasks. Dedicated contract ADAIR would also allow the unit to free up resources used to self-generate ADAIR and more effectively use those available flying hours. Additionally, other Air Force units that are tasked to provide ADAIR training support at Seymour Johnson AFB could recapitalize valuable flying hours to focus on increasing their own levels of proficiency and readiness.

Contract ADAIR training scenarios would include the use of combat tactics and procedures that differ from Combat Air Forces tactics to simulate an opposing force. The elements affecting ISO include contract ADAIR aircraft, facilities, maintenance, personnel, and sorties. Elements affecting the airspace include airspace use and defensive countermeasures. The Proposed Action at ISO would include the establishment of an estimated 91 contracted maintainers and 18 contracted pilots who would operate an estimated 14 aircraft. Three aircraft types (F-5, A-4K, T-59 Hawk) have been identified which would meet the needs of the Air Force for contract ADAIR selection for Seymour Johnson AFB based on performance capabilities of the aircraft and how those capabilities best meet mission training requirements at the installation. Contracted ADAIR service providers may ultimately choose another type of aircraft to support Air Force ADAIR needs for Seymour Johnson AFB; however, any aircraft selected would need to operate within the parameters and impact levels evaluated within this EA or supplemental National Environmental Policy Act analysis would be required. The proposed facilities for use at ISO include the required ramp space; maintenance space; operational space; petroleum, oil and lubricant storage; runway access; and associated parking to support the Proposed Action; however, the selected contractor would be required to coordinate specific requirements with the airport. If sufficient facilities are not available at the airport, the contractor may be required to fund the renovation or construction of additional facilities. Separate environmental analysis would be completed as required.

The analysis of the affected environment and environmental consequences of implementing the Proposed Action and alternatives, when considered cumulatively with past, present, and reasonably foreseeable future actions, concluded that by implementing standing environmental protection measures and Best Management Practices, there would be no significant adverse impacts from contract ADAIR operations at ISO or in the special use airspace on the following resources: airspace management and use; noise; safety; air quality; biological resources; land use; socioeconomics – income and employment; environmental justice; cultural resources; hazardous materials and wastes and toxic substances; and infrastructure, transportation, and utilities.

This page intentionally left blank

FINDING OF NO SIGNIFICANT IMPACT (FONSI)

COMBAT AIR FORCES ADVERSARY AIR SEYMOUR JOHNSON AIR FORCE BASE

Pursuant to provisions of the National Environmental Policy Act, 42 United States Code (U.S.C.) §§ 4321 to 4370h; Council on Environmental Quality Regulations, 40 Code of Federal Regulations (CFR) Parts 1500 to 1508; and 32 CFR Part 989, *Environmental Impact Analysis Process (EIAP),* the United States Air Force (Air Force) prepared the attached Environmental Assessment (EA) to address the potential environmental consequences associated with providing contract adversary air (ADAIR) sorties for improving training and readiness of pilots at Seymour Johnson Air Force Base (AFB), North Carolina.

Purpose and Need

The purpose of the Proposed Action is to provide dedicated contract ADAIR sorties to improve the quality of training and readiness of the 4th Fighter Wing (4 FW) pilots located at Seymour Johnson AFB. Contract ADAIR support would employ adversary tactics across the training spectrum from basic fighter maneuvers to higher-end, advanced, simulated, combat training missions. By providing a dedicated contract ADAIR capability, F-15E fighter aircrews would gain more realistic air-to-air training during their training syllabus tasks. Dedicated contract ADAIR would also allow the unit to free up resources used to self-generate ADAIR and more effectively use those available flying hours. Additionally, other Air Force (4th generation) units that may have been tasked to provide ADAIR training support for Seymour Johnson AFB may now recapitalize valuable flying hours to focus on increasing their own levels of proficiency and readiness.

The need for the action is to provide better and more realistic training for the F-15E flight training program at Seymour Johnson AFB. Dedicated contract ADAIR is critical to improving fighter aircrew readiness as it provides realistic training opportunities to employ Combat Air Forces (CAF) tactics and procedures that optimize the training value of every mission. Contract ADAIR can be used in basic building block syllabus sorties or the very advanced and fluid environment of multiaircraft air combat required by the training syllabus.

Description of Proposed Action and Alternatives

The Air Force is proposing to provide dedicated contract ADAIR sorties for CAF training for Seymour Johnson AFB, to address shortfalls in F-15E fighter aircrew production capability and provide the necessary capability and capacity to employ adversary tactics across the training spectrum from basic fighter maneuvers to higher-end, advanced combat training missions. Training scenarios would include the use of combat tactics and procedures that differ from CAF tactics to simulate an opposing force. The Proposed Action includes elements affecting the airport proposed for use and military training airspace. The elements affecting the airport proposed for use include contract ADAIR aircraft, facilities, maintenance, personnel, and sorties. The elements affecting the airspace include airspace use and defensive countermeasures.

The Proposed Action would include the establishment of an estimated 91 contracted maintainers and 18 contracted pilots who would operate an estimated 14 aircraft and approximately 2,720 annual sorties. Three aircraft types (F-5, A-4K, and T-59 Hawk) have been identified as capable of providing contract ADAIR support to F-15E pilots stationed at Seymour Johnson AFB based on performance capabilities of the aircraft and how those capabilities best meet mission training requirements. One or a combination of these aircraft types may be operated by a contractor in support of ADAIR training.

Of the 2,720 proposed sorties, approximately 2,590 annual sorties would support training activities within special use airspace (while 130 sorties would be for trips off the airport for maintenance and some pilot proficiency time). The primary operational airspace that would be used by contract ADAIR aircraft is the Warning Area W-122. Other airspace available for use by ADAIR missions include Seymour Johnson Echo (hereto after referred to as Echo), Gamecock A, Farmville, Phelps, Pamlico and Core Military Operations Areas (MOAs); Burner and Hatteras Air Traffic Control Assigned Airspaces (ATCAAs); Restricted Areas R-5306A and R-5314; and Warning Areas W-161, W-177, and W-72. Contract ADAIR aircraft would employ defensive countermeasures (e.g., chaff and flares) in all the Warning Areas.

In addition to the No Action Alternative, one alternative for the proposed contract ADAIR was identified for evaluation in the EA. Seymour Johnson AFB does not have the capacity to host contracted ADAIR operations on-base; therefore, one civilian airport was analyzed as suitable for possible use by a contract ADAIR service provider to support Seymour Johnson AFB operations.

Alternative 1, Kinston Regional Jetport

Under the Proposed Action, the CAF would establish contract ADAIR capabilities (an estimated 14 aircraft) providing 2,720 annual sorties for Seymour Johnson AFB operating out of Kinston Regional Jetport at Stallings Field (ISO), Kinston, North Carolina. Out of the 2,720 training sorties, 1,968 would occur in W-122, 197 in the Burner ATCAA with Hatteras ATCAA/Pamlico MOAs, 49 in R-5306A and the Core MOA, 49 in the Echo MOA, 49 in the Gamecock A MOA, 197 in the Farmville MOA, 74 in the R-5314/Phelps MOA, 39 in W-177, 39 in W-161, and 20 in W-72 with multiple airspaces scheduled concurrently. The remaining sorties are expected for aircraft leaving for or returning from either maintenance or other deployments.

No Action Alternative

No action means that an action would not take place, and the resulting environmental effects from taking no action would be compared with the effects of allowing the proposed activity to go forward. No action for this EA reflects the status quo, where no contract ADAIR support to Seymour Johnson AFB would occur.

Summary of Findings

Potentially affected environmental resources were identified through communications with state and federal agencies and review of past environmental documentation. Specific environmental resources with the potential for environmental consequences include airspace management and use; noise; safety; air quality; biological resources; land use; socioeconomics – income and employment; environmental justice and protection of children; cultural resources; hazardous materials and wastes and toxic substances; and infrastructure, utilities, and transportation.

The addition of an estimated 2,720 sorties in any of the airport's airspace is not expected to impact the operational capacity or necessitate changes to airspace locations or dimensions of the airspace at ISO. Potential impacts at ISO are expected to be negligible and long-term. Potential impacts on the airspace around the airport would be negligible. Likewise, the airspace proposed for use by contract ADAIR have the capacity and the dimensions necessary to support additional sorties; therefore, negligible impacts on airspace management and use are anticipated. Under the Proposed Action, the annual number of operations supporting Seymour Johnson AFB would increase by 20 percent but would not impact the operational capacity or necessitate changes to the locations or dimensions of the special use airspace proposed for use. Potential impacts on the special use airspace are expected to be negligible and long-term.

Under the High Noise Scenario at ISO, long-term, highly noticeable noise increases (3 to 9 A-weighted decibels [dBA]) for all points of interest (POIs) are expected, though Day-Night Average Sound Levels (DNLs) at POIs are below 65 dBA. Under the Medium (3 to 7 dBA) and Low (3 to 6 dBA) Noise Scenarios at ISO, long-term, highly noticeable noise increases for all POIs are expected, though DNLs at POIs are below 65 dBA. Under the High, Medium, and Low Noise Scenarios at ISO, there is potential for moderate impacts on all POIs as well as an increase in the amount of noise in areas surrounding the airport.

There would be a negligible increase in noise from additional contract ADAIR subsonic flight operations in the overland special use airspace and/or supersonic flight operations in Warning Areas.

Safety zones at ISO are not expected to change. No significant impacts on emergency response are anticipated to occur. Contract ADAIR would work with the airport safety office to obtain a license, if needed, to store egress cartridge-activated and propellant-activated devices and comply with all federal, state, and local directives governing the security, storage, and handling of munitions, including meeting minimal facility safety requirements and separation distances for storage and maintenance facilities. Quantity-Distance arcs would need to be established around new explosives storage facilities at the airport to identify the change in safety procedures and establish safety zones around these facilities. No significant impacts on airspace/flight safety are anticipated to occur provided that contractor flight safety rules are followed, and all applicable local, state, and federal regulations are implemented. No impacts are expected on flight safety

under the implementation of contractor flight safety rules and bird/wildlife-aircraft strike hazard (BASH) procedures.

Increased air emissions resulting from contract ADAIR operations under the Proposed Action are not considered significant at ISO. The annual emissions of carbon monoxide for the Medium and Low Air Quality Scenarios are over the 100 tons per year (tpy) *de minimis* threshold for conformity; however, ISO is in an attainment area for carbon monoxide, thus the conformity rule is not applicable. Nitrogen oxide emission for all emission scenarios are below the 100 tpy *de minimis* threshold for conformity rule applicability. In the airspace, none of the criteria pollutants emission rates exceeded the 100 tpy *de minimis* threshold; therefore, no impacts on air quality are expected from contract ADAIR operations. No conformity analysis is required.

Noise and aircraft movement impacts from increased operations at the airport would have negligible, short- and long-term impacts on wildlife. Airfield management and risk reduction implementation measures associated with the BASH program would continue to reduce BASH resulting in a minor impact on birds and other wildlife. There are no ground-disturbing activities associated with the Proposed Action. Sonic booms from supersonic flights are expected during training activities; however, potential impacts on wildlife in the airspace associated with sonic booms are not expected. No impacts on threatened and endangered species from aircraft operations are anticipated. Additionally, federally listed sea turtles and sea birds could be impacted from ingestion of residual plastic chaff and flare components. The Air Force has made a *may affect but not likely to adversely affect* determination for the Bermuda petrel, eastern black rail, piping plover, red knot, roseate tern, West Indian manatee, blue whale, fin whale, North Atlantic right whale, sei whale, sperm whale, the green sea turtle, hawksbill sea turtle, Kemp's ridley sea turtle, leatherback sea turtle, loggerhead sea turtle, Atlantic sturgeon, giant manta ray, and the oceanic white tip shark. There would be no impact on designated Critical Habitat. The Air Force received concurrence from the US Fish and Wildlife Service North Carolina Field Office and the self-certification letter from the Virginia Field Office with the effect determinations for the federally listed species under their respective jurisdictions. Consultation discussions with the National Marine Fisheries Service (NMFS) Southeast Regional Office determined that this action is similar enough in scope, location, and effects determination as the consultation completed for the Joint Base Langley-Eustis ADAIR Environmental Impact Analysis Process, for which concurrence was received from the NMFS Greater Atlantic Regional Fisheries Office and does not require additional consultation or response from NMFS.

Changes to the noise environment from increased noise as a result of the Proposed Action may result in long-term impacts on land use compatibility. At ISO, under all noise scenarios, an overall increase in newly exposed area affected by noise levels between the 65- and 80-dBA DNL would occur. The amount of land zoned for residential use may increase within the 65- to 80-dBA DNL contour as much as 152 acres (ac) under the High Noise Scenario, 123 ac under the Medium Noise Scenario, and 43 ac under the Low Noise Scenario within the 65- to 80-dBA DNL contours, rendering this area potentially incompatible for residential use. The change in noise in some areas surrounding ISO would be potentially moderate and long-term and may be incompatible with the existing residential land use.

The 109 contracted ADAIR maintenance personnel and pilots would represent a very small increase in the total employment associated with ISO. Therefore, no adverse impacts on income and employment would occur from the addition of contract ADAIR personnel regardless of the noise scenario implemented. At ISO, the increased annual expenditures in the region of up to approximately $39 million for contract ADAIR support would represent a long-term, potentially major, beneficial impact on the region.

There would be no disproportionate impacts on minority populations, low-income communities, or children at ISO.

No ground disturbance would take place as part of the Proposed Action at ISO; therefore, no archaeological resources (surface or subsurface) would be disturbed or otherwise affected. No historic structures or districts or traditional cultural resources or sacred sites have been identified at the airport. The High, Medium, and Low Noise Scenarios for implementing contract ADAIR in the special use airspace results in a negligible increase in noise, and therefore would have no effect, and consequently no impact, to architectural resources, cultural resources, or historic properties under the overland special use airspace. Sorties within the Warning Areas would be performed at an altitude over the Atlantic Ocean that would not

affect potential submerged resources. The Proposed Action would therefore have no effect, and consequently no impact, to historic properties in the Warning Areas.

Hazardous wastes generated as a result of contract ADAIR operations would be stored and disposed in accordance with existing plans and procedures; therefore, no impacts from managing hazardous waste are expected. No impacts are expected from asbestos-containing materials, lead-based paint, or polychlorinated biphenyl-containing materials. There is a low potential for radon to pose a health hazard at ISO. As such, no impacts from radon are anticipated.

ISO includes a runway with associated facilities that are sufficient to meet the needs of the proposed contract ADAIR operations. An existing Fixed-Base Operator is available to provide all associated major maintenance services for jet aircraft, and there is sufficient aircraft parking and surfaces to support contractor operations. The facilities, transportation network, and communication infrastructure can support the proposed operations, and the site is fully serviced with gas, electric, water/wastewater, and solid waste management utilities. The additional vehicular traffic associated with contract personnel is not anticipated to cause impacts on local traffic or the transportation network surrounding the airport. The impacts on the existing infrastructure and utility service at ISO are anticipated to be negligible. Accordingly, the direct, long-term, adverse impact on the area transportation network from the additional contract ADAIR personnel associated with the Proposed Action would be minor.

Cumulative Impacts

Routine construction and planned infrastructure improvements would continue to occur at and near the airport simultaneously with the Proposed Action. In addition to these routine projects, past, present, and reasonably foreseeable future projects were considered in the cumulative impacts analysis for this EA. While some of the construction and infrastructure improvement projects may overlap with implementation with the Proposed Action and there is the potential for an incremental impact, these projects would be short-term, and the incremental impact on noise and air quality would be negligible. Where there are potential impacts from the Proposed Action, the addition of the past, present, or reasonably foreseeable future projects do not significantly increase those impacts to any resources over the long term. No significant cumulative impacts were identified for the special use airspace.

Mitigation

Best Management Practices and environmental commitments are described and recommended in the EA where applicable. No mitigation measures are proposed.

Conclusion

Finding of No Significant Impact. After review of the EA prepared in accordance with the requirements of National Environmental Policy Act; Council on Environmental Quality regulations; and 32 CFR Part 989, *Environmental Impact Analysis Process (EIAP),* and which is hereby incorporated by reference, I have determined that the proposed activities to provide dedicated contract ADAIR sorties to improve the quality of training and readiness of pilots of the 4 FW located at Seymour Johnson AFB, North Carolina, would not have a significant impact on the quality of the human or natural environment. Accordingly, an Environmental Impact Statement will not be prepared. This decision has been made after considering all submitted information, including a review of public and agency comments submitted during the 30-day public comment period, and considering a full range of practical alternatives that meet project requirements and are within the legal authority of the United States Air Force.

KATZER.DEE.J.1153738854 Digitally signed by KATZER.DEE.J.1153738854 Date: 2020.06.26 11:49:21 -04'00'

26 Jun 20

DEE JAY KATZER, Colonel, USAF **DATE**
Chief, Civil Engineer Division (HQ ACC/A4C)

FINAL

ENVIRONMENTAL ASSESSMENT (EA)

FOR

COMBAT AIR FORCES ADVERSARY AIR
SEYMOUR JOHNSON AIR FORCE BASE, NORTH CAROLINA

PREPARED FOR:

Department of the Air Force

June 2020

This page intentionally left blank

TABLE OF CONTENTS

Page

LIST OF FIGURES ..... **vii**

LIST OF TABLES ..... **ix**

LIST OF ACRONYMS AND ABBREVIATIONS ..... **xi**

CHAPTER 1 PURPOSE AND NEED FOR ACTION **1-1**

1.1 INTRODUCTION 1-1
1.1.1 Background 1-1
1.1.2 Location 1-3
1.2 PURPOSE OF THE ACTION 1-6
1.3 NEED FOR THE ACTION 1-6
1.4 DECISION TO BE MADE 1-6
1.5 INTERAGENCY AND INTERGOVERNMENTAL COORDINATION AND CONSULTATIONS 1-7
1.5.1 Interagency/Intergovernmental Coordination and Consultation 1-7
1.5.2 Agency Consultations 1-7
1.5.3 Government-to-Government Consultation 1-8
1.6 APPLICABLE LAWS AND ENVIRONMENTAL REGULATIONS 1-8
1.6.1 National Environmental Policy Act 1-8
1.6.2 The Environmental Impact Analysis Process 1-8
1.7 PUBLIC AND AGENCY REVIEW OF ENVIRONMENTAL ASSESSMENT 1-8
1.8 SCOPE OF THE ENVIRONMENTAL ANALYSIS 1-9

CHAPTER 2 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES **2-1**

2.1 PROPOSED ACTION 2-1
2.1.1 Contract Adversary Air Aircraft 2-1
2.1.2 Facilities 2-1
2.1.3 Maintenance 2-2
2.1.4 Personnel 2-2
2.1.5 Sorties 2-3
2.1.6 Airspace Use 2-3
2.1.7 Defensive Countermeasures 2-4
2.2 SELECTION STANDARDS 2-5
2.3 SCREENING OF ALTERNATIVES 2-6
2.4 ALTERNATIVE ACTIONS ELIMINATED FROM FURTHER CONSIDERATION 2-7
2.5 DETAILED DESCRIPTION OF THE ALTERNATIVES CONSIDERED FOR DETAILED ANALYSIS 2-8
2.5.1 Alternative 1: Contract Adversary Air Operating Out of Kinston Regional Jetport 2-8
2.5.2 No Action Alternative 2-9
2.6 MITIGATION AND BEST MANAGEMENT PRACTICES 2-9
2.7 SUMMARY OF POTENTIAL ENVIRONMENTAL CONSEQUENCES 2-9

CHAPTER 3 AFFECTED ENVIRONMENT **3-1**

3.1 AIRSPACE MANAGEMENT AND USE 3-2
3.1.1 Definition of the Resource 3-2
3.1.2 Existing Conditions – Kinston Regional Jetport 3-4
3.1.3 Existing Conditions – Airspace 3-5
3.2 NOISE 3-5
3.2.1 Definition of the Resource 3-5
3.2.1.1 Noise Metrics 3-7
3.2.1.2 Noise Models 3-10
3.2.2 Existing Conditions – Kinston Regional Jetport 3-11

TABLE OF CONTENTS

Page

3.2.3 Existing Conditions – Airspace 3-15
3.3 SAFETY 3-17
3.3.1 Definition of the Resource 3-17
3.3.2 Aircraft Accident and Incident Notification 3-17
3.3.3 Existing Conditions – Kinston Regional Jetport and Airspace 3-18
3.3.3.1 Ground Safety 3-18
3.3.3.2 Explosive Safety 3-19
3.3.3.3 Flight Safety 3-19
3.4 AIR QUALITY 3-21
3.4.1 Definition of the Resource 3-21
3.4.1.1 Criteria Pollutants 3-22
3.4.1.2 Greenhouse Gases 3-24
3.4.2 Existing Conditions – Kinston Regional Jetport 3-24
3.4.2.1 Regional Climate 3-24
3.4.2.2 Baseline Air Emissions 3-24
3.4.3 Existing Conditions – Airspace 3-25
3.4.3.1 Regional Climate 3-25
3.4.3.2 Baseline Emissions 3-25
3.5 BIOLOGICAL RESOURCES 3-26
3.5.1 Definition of the Resources 3-26
3.5.2 Existing Conditions – Kinston Regional Jetport 3-28
3.5.2.1 Regional Biological Setting 3-28
3.5.2.2 Wetlands 3-29
3.5.3 Existing Conditions – Airspace 3-32
3.5.3.1 Regional Biological Setting – Overland 3-32
3.5.3.2 Regional Biological Setting – Offshore 3-33
3.5.3.3 Wetlands 3-40
3.6 LAND USE 3-40
3.6.1 Definition of the Resource 3-40
3.6.2 Existing Conditions – Kinston Regional Jetport 3-42
3.6.3 Existing Conditions – Airspace 3-42
3.7 SOCIOECONOMICS – INCOME AND EMPLOYMENT 3-44
3.7.1 Definition of the Resource 3-44
3.7.2 Existing Conditions – Kinston Regional Jetport 3-46
3.7.3 Existing Conditions – Airspace 3-47
3.7.3.1 Seymour Johnson Echo Military Operations Area 3-47
3.7.3.2 Gamecock A Military Operations Area 3-47
3.7.3.3 Farmville Military Operations Area 3-47
3.7.3.4 Phelps, Pamlico, and Core Military Operations Areas, Restricted Areas R-5306A and R-5314, and Burner and Hatteras Air Traffic Control Assigned Airspace 3-47
3.8 ENVIRONMENTAL JUSTICE AND PROTECTION OF CHILDREN 3-47
3.8.1 Definition of the Resource 3-47
3.8.2 Existing Conditions – Kinston Regional Jetport 3-49
3.8.3 Existing Conditions – Airspace 3-49
3.8.3.1 Seymour Johnson Echo Military Operations Area 3-49
3.8.3.2 Gamecock A Military Operations Area 3-51
3.8.3.3 Farmville Military Operations Area 3-51
3.8.3.4 Phelps, Pamlico, and Core Military Operations Areas, Restricted Areas R-5306A and R-5314, and Burner and Hatteras Air Traffic Control Assigned Airspace 3-51

TABLE OF CONTENTS

Page

3.9 CULTURAL RESOURCES 3-51
3.9.1 Definition of the Resource 3-51
3.9.2 Existing Conditions – Kinston Regional Jetport 3-52
3.9.2.1 Environmental Setting 3-52
3.9.2.2 Archaeological and Traditional Cultural Properties 3-52
3.9.2.3 Architectural Properties 3-53
3.9.3 Existing Conditions – Airspace 3-53
3.9.3.1 Environmental Setting 3-53
3.9.3.2 National Register of Historic Places Listed Resources 3-54
3.9.3.3 Tribal Lands 3-56
3.9.3.4 Cultural Resources in the Marine Environment 3-56
3.10 HAZARDOUS MATERIALS AND WASTES AND TOXIC SUBSTANCES 3-57
3.10.1 Definition of the Resource 3-57
3.10.2 Existing Conditions – Kinston Regional Jetport 3-58
3.11 INFRASTRUCTURE, TRANSPORTATION, AND UTILITIES 3-59
3.11.1 Definition of the Resource 3-59
3.11.2 Existing Conditions – Kinston Regional Jetport 3-59
3.11.2.1 Solid Waste Management 3-61
3.11.2.2 Sanitary and Storm Sewer Systems 3-61
3.11.2.3 Transportation 3-61
3.11.2.4 Utilities 3-62

CHAPTER 4 ENVIRONMENTAL CONSEQUENCES 4-1

4.1 AIRSPACE MANAGEMENT AND USE 4-1
4.1.1 Evaluation Criteria 4-1
4.1.2 Proposed Action 4-2
4.1.2.1 Alternative 1 – Kinston Regional Jetport 4-2
4.1.3 No Action Alternative 4-2
4.2 NOISE 4-2
4.2.1 Evaluation Criteria 4-2
4.2.2 Proposed Action 4-3
4.2.2.1 Alternative 1 – Kinston Regional Jetport 4-4
4.2.2.2 Alternative 1 – Airspace 4-17
4.2.3 No Action Alternative 4-18
4.3 SAFETY 4-19
4.3.1 Evaluation Criteria 4-19
4.3.2 Proposed Action 4-20
4.3.2.1 Alternative 1 – Kinston Regional Jetport and Airspace 4-21
4.3.3 No Action Alternative 4-23
4.4 AIR QUALITY 4-23
4.4.1 Evaluation Criteria 4-23
4.4.2 Proposed Action 4-25
4.4.2.1 Alternative 1 – Kinston Regional Jetport 4-25
4.4.2.2 Alternative 1 – Airspace 4-26
4.4.3 No Action Alternative 4-27
4.4.4 Climate Change Considerations 4-27
4.5 BIOLOGICAL RESOURCES 4-29
4.5.1 Evaluation Criteria 4-29
4.5.2 Proposed Action 4-29
4.5.2.1 Alternative 1 – Kinston Regional Jetport 4-30
4.5.2.2 Alternative 1 – Airspace 4-32
4.5.3 No Action Alternative 4-35

TABLE OF CONTENTS

Page

4.6 LAND USE 4-35
4.6.1 Evaluation Criteria 4-35
4.6.2 Proposed Action 4-36
4.6.2.1 Alternative 1 – Kinston Regional Jetport 4-36
4.6.2.2 Alternative 1 – Airspace 4-37
4.6.3 No Action Alternative 4-37
4.7 SOCIOECONOMICS – INCOME AND EMPLOYMENT 4-37
4.7.1 Evaluation Criteria 4-37
4.7.2 Proposed Action 4-38
4.7.2.1 Alternative 1 – Kinston Regional Jetport 4-38
4.7.3 No Action Alternative 4-38
4.8 ENVIRONMENTAL JUSTICE 4-39
4.8.1 Evaluation Criteria 4-39
4.8.2 Proposed Action 4-39
4.8.2.1 Alternative 1 – Kinston Regional Jetport 4-39
4.8.3 No Action Alternative 4-40
4.9 CULTURAL RESOURCES 4-40
4.9.1 Evaluation Criteria 4-40
4.9.2 Proposed Action 4-40
4.9.2.1 Alternative 1 – Kinston Regional Jetport 4-40
4.9.2.2 Alternative 1 – Airspace 4-41
4.9.3 No Action Alternative 4-41
4.10 HAZARDOUS MATERIALS AND WASTES, AND TOXIC SUBSTANCES 4-41
4.10.1 Evaluation Criteria 4-41
4.10.2 Proposed Action 4-41
4.10.2.1 Alternative 1 – Kinston Regional Jetport 4-41
4.10.3 No Action Alternative 4-42
4.11 INFRASTRUCTURE, TRANSPORTATION, AND UTILITIES 4-42
4.11.1 Evaluation Criteria 4-42
4.11.2 Proposed Action 4-42
4.11.2.1 Alternative 1 – Kinston Regional Jetport 4-43
4.11.3 No Action Alternative 4-43

CHAPTER 5 CUMULATIVE IMPACTS AND OTHER ENVIRONMENTAL CONSIDERATIONS 5-1

5.1 CUMULATIVE EFFECTS 5-1
5.2 PAST, PRESENT, AND REASONABLY FORESEEABLE ACTIONS 5-1
5.3 CUMULATIVE EFFECTS ANALYSIS 5-5
5.3.1 Airspace Management and Use 5-5
5.3.2 Noise 5-5
5.3.3 Safety 5-5
5.3.4 Air Quality 5-5
5.3.5 Biological Resources 5-6
5.3.6 Land Use 5-6
5.3.7 Socioeconomics – Income and Employment 5-6
5.3.8 Environmental Justice and Protection of Children 5-6
5.3.9 Cultural Resources 5-6
5.3.10 Hazardous Materials and Wastes and Toxic Substances 5-6
5.3.11 Infrastructure, Transportation, and Utilities 5-7
5.4 RELATIONSHIP BETWEEN SHORT-TERM USES AND LONG-TERM PRODUCTIVITY 5-7
5.5 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES 5-7

TABLE OF CONTENTS

Page

CHAPTER 6 LIST OF PREPARERS AND CONTRIBUTORS 6-1

CHAPTER 7 REFERENCES 7-1

APPENDICES

APPENDIX A INTERAGENCY AND INTERGOVERNMENTAL COORDINATION AND CONSULTATIONS
APPENDIX B NOISE
APPENDIX C AIR QUALITY
APPENDIX D LISTED SPECIES POTENTIALLY OCCURRING IN THE ACTION AREA

This page intentionally left blank

LIST OF FIGURES

Page

Figure 1-1 Current and Proposed Adversary Air Enterprise. 1-2
Figure 1-2 Regional Location of Airport Proposed for Use. 1-4
Figure 1-3 Special Use Airspace Proposed for Contract Adversary Air Sorties. 1-5
Figure 2-1 Proposed Location for Contract Adversary Air Operations at Kinston Regional Jetport. 2-10
Figure 3-1 Typical A-weighted Sound Levels of Common Sounds. 3-6
Figure 3-2 Example of Maximum Sound Level and Sound Exposure Level from an Individual Event. 3-8
Figure 3-3 Example of Day-Night Average Sound Level Computed from Hourly Average Sound Levels. 3-9
Figure 3-4 Existing Day-Night Average Sound Level Contours at Kinston Regional Jetport. 3-12
Figure 3-5 Representative Points of Interest at Kinston Regional Jetport. 3-14
Figure 3-6 Runway Protection Zones around Kinston Regional Jetport. 3-20
Figure 3-7 Level III Ecoregions within the Regions of Influence. 3-30
Figure 3-8 Designated Critical Habitat within Special Use Airspace Proposed for Use 3-37
Figure 3-9 Sensitive Lands Beneath the Proposed Airspace 3-45
Figure 3-10 Infrastructure at Kinston Regional Jetport. 3-60
Figure 4-1 High Noise Scenario Day-Night Average Sound Level Contours at Kinston Regional Jetport. 4-6
Figure 4-2 Comparison of High Noise Scenario and Existing Day-Night Average Sound Level Contours at Kinston Regional Jetport. 4-7
Figure 4-3 Medium Noise Scenario Day-Night Average Sound Level Contours at Kinston Regional Jetport. 4-10
Figure 4-4 Comparison of Medium Noise Scenario and Existing Day-Night Average Sound Level Contours at Kinston Regional Jetport. 4-11
Figure 4-5 Low Noise Scenario Day-Night Average Sound Level Contours at Kinston Regional Jetport. 4-14
Figure 4-6 Comparison of Low Noise Scenario and Existing Day-Night Average Sound Level Contours at Kinston Regional Jetport. 4-15

This page intentionally left blank

LIST OF TABLES

Page

Table 2-1 Contract Adversary Air Potential Aircraft Specifications 2-1
Table 2-2 Probable Airport Facilities Needs 2-2
Table 2-3 Current and Projected Annual Training Activities by Seymour Johnson Air Force Base 2-4
Table 2-4 Existing and Proposed Defensive Countermeasure Use in the Warning Areas 2-5
Table 2-5 Comparison of Alternatives 2-7
Table 2-6 Comparison of Potential Environmental Consequences of the Proposed Action 2-11
Table 3-1 Environmental Resources Analyzed in the Environmental Assessment 3-1
Table 3-2 Annual Operations at Kinston Regional Jetport 3-5
Table 3-3 Existing Annual Aircraft Operations Summary at Kinston Regional Jetport 3-11
Table 3-4 Existing Day-Night Average Sound Level Area Affected at Kinston Regional Jetport 3-13
Table 3-5 Existing Day-Night Average Sound Level at Points of Interest at Kinston Regional Jetport 3-13
Table 3-6 Existing Annual Airspace Operations Summary by Seymour Johnson Air Force Base in the Restricted Areas and Military Operations Areas 3-15
Table 3-7 Existing Noise Levels in Airspace 3-16
Table 3-8 Warning Areas W-122, W-177, W-161, and W-72: Sonic Boom Levels Undertrack for Based Aircraft in Level Flight at Mach 1.2 and 1.3 3-16
Table 3-9 Airspace Regions of Influence Subject to Air Quality Impact Analysis 3-21
Table 3-10 National Ambient Air Quality Standards 3-23
Table 3-11 Lenoir County Baseline Emissions (tpy) 3-25
Table 3-12 Special Use Airspace Baseline Emission Summary (tpy)[1,2] 3-26
Table 3-13 Level III Ecoregions within the Regions of Influence 3-31
Table 3-14 Federal and State Listed Species with the Potential to be Located on Kinston Regional Jetport 3-32
Table 3-15 Federal and State Listed Species with the Potential to be Affected by Contract Adversary Air Operations in Special Use Airspace 3-34
Table 3-16 Marine Mammals with the Potential to Occur in Warning Areas 3-39
Table 3-17 Off-Airport Land use within Kinston Regional Jetport Existing Noise Contours 3-42
Table 3-18 Population Centers Beneath the Airspace Proposed for Contract Adversary Air 3-43
Table 3-19 Unemployment Rate (2018), Income (2018), and Poverty Rate (2018) for the Airspace Region of Influence 3-48
Table 3-20 Total Population and Populations of Concern for the Airspace Region of Influence (2018) 3-50
Table 3-21 National Register of Historic Places Listed Resources Under the Airspace 3-54
Table 4-1 Summary of Noise Impacts 4-3
Table 4-2 Contract Adversary Air Noise Scenarios 4-4
Table 4-3 Proposed High Noise Scenario Annual Aircraft Operations Summary at Kinston Regional Jetport 4-5
Table 4-4 Proposed High Noise Scenario Day-Night Average Sound Level Area Affected on and Surrounding Kinston Regional Jetport 4-8
Table 4-5 Proposed High Noise Scenario Day-Night Average Sound Level at Representative Points of Interest on and near Kinston Regional Jetport 4-8
Table 4-6 Proposed Medium Noise Scenario Annual Aircraft Operations Summary at Kinston Regional Jetport 4-9
Table 4-7 Proposed Medium Noise Scenario Day-Night Average Sound Level Area Affected on and Surrounding Kinston Regional Jetport 4-12
Table 4-8 Proposed Medium Noise Scenario Day-Night Average Sound Level at Representative Points of Interest on and near Kinston Regional Jetport 4-12
Table 4-9 Proposed Low Noise Scenario Annual Aircraft Operations Summary at Kinston Regional Jetport 4-13

LIST OF TABLES

Page

Table 4-10 Proposed Low Noise Scenario Day-Night Average Sound Level Area Affected on and Surrounding Kinston Regional Jetport 4-16
Table 4-11 Proposed Low Noise Scenario Day-Night Average Sound Level at Representative Points of Interest on and near Kinston Regional Jetport 4-16
Table 4-12 Proposed Annual Airspace Operations Summary by Seymour Johnson Air Force Base and Adversary Air Aircraft (All Scenarios) 4-17
Table 4-13 Existing and Proposed Noise Levels in Airspaces 4-18
Table 4-14 Warning Areas W-122, W-177, W-161, and W-72: Sonic Boom Levels Undertrack for Adversary Air Aircraft in Level Flight at Mach 1.2 and 1.3 4-19
Table 4-15 Summary of Potential Safety Impacts 4-20
Table 4-16 Basis of Air Emission Calculations 4-24
Table 4-17 Contract Adversary Air Emissions – Airport Operations 4-26
Table 4-18 Adversary Air Airport-Generated Emission – Percent of County Emission (in tons per year)[1] 4-26
Table 4-19 Contractor Adversary Air Emissions – Special Use Airspace 4-28
Table 4-20 Indicators for Carbon Dioxide Emission Impacts 4-29
Table 4-21 Increase in Day-Night Average Sound Level Area Potentially Affected on and Surrounding Kinston Regional Jetport 4-36
Table 5-1 Past, Present, and Reasonably Foreseeable Projects at Kinston Regional Jetport and in the Special Use Airspace Proposed for Use 5-2

LIST OF ACRONYMS AND ABBREVIATIONS

µg/m^3	microgram(s) per cubic meter
4 FW	4th Fighter Wing
ac	acre(s)
ACAM	Air Conformity Applicability Model
ACC	Air Combat Command
ACM	asbestos-containing material
ADAIR	adversary air
AEDT	Aviation Environmental Design Tool
AFB	Air Force Base
AFCEC	Air Force Civil Engineer Center
AFI	Air Force Instruction
AGE	aerospace ground equipment
AGL	above ground level
AGRS	aggressor squadron
Air Force	United States Air Force
APE	Area of Potential Effects
AQCR	Air Quality Control Region
ARW	Air Refueling Wing
AST	aboveground storage tank
ATC	Air Traffic Control
ATCAA	Air Traffic Control Assigned Airspace
BASH	bird/wildlife-aircraft strike hazard
BMP	Best Management Practice
CAA	Clean Air Act
CAD/PAD	cartridge-actuated device(s)/propellant-actuated device(s)
CAF	Combat Air Forces
CDDAR	Crash Damaged or Disabled Aircraft Recovery
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CSEL	C-Weighted Sound Exposure Level
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
CZN	National Environmental Policy Act Division
dB	decibel(s)
dBA	A-weighted decibel(s)
DCMA INST	Defense Contract Management Agency Instruction
DNL	Day-Night Average Sound Level
DOD	Department of Defense
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FAY	Fayetteville Regional Airport
FBO	Fixed-Base Operator
FL	Flight Level
FONSI	Finding of No Significant Impact
FS	Fighter Squadron
ft	foot(feet)
ft^2	square foot(feet)

LIST OF ACRONYMS AND ABBREVIATIONS

FTU	formal training unit
GHG	greenhouse gas
GWP	global warming potential
HAZMAT	hazardous material
HPP	Historic Preservation Plan
IFR	Instrument Flight Rules
ISO	Kinston Regional Jetport at Stallings Field
kV	kilovolt(s)
LBP	lead-based paint
L_{dnmr}	Onset-Rate Adjusted Monthly Day-Night Average Sound Level
L_{eq}	Equivalent Sound Level
L_{max}	Maximum Sound Level
MBTA	Migratory Bird Treaty Act
mi	mile(s)
MILCON	Military Construction
mg/m^3	milligram(s) per cubic meter
MMPA	Marine Mammal Protection Act
MOA	Military Operations Area
MOU	Memorandum of Understanding
MSL	mean sea level
NAAQS	National Ambient Air Quality Standards
NASA	National Aeronautics and Space Administration
NC 58	North Carolina State Road 58
NCDEQ	North Carolina Department of Environmental Quality
NCDOT	North Carolina Department of Transportation
NCGTP	North Carolina Global TransPark
NCSHPO	North Carolina State Historic Preservation Office
NEPA	National Environmental Policy Act
NH_3	ammonia
NHPA	National Historic Preservation Act
NM	nautical mile(s)
NMFS	National Marine Fisheries Service
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
NRHP	National Register of Historic Places
NRWSA	Neuse Regional Water and Sewer Authority
NTSB	National Transportation Safety Board
O_3	ozone
OSHA	Occupational Safety and Health Administration
Pb	lead
PCB	polychlorinated biphenyl
pCi/L	picocuries per liter
PHF	Newport News-Williamsburg International Airport – Patrick Henry Field
$PM_{2.5}$	particulates equal to or less than 2.5 microns in diameter
PM_{10}	particulates equal to or less than 10 microns in diameter
POI	point of interest
ppm	part(s) per million
PSD	Prevention of Significant Deterioration
psf	pound(s) per square inch
PWS	Performance Work Statement
Q-D	Quantity-Distance
RCW	red-cockaded woodpecker

LIST OF ACRONYMS AND ABBREVIATIONS

ROI	Region of Influence
RPZ	Runway Protection Zone
SEL	Sound Exposure Level
SIP	State Implementation Plan
SO_2	sulfur dioxide
tpy	ton(s) per year
TSCA	Toxic Substances Control Act
U.S.C.	United States Code
UAB	Underwater Archaeology Branch
US	United States
US 70	United States Highway 70
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
UST	underground storage tank
VDEQ	Virginia Department of Environmental Quality
VFR	Visual Flight Rules
VOC	volatile organic compound
WHMP	Wildlife Hazard Management Plan
yd^2	square yard(s)

This page intentionally left blank

CHAPTER 1 PURPOSE AND NEED FOR ACTION

1.1 INTRODUCTION

The United States Air Force (Air Force) is tasked with the defense of the United States (US) and fulfillment of its Title 10 United States Code (U.S.C.) mission. The Air Force's mission is to fly, fight, and win - in air, space, and cyberspace. In order to accomplish this mission, it is critical that fighter aircrews, and the Airmen supporting them, adequately train to attain proficiency on tasks they must execute during times of war and further to sustain this proficiency as they serve in the Air Force. Increasingly, fighter aircrews of the Combat Air Forces (CAF) have been operating at degraded levels of proficiency and training readiness due to diminishing fiscal resources. For the purpose of this effort, the CAF includes all active duty, Air National Guard, and Air Force Reserve units in both formal training units (FTU) and operational units.

Ideally, CAF fighter aircrews would be able to maintain their proficiency by flying 200 or more hours per year, practicing training syllabus tactics, techniques, and procedures. Unfortunately, for much of the last decade, fighter aircrews of advanced weapons platforms have been falling 25 to 40 percent short of the flying hours recommended to build and sustain their proficiency on required training tasks (Venable, 2016). At the same time, increasingly complex aircraft and technologies require more time to master the full range of skills required to become proficient combat-ready fighter aircrews. Along with insufficient budgets to support the flying hours/training requirements needed by CAF fighter aircrews, they have also had to support adversary air (ADAIR) flying missions that have minimal training value to the CAF fighter aircrews themselves. ADAIR missions simulate an opposing force that provides a necessary and realistic combat environment during CAF training missions. Flying these ADAIR sorties requires the use of potential adversaries' tactics and procedures that may differ significantly from CAF tactics and procedures and therefore provides minimal CAF training while taking up valuable flying hours that could otherwise be spent on core training tasks. In many cases, minimal ADAIR missions, or none at all, have been available to support fighter aircrew training and have resulted in degraded readiness for CAF fighter aircrews who are expected to operate some of the most sophisticated weapons platforms in the world.

A SORTIE IS DEFINED AS A SINGLE MILITARY AIRCRAFT FLIGHT FROM INITIAL TAKEOFF THROUGH FINAL LANDING.

During his confirmation hearing, Chief of Staff of the Air Force, General David Goldfein, identified a growing crisis in the readiness of CAF fighter aircrews (Venable, 2016):

> *Less than half of Air Force combat units are ready for "full-spectrum" (high threat, high intensity) combat. This lack of readiness could jeopardize the lives of aircrews and other service members who depend upon them in combat and put mission-essential tasks at great risk.*

1.1.1 Background

Air Force readiness is currently affected by several issues including training, weapon system sustainment, and facilities. While all are critical, training in particular has become an increasing concern as worldwide commitments, high operations tempo, and fiscal and manpower limitations detract from available training resources. As an example, the Budget Control Act of 2011, as implemented in 2013, reduced flying hours by 18 percent and temporarily stood down 17 of 40 combat-coded squadrons (The Heritage Foundation, 2015). The Air Force prioritized readiness in 2014, but shortfalls in readiness were not eliminated and have persisted through the present day, as indicated by the Chief of Staff of the Air Force's acknowledgement of the lack of readiness in more than half of the service's combat units. In the training arena, readiness issues are manifested in multiple ways, such as 1) an inability to internally support ADAIR without a corresponding sacrifice in scarce flying hours and normal training objectives; 2) a lack of advanced threat aircraft to provide representative ADAIR for realistic training; 3) a fighter aircrew manning crisis, necessitating increased fighter aircrew production beyond sustainable levels; and 4) granting excessive syllabus waivers to graduates of the Air Force Weapons School due to inadequate ADAIR support during final training phases.

Lack of available ADAIR is degrading levels of fighter aircrew readiness and contributing to the overall decline in availability of proficient CAF fighter aircrews. The arrangement in which CAF ADAIR sorties are currently organized is depicted on **Figure 1-1**. At present, the current approach meets less than 50 percent of the total ADAIR requirement across the Air Force.

Self-generated ADAIR can either be "in-house" supporting daily flying schedules or via a dedicated tasking to support an external unit, both referred to as "Red Air." In both the "in-house" and "dedicated" options, performing self-generated ADAIR is at the expense of the tasked units' normal Air Force training objectives. These two options still result in an ADAIR capacity of less than 50 percent of the Air Force-wide requirement and reduce the availability and proficiency of combat qualified fighter aircrews at a time when the Air Force is experiencing a shortfall of more than 750 CAF pilots (Venable, 2016). Furthermore, current dedicated ADAIR units in the Air Force consist of two F-16 aggressor squadrons (AGRSs) and two T-38 fighter training squadrons. The F-16 aircraft used for aggressor missions is an advanced weapons platform but there are not enough to meet the ADAIR training requirements to maintain proficiency of the CAF's fighter aircrews. The T-38 is used for ADAIR but is a basic platform with no advanced electronics (radar and avionics) or weapons capabilities and does not adequately replicate realistic threat capabilities. The Air Force has also proposed the addition of an F-35 AGRS at Nellis AFB to provide advanced 5th Generation aircraft ADAIR capability. With the F-16 AGRS, T-38 ADAIR, and proposed F-35 AGRS capabilities, the number of available aircraft and pilots are insufficient to meet the ADAIR training requirements.

As depicted on **Figure 1-1**, contract ADAIR would provide a fifth avenue to fill ADAIR sorties and improve the quality of training and readiness of CAF fighter aircrews and allow the Air Force to recapitalize other valuable assets and training time.

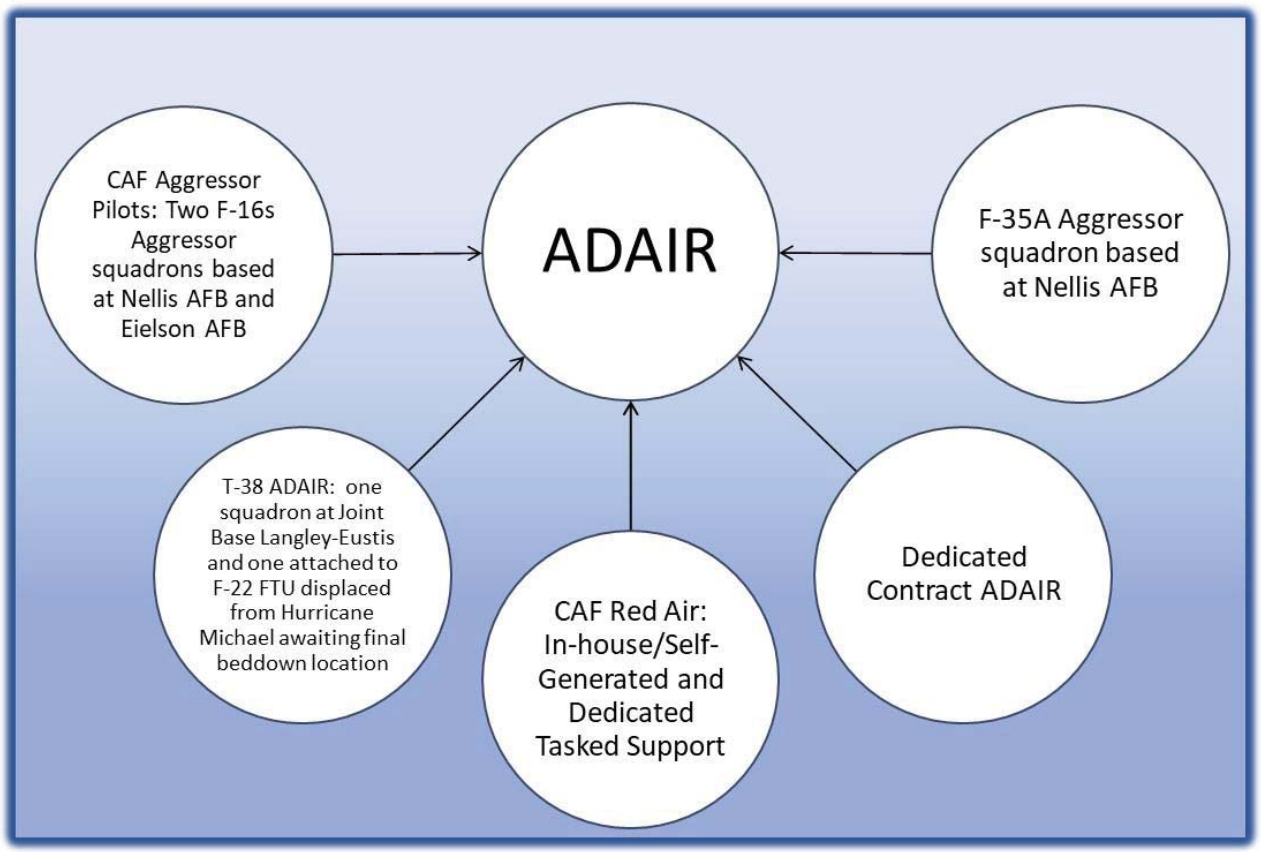


Figure 1-1. Current and Proposed Adversary Air Enterprise.

The contract ADAIR requirement is roughly 30,000 annual sorties. The Air Force would implement contract ADAIR in support of installations that host specific critical air-to-air training missions. Installations requiring contract ADAIR support include those bases hosting Air Force 5th generation fighter units (e.g., F-22 or F-35 aircraft), fighter FTUs, or those that support advanced fighter training. Air Force requirements for contract ADAIR exist currently at multiple installations within the continental United States and Joint Base Pearl Harbor-Hickam, Hawaii.

As discussed in **Section 1.4**, the scope of this analysis will evaluate the proposal to implement contract ADAIR for Seymour Johnson Air Force Base (AFB) and incorporates one civilian airport for possible use by the contract ADAIR service provider.

1.1.2 Location

Seymour Johnson AFB is in eastern North Carolina, approximately halfway between the northern and southern state borders (**Figure 1-2**). It is situated within the southern portion of Goldsboro city limits in Wayne County, east of US Highway 70 (US 70), and south and/or west of US Highway 13. Seymour Johnson AFB does not have the capacity to host contracted ADAIR operations on-base; therefore, one civilian airport is being analyzed as suitable for possible use by a contract ADAIR service provider to support Seymour Johnson AFB operations. The Kinston Regional Jetport at Stallings Field (ISO) is the airport proposed for use and is further described in **Section 2.5.1**. The airport is in eastern North Carolina and is on the northern outskirts of the city of Kinston, north of the C.F. Harvey Parkway and west of North Carolina Highway 58.

Seymour Johnson AFB is the home of the 4th Fighter Wing (4 FW) consisting of the 333d, 334th, 335th, and 336th Fighter Squadrons (FS); the Air Force Reserve's 916th Air Refueling Wing (ARW); and the Air Force Reserve's 307 FS. The 4 FW's mission is "Train, Produce, and Project Airpower for America!" The 333 FS and 334 FS are FTUs producing 4th generation F-15E Strike Eagle fighter aircrew and combat systems officers for the CAF. The 335 FS and 336 FS are operational units tasked to respond to wartime commitments and contingency taskings. Seymour Johnson AFB is the only F-15E FTU for the Air Force and responsible for training all CAF F-15E aircrews. The 4 FW currently possesses 94 F-15E Strike Eagles in its inventory. The 916 ARW's air refueling mission is currently transitioning from the KC-135R aircraft to a fleet of 13 KC-46 aircraft. The 916 ARW has two operational squadrons, the 77th and 911th Air Refueling Squadron.

FIFTH (5TH) GENERATION IS A TERM APPLIED TO THE NEWEST WEAPONS SYSTEMS SUCH AS THE F-22 AND F-35 FIGHTERS THAT CONTAIN NEW AND ENHANCED LEVELS OF STEALTH PROFILES, SPEED, MANEUVERABILITY, AND ADVANCED AVIONICS AND ATTACK CAPABILITIES. FOURTH (4TH) GENERATION AIRCRAFT ARE THE PREVIOUS SUITE OF FIGHTERS SUCH AS F-15, F-16, AND F/A-18.

CAF training activities proposes to utilize special use airspace proximate to Seymour Johnson AFB. Special use airspace includes Military Operations Areas (MOAs), Air Traffic Control Assigned Airspaces (ATCAAs), and Warning Areas which provide airspace for military aircraft training and serve to warn nonparticipating pilots of potential danger. The primary operational airspace that would be used by contract ADAIR aircraft is the Warning Area W-122 located about 60 miles (mi) southeast of Seymour Johnson AFB over the Atlantic Ocean (**Figure 1-3**). The W-122 complex may be scheduled concurrent to several Warning Areas, ATCAAs, and Restricted Areas. Other airspace available for use by ADAIR missions include Seymour Johnson Echo (hereto after referred to as Echo), Gamecock A, Farmville, Phelps, Pamlico and Core MOAs; Burner and Hatteras ATCAAs; Restricted Areas R-5306A and R-5314; and Warning Areas W-161, W-177, and W-72.

Seymour Johnson AFB and the surrounding military airspace provide a critical venue to train F-15E aircrew.

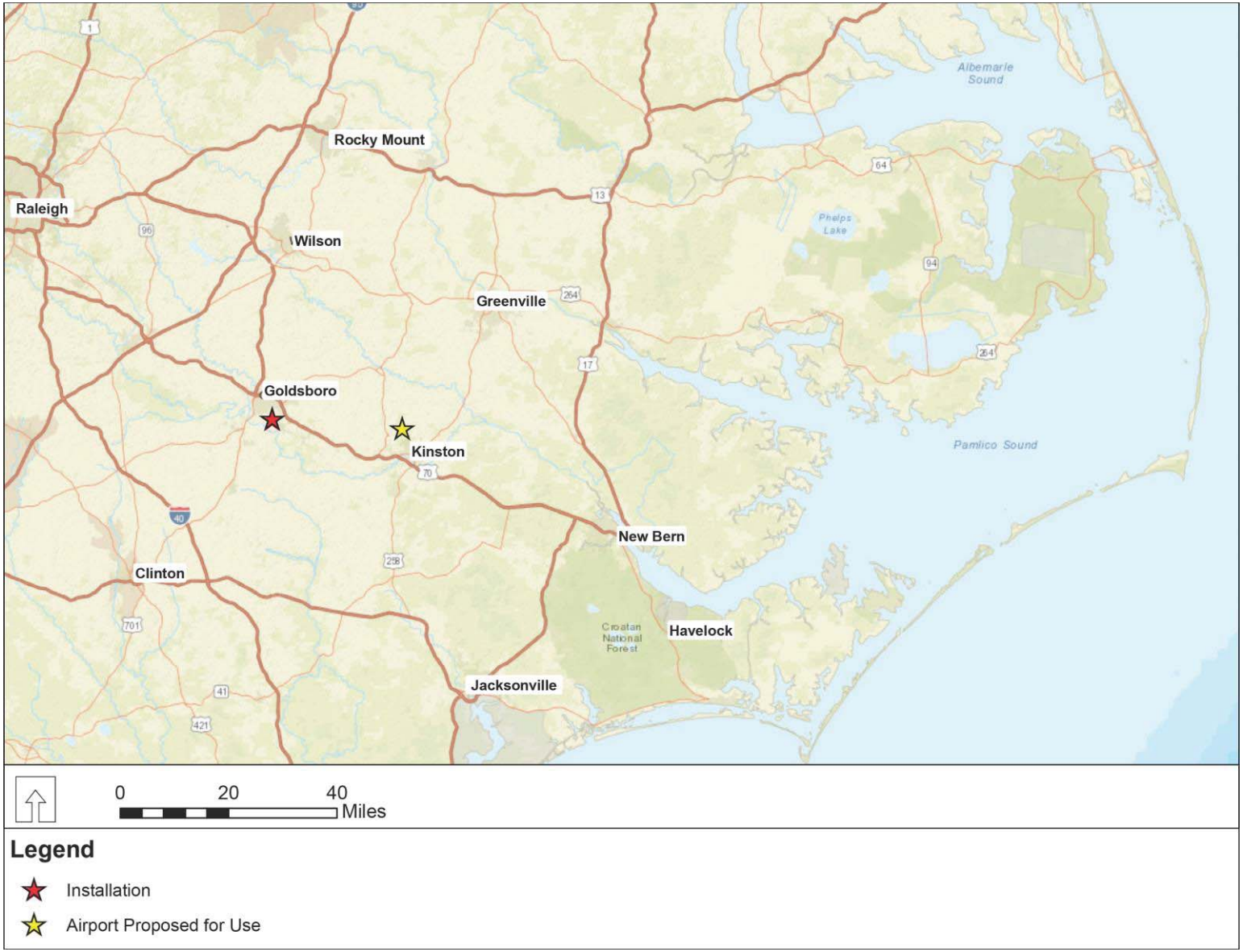


Figure 1-2. Regional Location of Airport Proposed for Use.

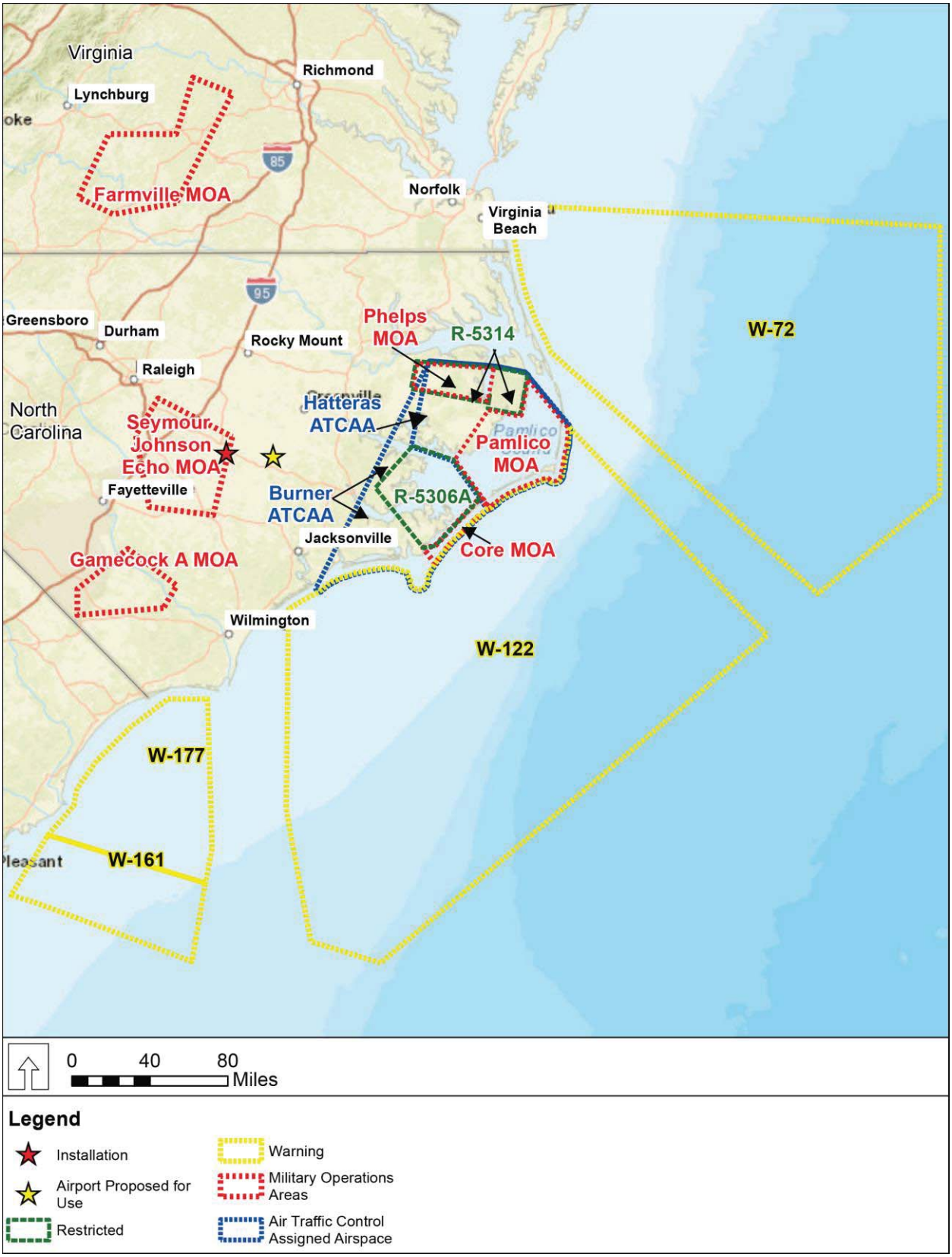


Figure 1-3. Special Use Airspace Proposed for Contract Adversary Air Sorties.

1.2 PURPOSE OF THE ACTION

The purpose of the Proposed Action is to provide dedicated contract ADAIR sorties to improve the quality of training and readiness of fighter aircrews of the 4 FW and other units supported by Seymour Johnson AFB. Contract ADAIR support would employ adversary tactics across the training spectrum from basic fighter maneuvers to higher-end, advanced, simulated, combat training missions. The objective of the Proposed Action at Seymour Johnson AFB is to increase the quality of training for 4th generation F-15E fighter aircrews by filling the "near peer" capacity and capability gap currently present in the 4th generation training enterprise. By providing a dedicated contract ADAIR capability, F-15E fighter aircrews would gain more realistic air-to-air training during their training syllabus tasks. Dedicated contract ADAIR would also allow the unit to free up resources used to self-generate ADAIR and more effectively use those available flying hours. Additionally, other Air Force (4th generation) units that may have been tasked to provide ADAIR training support for Seymour Johnson AFB may now recapitalize valuable flying hours to focus on increasing their own levels of proficiency and readiness.

A MILITARY OPERATIONS AREA (MOA) IS DESIGNATED AIRSPACE OUTSIDE OF CLASS A AIRSPACE TO SEPARATE OR SEGREGATE CERTAIN NONHAZARDOUS MILITARY ACTIVITIES FROM INSTRUMENT FLIGHT RULES (IFR) TRAFFIC. ACTIVITIES IN MOAS INCLUDE, BUT ARE NOT LIMITED TO, AIR COMBAT MANEUVERS, AIR INTERCEPTS, AND LOW ALTITUDE TACTICS. THE DEFINED VERTICAL AND LATERAL LIMITS VARY FOR EACH MOA. WHILE MOAS GENERALLY EXTEND FROM 1,200 FEET (FT) ABOVE GROUND LEVEL (AGL) TO 18,000 FT MEAN SEA LEVEL (MSL), THE FLOOR MAY EXTEND BELOW 1,200 FT AGL IF THERE IS A MISSION REQUIREMENT AND THERE IS MINIMAL ADVERSE AERONAUTICAL EFFECT.

CLASS A AIRSPACE IS CONTROLLED AIRSPACE OF DEFINED DIMENSIONS WITHIN WHICH AIR TRAFFIC CONTROL SERVICE IS PROVIDED AND ALL OPERATIONS MUST OCCUR UNDER IFR. CLASS A AIRSPACE IS GENERALLY FROM 18,000 FT MSL UP TO AND INCLUDING 60,000 FT MSL AND INCLUDES AIRSPACE OVERLYING WATERS WITHIN 12 NAUTICAL MILES (NM) OF THE COAST OF THE 48 CONTIGUOUS US AND ALASKA.

AIR TRAFFIC CONTROL ASSIGNED AIRSPACE (ATCAA) IS ASSIGNED TO AIR TRAFFIC CONTROL TO SEGREGATE AIR TRAFFIC BETWEEN SPECIFIED ACTIVITIES BEING CONDUCTED WITHIN THE ASSIGNED AIRSPACE AND OTHER IFR TRAFFIC. ATCAA IS THE EQUIVALENT OF A MOA AT 18,000 FT MSL AND ABOVE. THIS AIRSPACE IS NOT DEPICTED ON ANY CHART BUT IS OFTEN AN EXTENSION OF A MOA TO HIGHER ALTITUDES AND USUALLY REFERRED TO BY THE SAME NAME. THIS AIRSPACE REMAINS IN CONTROL OF THE FEDERAL AVIATION ADMINISTRATION (FAA) WHEN NOT IN USE TO SUPPORT GENERAL AVIATION ACTIVITIES.

A WARNING AREA IS AIRSPACE OF DEFINED DIMENSIONS THAT EXTENDS FROM 3 NM OUTWARD FROM THE COAST OF THE UNITED STATES AND MAY BE OVER US WATERS, INTERNATIONAL WATERS, OR BOTH. THE PURPOSE OF WARNING AREAS IS TO WARN NONPARTICIPATING PILOTS OF POTENTIALLY HAZARDOUS ACTIVITY. WARNING AREAS MAY BE USED FOR OTHER PURPOSES IF RELEASED TO THE FAA DURING PERIODS WHEN NOT REQUIRED FOR THEIR INTENDED PURPOSE AND ARE WITHIN AREAS IN WHICH THE FAA HAS AIR TRAFFIC CONTROL AUTHORITY.

1.3 NEED FOR THE ACTION

The need for the action is to provide better and more realistic training for the F-15E flight training program at Seymour Johnson AFB. Dedicated contract ADAIR is critical to improving fighter aircrew readiness as it provides realistic training opportunities to employ CAF tactics and procedures that optimize the training value of every mission. Contract ADAIR can be used in basic building block syllabus sorties or the very advanced and fluid environment of multiaircraft air combat required by the training syllabus.

1.4 DECISION TO BE MADE

This EA evaluates the potential environmental consequences of implementing the Proposed Action or alternatives to provide dedicated contract ADAIR sorties for Seymour Johnson AFB to improve the readiness and proficiency of fighter aircrews of the 4 FW, other supported units, and the CAF at large. Based on the analysis in this EA, the CAF will make one of three decisions regarding the Proposed Action: 1) determine the potential environmental impacts associated with the Proposed Action and alternatives and sign a Finding of No Significant Impact (FONSI); 2) initiate preparation of an Environmental Impact Statement (EIS) if it is determined that significant impacts would occur through implementation of the Proposed Action or alternatives; or 3) select the No Action Alternative, whereby the Proposed Action would not be implemented. As required by National Environmental Policy Act (NEPA) and its implementing regulations, preparation of an environmental document must precede final decisions regarding the proposed project and be available to inform decision-makers of the potential environmental impacts.

1.5 INTERAGENCY AND INTERGOVERNMENTAL COORDINATION AND CONSULTATIONS

1.5.1 Interagency/Intergovernmental Coordination and Consultation

The environmental analysis process, in compliance with NEPA guidance, includes public and agency review of information pertinent to the Proposed Action and alternatives. Scoping is an early and open process for developing the breadth of issues to be addressed in an EA and for identifying significant concerns related to an action. Per the requirements of Executive Order (EO) 12372, *Intergovernmental Review of Federal Programs*, as amended by EO 12416, federal, state, and local agencies with jurisdiction that could potentially be affected by the Proposed Action or alternatives were notified during the development of this EA. Those Interagency and Intergovernmental Coordination for Environmental Planning letters and responses are included in **Appendix A**.

1.5.2 Agency Consultations

Implementation of the Proposed Action involves coordination with several organizations and agencies. Since the Proposed Action would occur at a civilian airport, the Air Force coordinated early with the Federal Aviation Administration (FAA). The FAA has agreed to participate in the development of this EA, provide contact information, and share baseline information to support the environmental analysis but will not act as a Cooperating Agency. Compliance with Section 7 of the Endangered Species Act (ESA), and implementing regulations (50 Code of Federal Regulations [CFR] Part 402), requires communication with the US Fish and Wildlife Service (USFWS) and/or the National Marine Fisheries Service (NMFS) in cases where a federal action could affect listed threatened or endangered species, species proposed for listing, or candidates for listing. The primary focus of this consultation is to request a determination of whether any of these species occur in the proposal area. If any of these species is present, a determination would be made of any potential adverse impacts on the species. Should no species protected by the ESA be affected by the Proposed Action or alternatives, no additional consultation is required. Letters were sent to the appropriate USFWS and NMFS offices as well as relevant state agencies informing them of the proposal and requesting data regarding applicable protected species (**Appendix A**). The Air Force received concurrence from the USFWS North Carolina Field Office and the self-certification letter from the USFWS Virginia Field Office with the effect determinations for the federally listed species under their respective jurisdictions (**Appendix A**). Consultation discussions with the NMFS Southeast Regional Office determined that this action is similar enough in scope, location, and effects determination as the consultation completed for the Joint Base Langley-Eustis ADAIR Environmental Impact Analysis Process (EIAP), for which concurrence was received from the NMFS Greater Atlantic Regional Fisheries Office and does not require additional consultation or response from NMFS. In addition, the Marine Mammal Protection Act (MMPA; 16 U.S.C. § 1371 et seq.) makes it illegal for a person to take a marine mammal, which includes significantly disturbing the habitat, unless it is done in accordance with regulations or a permit. The Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801) requires federal agencies to consult with the NMFS when activities may have adverse impacts on designated essential fish habitat.

Coordination with the North Carolina Department of Environmental Quality (NCDEQ) regarding the air quality analysis was conducted through the North Carolina State Environmental Review Clearinghouse. Compliance with Section 106 of the National Historic Preservation Act (NHPA) and implementing regulations (36 CFR Part 800) was accomplished by consultation with the State Historic Preservation Officer through the North Carolina State Historic Preservation Office. A coastal zone consistency determination under the Coastal Zone Management Program was submitted to the NCDEQ Division of Coastal Management. These correspondences are included in **Appendix A**.

Coordination with the Virginia Department of Environmental Quality (VDEQ), Office of Environmental Impact Review occurred to solicit review and comment. The staff of the Office of Environmental Impact Review distributes documents to appropriate state agencies, planning districts, and localities for review and comment and prepares a combined state response. Compliance with Section 106 of the NHPA and implementing regulations (36 CFR Part 800) was accomplished by consultation with the State Historic Preservation Officer through the Virginia Department of Historic Resources. A coastal zone consistency

determination under the Coastal Zone Management Program was also submitted to VDEQ Office of Environmental Impact Review. These correspondences are included in **Appendix A**.

All agency correspondence is included in **Appendix A**.

1.5.3 Government-to-Government Consultation

The NHPA and its regulations in 36 CFR Part 800 direct federal agencies to consult with federally recognized Indian tribes when a proposed or alternative action has the potential to affect tribal lands or properties of religious and cultural significance to a tribe. Consistent with the NHPA, Department of Defense (DOD) Instruction 4710.02, *DoD Interactions with Federally-Recognized Tribes*, and Air Force Instruction (AFI) 90-2002, *Air Force Interactions with Federally-Recognized Tribes*, federally recognized tribes that are historically affiliated with lands in the vicinity of the Proposed Action and alternatives have been invited to consult on all proposed undertakings that have a potential to affect properties of cultural, historical, or religious significance to the tribes. The tribal consultation process is distinct from NEPA consultation or the interagency coordination process, and it requires separate notification of all relevant tribes. The timelines for tribal consultation are also distinct from those of other consultations. The Seymour Johnson AFB point of contact for Native American tribes is the Wing Commander. Government-to-government consultation is included in **Appendix A**.

1.6 Applicable Laws and Environmental Regulations

Implementation of the Proposed Action would involve coordination with several organizations and agencies. Adherence to the requirements of specific laws, regulations, applicable Best Management Practices (BMPs), and necessary permits are described in detail in each resource section in **Chapter 3**.

1.6.1 National Environmental Policy Act

NEPA requires that federal agencies consider potential environmental consequences of proposed actions. The law's intent is to protect, restore, or enhance the environment through well-informed federal decisions. The Council on Environmental Quality (CEQ) was established under NEPA for the purpose of implementing and overseeing federal policies as they relate to this process. In 1978, the CEQ issued Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (40 CFR Parts 1500 through 1508 [CEQ 1978]). These regulations specify that an EA be prepared to

- briefly provide sufficient analysis and evidence for determining whether to prepare an EIS or a FONSI;
- aid in an agency's compliance with NEPA when no EIS is necessary; and
- facilitate preparation of an EIS when one is necessary.

Further, to comply with other relevant environmental requirements (e.g., the ESA and NHPA) in addition to NEPA and to assess potential environmental impacts, the EIAP and decision-making process for the Proposed Action and alternatives involves a thorough examination of environmental issues potentially affected by government actions subject to NEPA.

1.6.2 The Environmental Impact Analysis Process

The EIAP is the process by which the Air Force facilitates compliance with environmental regulations (32 CFR Part 989), including NEPA, which is the primary legislation affecting the agency's decision-making process.

1.7 Public and Agency Review of Environmental Assessment

A Notice of Availability of the Draft EA and proposed FONSI was published in the Goldsboro News-Argus and Kinston Free Press inviting the public to review and comment on the Draft EA during the 30-day review

period. The Draft EA and proposed FONSI were made available for review on the Seymour Johnson AFB Environmental website at https://www.seymourjohnson.af.mil/Home/SJAFB-Environmental-Management/. Those who were unable to access these documents online were asked to call Seymour Johnson AFB Public Affairs at (919) 722-0027 or email cathryn.pesenti@us.af.mil to arrange alternate access. The public and agency review period ended on 9 June 2020. One public comment was received, and no inquiries or requests for assistance were received by phone or email. Comments from agencies and local stakeholders are addressed in the Final EA and are provided in **Appendix A**.

1.8 SCOPE OF THE ENVIRONMENTAL ANALYSIS

This environmental assessment (EA) analyzes the potential environmental consequences associated with establishing dedicated contract ADAIR support for Seymour Johnson AFB. Contract ADAIR support would employ adversary tactics across the training spectrum from basic fighter maneuvers to higher-end, advanced, simulated, combat training missions in order to increase the quality of training for F-15E fighter aircrews.

This EA has been prepared in accordance with the NEPA (42 U.S.C. §§ 4321 through 4347), the CEQ Regulations (40 CFR Parts 1500 through 1508), and 32 CFR Part 989 et seq., *Environmental Impact Analysis Process (EIAP)*. NEPA ensures that environmental information, including the anticipated environmental consequences of a proposed action, is available to the public, federal and state agencies, and the decision-maker before decisions are made and before actions are taken.

Consistent with the CEQ regulations, the EA is organized into the following sections:

- Chapter 1, Purpose and Need for Action, includes an introduction, background description, location, purpose and need statement, scope of environmental analysis, decision to be made, interagency and intergovernmental coordination and consultations, applicable laws and environmental regulations, and a description of public and agency review of the EA.
- Chapter 2, Description of Proposed Action and Alternatives, includes a description of the Proposed Action, alternatives, selection standards, screening of alternatives, alternatives eliminated from further consideration, a description of the selected alternative, and summary of potential environmental consequences.
- Chapter 3, Affected Environment, includes a description of the natural and man-made environments within and surrounding the airport proposed for use and the airspace that may be affected by the Proposed Action and alternatives.
- Chapter 4, Environmental Consequences, includes definitions and discussions of direct and indirect impacts and BMPs (if applicable).
- Chapter 5, Cumulative Effects, considers the potential cumulative impacts on the environment that may result from the incremental impact of the Proposed Action when added to other past, present, and reasonably foreseeable future actions.
- Chapter 6, List of Preparers, provides a list of the preparers of this EA.
- Chapter 7, References, contains references for studies, data, and other resources used in the preparation of the EA.
- Appendices, as required, provide relevant correspondence, studies, modeling results, and public review information.

This page intentionally left blank

CHAPTER 2 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 PROPOSED ACTION

The Air Force is proposing to provide dedicated contract ADAIR sorties for CAF training for Seymour Johnson AFB, North Carolina, to address shortfalls in F-15E fighter aircrew production capability and provide the necessary capability and capacity to employ adversary tactics across the training spectrum from basic fighter maneuvers to higher-end, advanced combat training missions. Training scenarios would include the use of combat tactics and procedures that differ from CAF tactics to simulate an opposing force. The Proposed Action includes elements affecting the airport proposed for use and military training airspace. The elements affecting the airport proposed for use include contract ADAIR aircraft, facilities, maintenance, personnel, and sorties. The elements affecting the airspace include airspace use and defensive countermeasures.

Numbers of contract ADAIR aircraft, maintenance personnel, and pilots were estimated and informed through multiple meetings with active duty and civilian Air Force functional area experts and were based on sortie requirements developed by the end user at the base. Numbers of aircraft and personnel were then used to outline anticipated facility requirements.

2.1.1 Contract Adversary Air Aircraft

Contract ADAIR would have multiple aircraft available with acceptable capabilities to support training requirements. Potential contract ADAIR aircraft specifications are listed in **Table 2-1**; all aircraft listed are capable of providing contract ADAIR support to F-15E CAF aircrews stationed at Seymour Johnson AFB. One or a combination of these aircraft types may be operated by a contractor at the airport proposed for use in support of contract ADAIR training. The Proposed Action would include the establishment of an estimated 91 contracted maintainers and 18 contracted pilots who would operate an estimated 14 aircraft.

Table 2-1
Contract Adversary Air Potential Aircraft Specifications

Aircraft	Wingspan (feet)	Length (feet)	Height (feet)	Number of Engines
F-5	27	48	14	2
A-4K	28	41	15	1
T-59 Hawk	31	37	14	1

2.1.2 Facilities

The Proposed Action would require the use of facilities at the civilian airport proposed for use for office space and briefing areas for pilots and aircraft maintenance personnel, aircraft maintenance hangar space, tool and equipment storage, aerospace ground equipment (AGE) storage, vehicle parking, and aircraft parking ramp space. A summary of probable facilities needs to satisfy the Proposed Action is listed in **Table 2-2**; however, the selected contractor would coordinate specific requirements with the airport. If sufficient facilities are not available, the contractor may be required to fund the renovation or construction of additional facilities. Separate environmental analysis would be completed as required.

Following training sorties, contract ADAIR pilots would land and park their aircraft at the airport. Contract ADAIR pilots would then participate in debriefs with 4 FW aircrew and other units as required. Debriefs may occur at facilities on Seymour Johnson AFB or by video conferencing from the contract ADAIR operations facility.

Table 2-2
Probable Airport Facilities Needs

Ramp Required (yd^2)	Aircraft Maintenance Unit space (ft^2)	Stand-Alone Operations Space (ft^2)	Munitions Storage and Maintenance (ft^2)
9,800	3,400	2,100	TBD*

Notes:

* Unknown until the selected contractor determines the logistics plan that best suits the requirements (e.g., on-hand and assembled quantities and ordering schedule). If adequate facilities are not available at the selected airport, the contractor may be required to fund the renovation or construction of storage and maintenance facilities. Separate environmental analysis would be completed as required.

ft^2 = square feet; yd^2 = square yards

Contract ADAIR aircraft would require Jet A aircraft fuel that would be delivered in fuel trucks owned and operated by the fuel provider at the airport. Contract ADAIR personnel would be responsible for all aircraft fuel and defuel operations. It is anticipated that no additional personnel at the airport would be needed to support the additional deliveries.

Contract ADAIR aircraft would supply the necessary countermeasure chaff and flares to support the Proposed Action (also refer to **Section 2.1.7** for additional information on defensive countermeasures). The ADAIR contractor would store, account for, inspect, maintain, assemble and disassemble, and properly dispose of expended and unserviceable, suspended, or restricted chaff and flares. The contractor would also deliver chaff and flares to their ADAIR aircraft and would be responsible for loading and unloading chaff and flares for their aircraft. All support for Egress System munitions (i.e., cartridge-actuated devices/propellant-actuated devices [CAD/PAD]) and ejector cartridges necessary would be provided by the contractor. Transportation of munitions on public roads would comply with all federal, state, and local Department of Transportation and Occupational Safety and Health Administration (OSHA) regulations governing the transportation of explosives on public roads and highways. Compliance with federal and state statutory guidelines regarding the security, storage, and handling of explosive components would be followed.

Contractor maintenance personnel would also be responsible for the inspection and maintenance of all external stores (e.g., captive air training missiles, electronic countermeasure pods, external fuel tanks). All required AGE would be owned/leased and maintained by the contract ADAIR service provider. Gas and diesel fuel for AGE would be obtained by contract ADAIR personnel from the civilian airport fuel provider.

AEROSPACE GROUND EQUIPMENT IS SUPPORT EQUIPMENT REQUIRED FOR AIRCRAFT MAINTENANCE AND SORTIE GENERATION AND IS COMPOSED OF EQUIPMENT SUCH AS GENERATORS, AIR COMPRESSORS, PORTABLE LIGHT SOURCES, TOW BARS, AND MOBILE LIQUID OXYGEN AND NITROGEN SOURCES.

2.1.3 Maintenance

As discussed above, the airport would provide available hangar space as negotiated with the ADAIR contractor. Hangar use associated with the Proposed Action is expected to be required to perform limited maintenance operations on contract ADAIR aircraft. Contract ADAIR aircraft maintenance would include routine inspections and minor unscheduled repairs on the flightline. Major scheduled (depot level maintenance) and unscheduled aircraft maintenance may be performed at the airport or the aircraft may be flown back to the contractor's main operating location.

2.1.4 Personnel

Contract ADAIR services in support for Seymour Johnson AFB would be staffed by an estimated 91 additional contracted maintenance personnel and an estimated 18 contracted pilots at the airport. The estimated contractor arrival is November 2020.

2.1.5 Sorties

The Proposed Action includes contracting an estimated 14 contractor aircraft to fly roughly 2,590 annual sorties to support the 4 FW and other units at Seymour Johnson AFB. This number of sorties does not include sorties expected for contractor training activities (refer to **Section 2.1.6**) and aircraft leaving for or returning from either maintenance or other deployments.

Air Force convention is to describe daily flying schedules in terms of total sorties and a "flight turn pattern." A flight turn pattern allows the CAF to fly available aircraft multiple times per day to maximize available flying opportunities for assigned fighter aircrews. Flight turn patterns are designed to allow aircraft to fly, land, complete appropriate post flight inspections, refuel, and fly again. The maximum flight turn pattern that would be flown by contract ADAIR support would be an 8 x 6.

A TURN PATTERN OF 8 X 6 DOES NOT REQUIRE 14 AIRCRAFT TO EXECUTE BUT RATHER COULD BE FILLED WITH ONLY 8 AIRCRAFT (NOTWITHSTANDING IMPACTS OF BROKEN AIRCRAFT AND AIRSPACE SCHEDULES). THE TURN PATTERN AND TOTAL DAILY SORTIES ARE THE SAME FOR ENVIRONMENTAL PURPOSES, BECAUSE THEY BOTH INDICATE THE NUMBER OF TAKEOFFS AND LANDINGS FOR ANY GIVEN DAY. AN 8 X 6 REPRESENTS 14 TOTAL SORTIES FOR THE DAY EVEN THOUGH THOSE SORTIES MAY HAVE BEEN FLOWN WITH ONLY 8 TOTAL AIRCRAFT.

Contract ADAIR pilots may fly very few additional traffic patterns at the airport to maintain their currency and proficiency as required. Additional traffic patterns would be anticipated on no more than 5 percent of the annual sortie total, about 130 sorties for a total of 2,720 annual sorties from the airport.

Implementation of the Proposed Action would result in an estimated increase of 30.1 percent in the number of operations at ISO. Refer to **Section 2.1.6** for more information on training operations. Contract ADAIR would fly up to a projected 2 percent of the estimated 2,590 sorties during environmental night hours when the effects of aircraft noise are accentuated (10:00 pm to 7:00 am local time; refer to FAA Advisory Circular 150/5020-1, *Noise Control and Compatibility Planning for Airports*). This would increase flights at night by approximately 98 field operations per year, an increase of 25.7 percent of existing night sorties, at ISO. Contractor night sorties would be flown during 4 FW's approved flying window. Seymour Johnson AFB has an agreement with the City of Goldsboro that training sorties are completed by 22:30.

2.1.6 Airspace Use

The locations of the airspace that would be used for contract ADAIR are depicted on **Figure 1-3** (**Section 1.1.2**). Current and projected annual contract ADAIR training activities in the airspace are estimated to be 2,590 sorties and are listed in **Table 2-3**. Proposed contract ADAIR sorties would generally consist of the following five steps: depart from the airport runway, transit from the airport to airspace, perform ADAIR training, transit back to the airport, and land at the airport. Time spent within the airspace (W-122 Complex, W-161 Complex, Echo and Gamecock MOAs) would depend upon the specific training mission performed but would typically last 25 to 60 minutes. Contractor operations would occur in the special use airspace concurrent to the 4 FW or other supported Air Force units. Supersonic operations are allowed in all four Warning Areas. No airspace modifications would be required for contract ADAIR as part of the Proposed Action.

ABOVE GROUND LEVEL (AGL) IS ALTITUDE EXPRESSED IN FEET MEASURED ABOVE THE SURFACE OF THE GROUND. ALTITUDES ARE REFERRED TO AS MEAN SEA LEVEL (MSL) WHEN FLYING ABOVE WATER, WHILE FLYING OVER LAND BOTH MSL AND AGL ARE USED TO DELINEATE AIRSPACE STRUCTURE. FLIGHT LEVEL IS VERTICAL ALTITUDE EXPRESSED IN HUNDREDS OF FEET.

Table 2-3
Current and Projected Annual Training Activities by Seymour Johnson Air Force Base

Airspace	Current Altitude[1]	Baseline Training Sorties[2]	Projected ADAIR Training Sorties[3]	Projected Total Sorties[3]
Warning Area W-122	5,000 MSL to FL390	6,297	1,968	8,265
Burner ATCAA with Hatteras ATCAA/ Pamlico MOAs[4]	8,000 MSL to FL290	786	197	983
Restricted Area R-5306A and Core MOA	Surface to up to but not including FL180	786	49	835
Echo MOA	7,000 MSL to FL220	1,419	49	1,468
Gamecock A MOA	7,000 MSL to FL220	1,047	49	1,096
Farmville MOA	Surface to 5,000 MSL	1,055	197	1,252
Restricted Area R-5314/ Phelps MOA	Surface to FL205	1,726	74	1,800
Warning Area W-177	Surface to FL390	135	39	174
Warning Area W-161	Surface to FL390	135	39	174
Warning Area W-72	Surface to FL390	135	20	155
Total Airspace Sorties		13,521	2,681	16,202

Notes:
[1] No change to current minimum flight altitude is proposed.
[2] Based on annual flying hour program for 4 FW.
[3] While 2,590 sorties would be flown from the selected airport, this totals more than 2,590 because training operations are proposed for multiple airspaces scheduled concurrently.
[4] Includes Hatteras A and B ATCAAs and Pamlico A and B MOAs

ADAIR = adversary air; AGL = above ground level; FL = flight level (vertical altitude expressed in hundreds of feet); ft = feet; MOA = Military Operations Area; MSL = mean sea level

2.1.7 Defensive Countermeasures

While contract ADAIR aircraft would not carry or employ live or inert munitions, aircraft would operate with advanced radar and electronic targeting systems during engagements. Chaff and flares are the principal defensive countermeasures dispensed by military aircraft to avoid detection or attack by enemy air defense systems. Chaff is an electronic countermeasure designed to reflect radar waves and obscure aircraft, ships, and other equipment from radar tracking sources. Chaff bundles consist of millions of nonhazardous aluminum-coated glass fibers. When ejected from the aircraft, these fibers disperse widely in the air, forming an electromagnetic screen that temporarily hides the aircraft from radar and forms a radar decoy, allowing the aircraft to defensively maneuver or leave the area. Flares are magnesium pellets ejected from military aircraft and provide high-temperature heat sources that act as decoys for heat-seeking weapons targeting the aircraft. These defensive countermeasures are utilized to keep aircraft from being successfully targeted by or escape from weapons such as surface-to-air missiles, air-to-air missiles, antiaircraft artillery, and, in the case of the Proposed Action, other aircraft.

Contract ADAIR aircraft would employ chaff and flares (e.g., RR-188 chaff and M206 flares or similar) during 100 percent of their training sortie operations in the Warning Areas. The existing and estimated additional chaff and flare use are listed in **Table 2-4**. Frequent training in use of chaff and flares by aircrews to master the timing of deployment and the capabilities of the devices is a critical component of ADAIR training. Chaff and flares (types similar to RR-188 chaff and M206 flares) are proposed for annual use in contract ADAIR training in the Warning Areas only. Chaff and flares are not deployed overland. While 100 percent of the requirement may not be allocated or expended, this amount is carried forward to determine potential impact associated with defensive countermeasures.

Table 2-4
Existing and Proposed Defensive Countermeasure Use in the Warning Areas

Warning Area[1]	Countermeasure Type	Current Baseline Use[2]	Proposed Contract ADAIR Addition[3]	Total Estimated Future Use[4]
W-122	Chaff	88,173	16,889	92,395
	Flares	31,326	6,000	32,826
W-177	Chaff	1,438	275	1,506
	Flares	511	98	535
W-161	Chaff	1,438	275	1,506
	Flares	511	98	535
W-72	Chaff	1,438	275	1,506
	Flares	511	98	535

Notes:
[1] Defensive countermeasures are not used in the overland special use airspace.
[2] Baseline countermeasure use is based on the current Fiscal Year 2018 use and includes chaff and flares used by CAF self-generated Red Air support.
[3] Contract ADAIR estimated countermeasure use.
[4] This amount is not additive and reflects a 25 percent savings in the amount of chaff and flares used by the CAF due to no longer being tasked to fly CAF self-generated Red Air support.

ADAIR = adversary air; CAF = Combat Air Forces

2.2 SELECTION STANDARDS

In order to assess viable alternatives for the contract ADAIR implementation at Seymour Johnson AFB, the following selection standards were applied:

- Market Feasibility: On 30 July 2019, Air Combat Command (ACC) Acquisition Management and Integration Center released a Request for Information to the contracted air support industry to inform the CAF Contract Air Support Program's NEPA requirements. The Request for Information stated, "Please provide the off-base airfield(s) you are planning to use for your operations at each Operating Location on which you plan to propose. Additionally, please state whether you have been engaging with airport authority/FAA for environmental compliance..." Five companies responded with off-base civilian airport options for providing contracted CAF ADAIR support to Seymour Johnson AFB, North Carolina. The off-base civilian airports provided were considered in Alternatives 1, 2, and 3 of this EA.
- Mission: In addition to supporting Air Force–prioritized missions as described in **Section 1.1.1**, contract ADAIR alternatives must not displace, interfere with, detract from, or reduce other Air Force missions or combat operations worldwide.
- Cost and Time: Contract ADAIR may need to support costs of facilities construction or renovations. Furthermore, as CAF fighter aircrew readiness is currently an urgent need, viable ADAIR alternatives must be able to support ADAIR activities in the near term. Solutions that cannot be implemented within the next 2 years, at the latest, would not meet the purpose and need for the initiative. The Air Force has a strong preference for solutions that could be implemented as soon as possible.
- Airspace Capacity: Alternatives must have the airspace capacity to support force-on-force training engagements and must be able to safely support the additional contract ADAIR sorties in the airspace. Airspace must be large enough to effectively support realistic air-to-air training. Viable alternatives should not require establishing new military airspace but should occur within existing surrounding military airspace.
- Facilities: The airports proposed for use should have facilities or the space available for additional facilities that meet the ADAIR contractor's negotiated needs. The anticipated requirements to operate from the selected airport are explained below:

  - Length of Runway: Airports proposed for use should have a useable runway that is approximately 8,000 feet (ft) long and 100 ft wide. Useable runway is the defined distance on runway useable for takeoff of the aircraft. In general, fighter-type aircraft operate on a minimum runway of 8,000 ft long by 100 ft wide; however, this is not universally applicable, and contractors may engage in a variety of solutions to operate on fields less than 8,000 ft in length. This minimum length may be affected by the aircraft flown, the configuration of the airport, the density altitude, and its proximity to the airspace; however, 8,000 ft provides a good margin of safety when all other factors are consistent.
  - Available Ramp Space for Projected Number of Aircraft: Available ramp space should meet or exceed the space needed to park the number of aircraft to support the Proposed Action.
  - Runway Lighting and Instrumentation: Airports proposed for use should have sufficient runway lighting and instrumentation to service aviation operations during Instrument Meteorological Conditions and/or nighttime operations.
  - Available Arm/Dearm and Hot Brake Servicing Areas – Airports proposed for use should have locations suitable for arm/dearm operations of fighter type aircraft without live weapons.
  - Infrastructure – Airports proposed for use should have adequate hangar space for routine inspections and minor unscheduled maintenance of aircraft. This does not indicate permanent hangar space is required, only that hangar space is available when unscheduled field maintenance is required. It is assumed the contractor will conduct some depot level maintenance at their selected Centralized Repair Facility (not all at the airports proposed for use). There should be enough facilities for pilot and maintenance personnel office space, tool and equipment storage, AGE and vehicle parking, as well as munitions storage and maintenance space.
  - Airfield Services – The airports proposed for use should have the ability to provide Jet A fuel.
- Community and Environmental Considerations: Alternatives should reasonably conform to land use and zoning designations, limit impacts on potentially sensitive populations or resources, and protect public health and safety. Alternatives for which environmental constraints are present and that would require costly, burdensome, or additional time-consuming detailed environmental analysis would not meet the mission implementation timeframe and would not meet the purpose and need for this initiative.

2.3 SCREENING OF ALTERNATIVES

The following potential alternatives were considered:

- Alternative 1 – Establish contract ADAIR capabilities (an estimated 14 aircraft) providing 2,590 annual training sorties for Seymour Johnson AFB operating from ISO. Service is provided in the W-122 Complex, W-161 Complex, and Echo and Gamecock MOAs. Operations would be located in facilities contracted by the service provider with civilian airport authorities. Aircraft maintenance space would be in those contracted by the service provider and aircraft parking would be assigned by the local Fixed-Base Operator (FBO).
- Alternative 2 – Establish contract ADAIR capabilities (an estimated 14 aircraft) providing 2,590 annual training sorties for Seymour Johnson AFB operating from Fayetteville Regional Airport (FAY), Fayetteville, North Carolina. Service is provided in the W-122 Complex, W-161 Complex, and Echo and Gamecock MOAs. Operations would be located in facilities contracted by the service provider with civilian airport authorities. Aircraft maintenance space would be in those contracted by the service provider and aircraft parking would be assigned by the local FBO.
- Alternative 3 – Establish contract ADAIR capabilities (an estimated 14 aircraft) providing 2,590 annual training sorties for Seymour Johnson AFB operating from Newport News-Williamsburg International Airport – Patrick Henry Field (PHF), Newport News, Virginia. Service is provided in the W-122 Complex, W-161 Complex, and Echo and Gamecock MOAs. Operations would be located in facilities contracted by the service provider with civilian airport authorities. Aircraft maintenance space would be in those contracted by the service provider and aircraft parking would be assigned by the local FBO.
- Alternative 4 – Establish contract ADAIR capabilities (an estimated 14 aircraft) providing 2,590 annual training sorties at Seymour Johnson AFB in the W-122 Complex, W-161 Complex, and

Echo and Gamecock MOAs. New hangars and operations and maintenance facilities would be constructed.

- Alternative 5 – Establish an additional Air Force AGRS of military pilots to fly CAF ADAIR aircraft (an estimated 14 aircraft) providing 2,590 annual training sorties at Seymour Johnson AFB in the W-122 Complex, W-161 Complex, and Echo and Gamecock MOAs.
- Alternative 6 – Establish dedicated CAF ADAIR by tasking organic CAF units to provide the capability.

The selection standards described in **Section 2.2** were applied to these alternatives to determine which could support contract ADAIR requirements and fulfill the purpose and need for the Proposed Action. The alternatives considered above are compared in **Table 2-5** (**Comparison of Alternatives**).

Table 2-5
Comparison of Alternatives

Alternative Actions	Selection Standard						Meets Purpose and Need
	1. Market Feasibility	2. Mission	3. Cost and Time	4. Airspace Capacity	5. Facilities	6. Community/ Environmental	
Alternative 1	Yes	Yes	Yes	Yes	Yes	Yes	**YES**
Alternative 2	Yes	Yes	Yes	Yes	Yes	No	**NO**
Alternative 3	Yes	Yes	Yes	Yes	Yes	No	**NO**
Alternative 4	n/a	Yes	No	Yes	No	Yes	**NO**
Alternative 5	n/a	No	No	Yes	No	Yes	**NO**
Alternative 6	n/a	No	Yes	No	No	Yes	**NO**

n/a = not applicable

2.4 ALTERNATIVE ACTIONS ELIMINATED FROM FURTHER CONSIDERATION

Three alternatives were considered and eliminated from further consideration because they would not meet the purpose and need for the action or the selection standards (refer to **Section 2.2**). These alternatives included the following:

- Alternative 2 – Establish contract ADAIR capabilities (an estimated 14 aircraft) providing 2,590 annual training sorties for Seymour Johnson AFB operating from FAY. Establishing the contract ADAIR capabilities at FAY was considered but not carried forward, as the alternative may result in impacts to potentially sensitive populations or resources and create incompatible land uses. Further consideration could result in additional analysis that may not meet mission timeframes. As such, Alternative 2 does not meet Selection Standard 6. This Alternative would not support the purpose and need for the Proposed Action.
- Alternative 3 – Establish contract ADAIR capabilities (an estimated 14 aircraft) providing 2,590 annual training sorties for Seymour Johnson AFB operating from PHF. Establishing the contract ADAIR capabilities at PHF was considered but not carried forward, as the alternative may result in impacts to potentially sensitive populations or resources and create incompatible land uses. Further consideration could result in additional analysis that may not meet mission timeframes. As such, Alternative 3 does not meet Selection Standard 6. This Alternative would not support the purpose and need for the Proposed Action.
- Alternative 4 – Establish contract ADAIR capabilities (an estimated 14 aircraft) providing 2,590 annual training sorties at Seymour Johnson AFB and constructing new hangars and operations and maintenance facilities. Analysis of Seymour Johnson AFB operations space indicates 1,300 square feet (ft^2) may be available to integrate contractor operations in Building 4421, which is the

current combined facility for 335 FS and 336 FS; however, observation of operations of these two existing squadrons indicates integration of the contractor into these facilities would significantly disrupt 335 FS and 336 FS operations by reducing those unit's footprint below normal Air Force Manual guidelines. Seymour Johnson AFB is currently operating at a space deficiency for its current maintenance units. No additional facilities are present, either jointly or separate, to accommodate the approximately 5,500 ft^2 required for contractor operations and maintenance space. In addition, adequate ramp space is not available to accommodate contract ADAIR aircraft parking. Military Construction (MILCON) funds for facility and ramp construction, which are prohibited for this effort, would need to provide adequate operating and aircraft parking space. Establishing the contract ADAIR mission with new facilities construction was considered but not carried forward, as the alternative requires the construction of new facilities and does not provide support in the timely manner needed to address the fighter aircrew readiness crisis, and as such does not meet Selection Standards 3 and 5. It would take 4 to 5 years to plan, program, budget, appropriate, design, and construct new facilities. This would not support the purpose and need for the Proposed Action.

- Alternative 5 – Establish an additional Air Force AGRS of military pilots to fly CAF ADAIR aircraft (an estimated 14 aircraft) providing 2,590 annual training sorties at Seymour Johnson AFB. Establishing a new Air Force AGRS of 4th generation aircraft would support the purpose and need; however, it would take a large amount of time to implement. It takes more than a decade to train an Air Force fighter aircrew. Establishing another organic AGRS would require intensive planning, budgeting, and training of Air Force fighter aircrews before they would be ready to execute their mission. Rapid stand-up and manning of additional AGRS squadrons would be possible but not without reducing both manpower and combat platforms available to support combat operations. Facilities also do not exist at Seymour Johnson AFB to support a new AGRS squadron and MILCON would be required for operations and maintenance facilities, as well as increased aircraft parking. Due to the timeframe and/or reductions in combat mission capacity involved, as well as the need for MILCON, this alternative fails to meet Selection Standards 2, 3, and 5 and does not meet the purpose and need for the Proposed Action.
- Alternative 6 – Establish dedicated CAF ADAIR by tasking organic CAF units to provide the capability. Tasking organic 4th generation assets to provide dedicated ADAIR support for Seymour Johnson AFB would result in both a reduction of combat power applied worldwide as well as continued degradation of the unit's own readiness. The units employing 4th generation aircraft, such as the F-16, are heavily engaged in deployments and overseas missions. Under this alternative, these units would continue to struggle with providing for their own proficiency, while maintaining support for both combat operations and CAF ADAIR. Such an alternative does not meet Selection Standard 2, 4, and 5 or the purpose and need for the Proposed Action.

2.5 Detailed Description of the Alternatives Considered for Detailed Analysis

NEPA and the CEQ regulations mandate the consideration of reasonable alternatives to the Proposed Action. "Reasonable alternatives" are those that also could be utilized to meet the purpose of and need for the Proposed Action. The NEPA process is intended to support flexible, informed decision-making; the analysis provided by this EA and feedback from the public and other agencies will inform decisions made about whether, when, and how to execute the Proposed Action. One alternative action meets the purpose and need, satisfies the criteria set forth in the selection standards, and was carried forward for further detailed analysis in this EA. The No Action Alternative provides a benchmark used to compare potential impacts of the Proposed Action. Alternative 1, carried forward for evaluation, is described in **Section 2.5.1**.

2.5.1 Alternative 1: Contract Adversary Air Operating Out of Kinston Regional Jetport

Under Alternative 1, the CAF would establish contract ADAIR capabilities (an estimated 14 aircraft) providing 2,590 annual training sorties for Seymour Johnson AFB operating out of ISO. The contract ADAIR

aircraft, maintenance, personnel, sorties, airspace use, and defensive countermeasures would be as described under the Proposed Action.

ISO is located in eastern North Carolina approximately halfway between the northern and southern state borders. It is on the northern outskirts of the city of Kinston, north of the C.F. Harvey Parkway and West of North Carolina Highway 58. This civil field services approximately 11,000 events (takeoff and landings) annually in the commercial and private aviation sectors. The runway is 11,500 ft long by 150 ft wide. The airport is equipped with adequate runway lighting and instrumentation to service Instrument Meteorological Conditions and night operations. It has an existing FBO that provides all associated major maintenance services for jet aircraft. The airport has sufficient aircraft parking and surfaces to support contractor operations (**Figure 2-1**). If sufficient facilities are not available at ISO, the contractor may be required to fund the renovation or construction of additional facilities. Separate environmental analysis would be completed as required. This airport is currently operating at less than 60 percent of estimated capacity (North Carolina Department of Transportation [NCDOT], 2015). The airport is approximately 50 nautical miles (NM) from the primary special use airspace (W-122).

2.5.2 No Action Alternative

Analysis of the No Action Alternative provides a benchmark, enabling decision-makers to compare the magnitude of the potential environmental effects of the Proposed Action. NEPA requires an EA to analyze the No Action Alternative. No action means that an action would not take place at this time, and the resulting environmental effects from taking no action would be compared with the effects of allowing the proposed activity to go forward. No action for this EA reflects the status quo, where no additional contract ADAIR assets would be established for Seymour Johnson AFB. Organic Seymour Johnson AFB ADAIR support would result in further declines in fielded fighter aircrew proficiency or combat operations. Seymour Johnson AFB self-generated ADAIR support, the status quo following calendar year 2017 fighter aircrew increases, is causing declining quality of fighter aircrew production which consequently results in unsustainable operations posing an unacceptable threat to national security. Aircraft tasked to support ADAIR missions organically from within CAF would continue to experience their own readiness and proficiency challenges due to the lost training time they are experiencing.

2.6 MITIGATION AND BEST MANAGEMENT PRACTICES

Agencies are required to identify and include all relevant and reasonable mitigation measures that could reduce potential significant impacts. The CEQ regulations (40 CFR § 1508.20) define mitigation as avoiding the impact altogether by not taking a certain action or parts of an action; minimizing impacts by limiting the degree or magnitude of the action and its implementation; rectifying the impact by repairing, rehabilitating, or restoring the affected environment; reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and compensating for the impact by replacing or providing substitute resources or environments.

Mitigation measures are not included in this EA; however, environmental commitments and BMPs are described, when applicable, in the environmental consequences discussion for each resource in **Chapter 4**.

2.7 SUMMARY OF POTENTIAL ENVIRONMENTAL CONSEQUENCES

The potential impacts associated with Alternatives and the No Action Alternative are listed in **Table 2-6**. The summary is based on information discussed in detail in **Chapter 4** (**Environmental Consequences**) of the EA and includes a concise definition of the issues addressed and the potential environmental impacts associated with the Proposed Action.

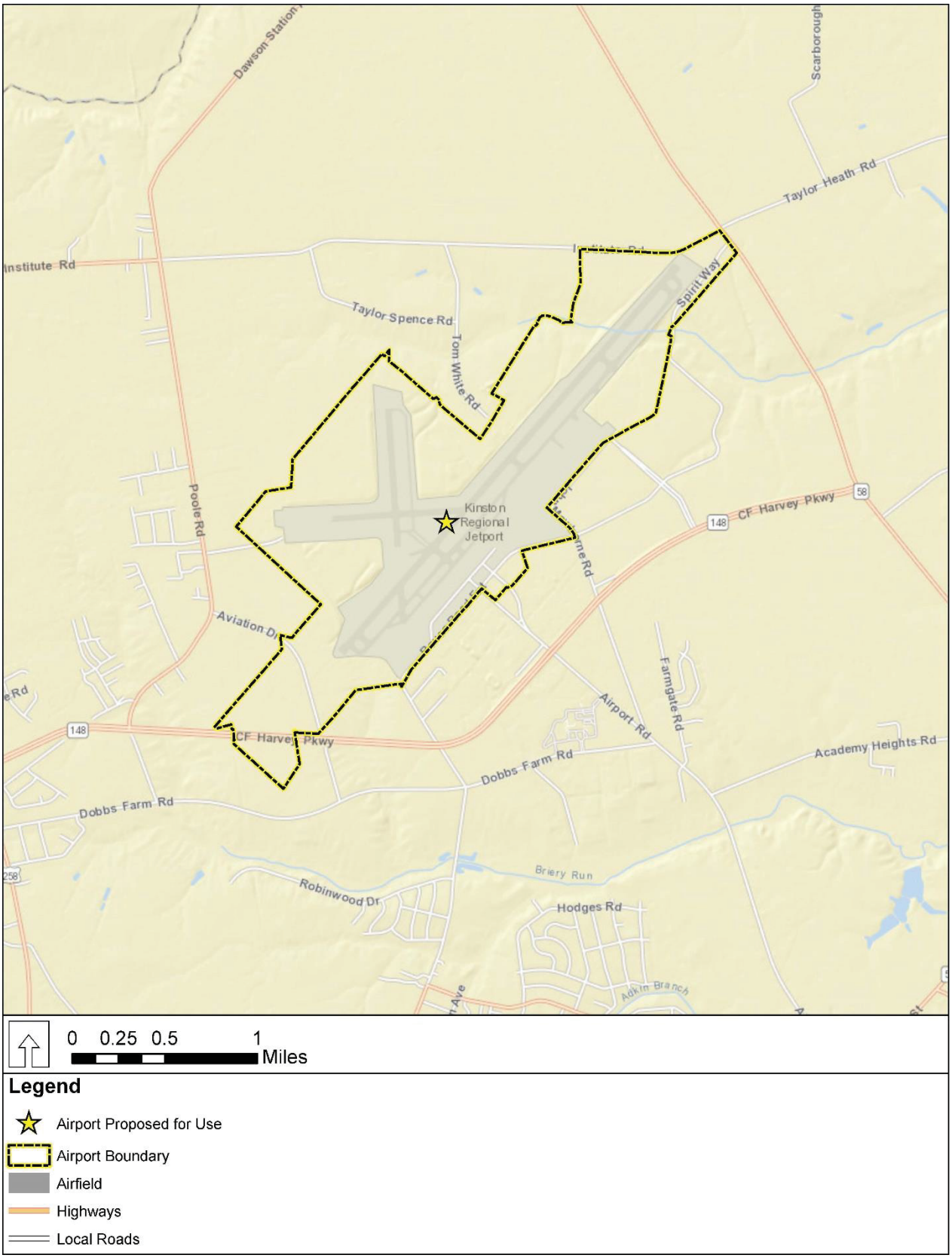


Figure 2-1. Proposed Location for Contract Adversary Air Operations at Kinston Regional Jetport.

Table 2-6
Comparison of Potential Environmental Consequences of the Proposed Action

Alternative	Resource										
	Airspace Management and Use	Noise	Safety	Air Quality	Biological Resources	Land Use	Socioeconomics – Income and Employment	Environmental Justice and Protection of Children	Cultural Resources	Hazardous Materials and Wastes and Toxic Substances	Infrastructure, Transportation, and Utilities
Alternative 1: **Contract ADAIR operations supporting Seymour Johnson AFB out of ISO**	 **ISO** Negligible impacts **Special Use Airspace** Negligible impacts	 **ISO** If the Low, Medium, or High Noise Scenario contract ADAIR aircraft are selected, no significant environmental impacts **Special Use Airspace** Impacts associated with sonic booms would be negligible	 **ISO** No impacts on ground, explosive, or flight safety **Special Use Airspace** No impacts on ground, explosive, or flight safety	 **ISO** No impact on the region's ability to comply with the NAAQS for regulated pollutants Will not hamper efforts to achieve compliance with ozone NAAQS **Special Use Airspace** No impact in special use airspace No impact on the region's ability to meet NAAQS for all regulated pollutants	 **ISO** No impacts on vegetation communities or habitat Negligible, short- and long-term impacts on wildlife from increased noise Minor impacts on birds from potential aircraft/ bird collisions No impacts on federally listed species **Special Use Airspace** No impacts on vegetation communities or habitat Less than significant impacts on wildlife from the ingestion of residual plastic chaff and flare components Moderate adverse impact on birds and mammals in low-altitude airspace No impacts on wildlife from noise, including sonic booms	 **ISO** Potential moderate impacts on the existing residential noise environment **Special Use Airspace** No changes to existing land use beneath the airspace	 **ISO** Potential major, beneficial impact from an estimated $39 million in possible annual expenditures **Special Use Airspace** No impacts on income or employment	 **ISO** No disproportionate impact on minority or low-income populations No disproportionate impacts on children **Special Use Airspace** N/A	 **ISO** No impacts on historic properties or archaeological resources No known traditional cultural resources or sacred sites are present **Special Use Airspace** No impact on architectural resources, cultural resources, or historic properties. No impacts on potential submerged archaeological resources	 **ISO** Minor impact on increased use of hazardous materials No impact on hazardous waste management No impacts on asbestos-containing materials and lead-based paint management Long-term, minor, beneficial impact on managing and disposal of polychlorinated biphenyls No impacts from radon **Special Use Airspace** N/A	 **ISO** Negligible impacts on utilities and communications infrastructure Minor impacts on transportation **Special Use Airspace** N/A
No Action Alternative	 No change to airspace management and use at ISO or in the special use airspace	 No change to noise environment at ISO or in the special use airspace	 No change to ground, flight, or explosive safety at ISO or in the special use airspace	 No change to air quality at ISO or in the special use airspace	 No change to biological resources at ISO or in the special use airspace	 No change to land use at ISO or in the special use airspace	 No change to income and employment at ISO or in the special use airspace	 No disproportionate impacts on minority populations, low-income communities, or children in the community at ISO or in the special use airspace	 No change to cultural resources at ISO/ or in the special use airspace	 No change to hazardous materials and wastes and toxic substances at ISO or in the special use airspace	 No change to infrastructure, utilities, or local traffic/transportation networks at ISO or in the special use airspace

Notes:

 No, minor, or negligible impact  Moderate impact but not significant  Major, potentially significant impact; further analysis required

ADAIR = adversary air; AFB = Air Force Base; ISO = Kinston Regional Jetport; MOA = Military Operations Area; N/A = not applicable; NAAQS = National Ambient Air Quality Standards; POI = point of interest

This page intentionally left blank

CHAPTER 3 AFFECTED ENVIRONMENT

Existing environmental conditions could be affected by the Proposed Action and alternatives. The existing conditions for relevant resources are defined to provide a meaningful baseline from which to compare potential future effects. In this chapter, each resource is defined and the geographic scope is identified, followed by a description of the existing conditions for that resource. The expected geographic scope of potential consequences is referred to as the Region of Influence (ROI). The ROI boundaries vary depending on the nature of each resource. For example, the ROI for some resources, such as socioeconomics – income and employment and air quality, extend over a larger jurisdiction unique to the resource. In addition, some resources discuss the available baseline data, the airport proposed for use, and special use airspace in the same section, while some discuss these elements separately, depending on the complexity of the ROI.

NEPA requires federal agencies to consider alternatives to the Proposed Action and analyze potential impacts of alternative actions. Potential impacts of the Proposed Action and its alternatives described in this document will be assessed in accordance with the Air Force EIAP (32 CFR Part 989), which requires that impacts on resources be analyzed in terms of their context, duration, and intensity. To help the public and decision makers understand the implications of impacts, they will be described in the short and long term, cumulatively, and within context. Environmental resources and the ROI analyzed in the EA are listed in **Table 3-1**. The expected geographic scope of any potential consequences is identified as the ROI. The airport proposed for use and environs, as well as the area within and under the proposed airspace, are considered in determining the ROI for each resource.

Table 3-1
Environmental Resources Analyzed in the Environmental Assessment

Resource	ROI: ISO	ROI: Airspace*
Airspace Management and Use	X	X
Noise	X	X
Safety	X	X
Air Quality	X	X
Biological Resources (T&E, Wetlands, Marine Resources)	X	X
Water Resources	N/A	N/A
Geological Resources	N/A	N/A
Land Use (including Coastal Zone Management)	X	X
Socioeconomics	X	N/A
Environmental Justice and Protection of Children	X	N/A
Cultural Resources (Archeological, Architectural, Traditional)	X	X
Hazardous Materials and Wastes and Toxic Substances	X	N/A
Infrastructure, Transportation, and Utilities	X	N/A

Note:
* Warning Area W-122 Complex (includes Restricted Area R-5314/Phelps, Hatteras/Pamlico, and Restricted Area R-5306A); Echo, Gamecock A, and Farmville MOAs; Warning Areas W-177, W-161, W-72.

ISO = Kinston Regional Jetport; MOA = Military Operations Area; N/A = not applicable; ROI = Region of Influence; T&E = threatened and endangered

Resource Areas Eliminated from Detailed Analysis

The Proposed Action is not expected to affect the following resources; therefore, they are not carried forward for detailed analysis.

Socioeconomics – Housing, Population, and Schools

The requirement for an estimated 109 contract personnel and their families supporting the Proposed Action in the vicinity of the selected airport, would have no impact on the region's population. Assuming all 109 contract personnel relocated with family members to Lenoir County, this would be a negligible increase in the county population of nearly 57,000. There is adequate available housing and public schools to support the minor increase in population from the Proposed Action; therefore, there would be no impact on the region's population, housing, or schools from implementation of the Proposed Action, and these resources are not carried forward for further detailed analysis in this EA.

Visual Resources

There would be no potential impacts on visual resources from the proposed contract ADAIR activities since no new construction is proposed. Aircraft would utilize the existing airfield; therefore, contract ADAIR activities in the areas adjacent to the airport facilities and aircraft parking ramp would not change the existing visual setting. Likewise, the Proposed Action would not affect the visual setting of the natural areas and other lands beneath the special use airspace. Contract ADAIR operations would occur in existing airspace where training activities currently take place. While some low-altitude training would continue under the Proposed Action, this activity would be brief and not alter the existing landscape. As such, this resource is not carried forward for further detailed analysis in this EA.

Water Resources

Under the Proposed Action, there would be no ground-disturbing activities. The proposed additional contract ADAIR aircraft, personnel, and associated operational and maintenance activities would not affect water quality or quantity. In the overwater airspace, the use of defensive countermeasures has been found to be nontoxic. Due to the rare and infrequent nature of fuel dumps as well as in-place safety precautions, these emergency procedures are not likely to adversely affect water resources. Water resources are not carried forward for further detailed analysis in this EA.

Soil Resources

Protection of soils was considered when evaluating potential impacts of the Proposed Action in terms of alteration of soil composition, structure, or function and any accumulation of chaff material. Impacts on soils would be adverse if they alter the soil composition, structure, or function within the environment or accumulate in the soil. Under the Proposed Action, there would be no ground-disturbing activities to affect soil resources. Nontoxic defensive countermeasures are not deployed in the overland special use airspace. Soil resources are not carried forward for further detailed analysis in this EA.

3.1 AIRSPACE MANAGEMENT AND USE

3.1.1 Definition of the Resource

Airspace management involves the direction, control, and handling of flight operations in the airspace that overlies the borders of the United States and its territories. Under Title 49, U.S.C. § 40103, *Sovereignty and Use of Airspace*, and Public Law No. 103-272, the US government has exclusive sovereignty over the nation's airspace. The FAA has the responsibility to plan, manage, and control the structure and use of all airspace over the United States. FAA rules govern the national airspace system, and FAA regulations establish how and where aircraft may fly. Collectively, the FAA uses these rules and regulations to make

airspace use as safe, effective, and compatible as possible for all types of aircraft, from private propeller-driven planes to large, high-speed commercial and military jets.

Terminal airspace around civil airports is defined by the terminal airspace area designations for each airport (FAA Order Job Order 7400.11D, *Air Traffic Organization Policy, Airspace Designations and Reporting Points*). These airspace designations include Class A through G, which specify the airspace within which all aircraft operators are subject to operating rules and equipment requirements of Part 91 of the Federal Aviation Regulations (see 14 CFR § 91.130). General descriptions of the airspace classifications common to civil airports, including Class C, D, and E airspace, are described following. More specific rules may apply to ISO.

Class C. Generally, this is the airspace from the surface to 4,000 ft above the airport elevation (charted in MSL) surrounding those airports that have an operational control tower, are serviced by a radar approach control, and have a certain number of Instrument Flight Rules (IFR) operations or passenger enplanements. Although the configuration of each Class C area is individually tailored, the airspace usually consists of a surface area with a 5-NM radius, an outer circle with a 10-NM radius that extends from 1,200 to 4,000 ft above the airport elevation, and an outer area. Each aircraft must establish two-way radio communications with the Air Traffic Control (ATC) facility providing air traffic services prior to entering the airspace and thereafter maintain those communications while within the airspace.

Class D. Generally, this is the airspace from the surface to 2,500 ft above the airport elevation (charted in MSL) surrounding those airports that have an operational control tower. The configuration of each Class D airspace area is individually tailored and when instrument procedures are published, the airspace will normally be designed to contain the procedures. Arrival extensions for instrument approach procedures may be Class D or Class E airspace. Unless otherwise authorized, each aircraft must establish two-way radio communications with the ATC facility providing air traffic services prior to entering the airspace and thereafter maintain those communications while in the airspace.

Class E. Generally, if the airspace is not Class A, B, C, or D and is controlled airspace, then it is Class E airspace. Class E airspace extends upward from either the surface or a designated altitude to the overlying or adjacent controlled airspace. When designated as a surface area, the airspace will be configured to contain all instrument procedures. Also, in this class are federal airways, airspace beginning at either 700 or 1,200 ft AGL used to transition to and from the terminal or en route environment and en route domestic and offshore airspace areas designated below 18,000 ft MSL. Unless designated at a lower altitude, Class E airspace begins at 14,500 ft MSL over the United States, including that airspace overlying the waters within 12 NM of the coast of the 48 contiguous states and Alaska, up to but not including 18,000 ft MSL, and the airspace above flight level 600.

Aircraft use different kinds of airspace according to the specific rules and procedures defined by the FAA for each type of airspace. For the Proposed Action, CAF training activities would utilize special use airspace proximate to Seymour Johnson AFB. Special use airspace includes MOAs, Restricted Areas, ATCAAs, and Warning Areas. A MOA is designated airspace outside of Class A airspace used to separate or segregate certain nonhazardous military activities from IFR traffic and to identify for Visual Flight Rules (VFR) traffic where these activities are conducted (14 CFR § 1.1). Activities in MOAs include, but are not limited to, air combat maneuvers, air intercepts, and low-altitude tactics. The defined vertical and lateral limits vary for each MOA. While MOAs generally extend from 1,200 ft above ground level (AGL) to 18,000 ft above mean sea level (MSL), the floor may extend below 1,200 ft AGL if there is a mission requirement and minimal adverse aeronautical effect. MOAs allow military aircraft to practice maneuvers and tactical flight training at airspeeds in excess of 250 knots indicated airspeed (approximately 285 mi per hour). The FAA requires publication of the hours of operation for any MOA so that all pilots, both military and civilian, are aware of when other aircraft could be in the airspace. Each military organization responsible for a MOA develops a daily use schedule. Although the FAA designates MOAs for military use, other pilots may transit the airspace under VFR. MOAs exist to notify civil pilots under VFR where heavy volumes of military training exist which increases the chance of conflict and are generally avoided by VFR traffic. MOAs in the vicinity of busy airports may have specific avoidance procedures that also apply to small private and municipal airports. Such avoidance procedures are maintained for each MOA, and both civil and military aircrews

build them into daily flight plans. Restricted areas are typically used by the military due to safety or security concerns. Hazards include existence of unusual and often invisible threats from artillery use, aerial gunnery, or guided missiles. An ATCAA is an airspace of defined vertical/lateral limits assigned by FAA ATC for the purpose of providing air traffic segregation between the specified activities being conducted within the assigned airspace and other IFR air traffic. Typically, these blocks of airspace start at flight level 180 or 18,000 ft MSL and, in some cases, are contoured to the dimensions of the MOAs beneath them. A Warning Area is airspace of defined dimensions that extends from 3 NM outward from the coast of the United States and may be over US waters, international waters, or both. The purpose of Warning Areas is to warn nonparticipating pilots of potentially hazardous activity. Warning areas may be used for other purposes if released to the FAA during periods when not required for their intended purpose and are within areas in which the FAA has ATC authority.

Each military organization responsible for special use airspace develops a daily use schedule. Although the FAA designates special use airspace for military use, other pilots may transit the airspace. Avoidance procedures are maintained for each special use airspace, and military aircrews build them into daily flight plans.

The primary operational airspace that would be used by contract ADAIR aircraft is Warning Area W-122 located about 60 mi southeast of Seymour Johnson AFB over the Atlantic Ocean (see **Figure 1-3**). The W-122 complex may be scheduled concurrent to several Warning Areas, ATCAAs, and Restricted Areas. Other airspace available for use by ADAIR missions include Echo, Gamecock A, Farmville, R-5314/Phelps, Hatteras, Pamlico MOAs; R-5306A and Core MOA; and W-161, W-177, and W-72. Multiple agencies manage and control the airspace proposed for contract ADAIR use:

- Air Force (Shaw AFB) – W-161 and W-177, Echo (Seymour Johnson AFB)
- US Navy – W-72, Hatteras
- US Marine Corps (Cherry Point) – Phelps/Core/Pamlico/R-5314/R-5306A
- FAA (Washington Center) – Farmville/Gamecock A

The ROI for airspace use and management includes ISO and its respective environs as well as the special use airspace depicted on **Figure 1-3**.

3.1.2 Existing Conditions – Kinston Regional Jetport

ISO is a public airport located 3 mi north of the city of Kinston, North Carolina, and approximately 25 mi east of Seymour Johnson AFB. The airport has a single runway that is one of the longest in the southeastern United States. Kinston primarily supports general aviation and commercial flights, including charter flights, but is also used by several military bases in the region, including Seymour Johnson AFB, for offsite training purposes. The majority of operations at ISO are performed by general aviation aircraft.

The FAA provides ATC for ISO. Controlled Class D airspace, extending upward from the surface up to and including 2,600 ft MSL within a 4.1-NM radius of ISO, has been established around the airport to support managing air traffic. This Class D airspace is effective during the specific dates and times established in advance by a Notice to Airmen.

A variety of factors can influence the annual level of operational activity at an airport, including economics, national emergencies, and maintenance requirements. Operations consist of arrivals and departures (itinerant) and local operations by primarily general aviation aircraft, with a smaller amount of military and other civil air carrier and air taxi flights. Military aircraft use makes up about 44 percent of the airfield use, with the remaining amount used by general aviation and transient civil aircraft flights (**Table 3-2**).

Table 3-2
Annual Operations at Kinston Regional Jetport

Use	Annual Operations	Percentage of Use
Military		
4th Fighter Wing	2,666	12.9
916th Air Refueling Wing	416	2.0
Transient	6,024	29.2
Civilian		
Cargo	44	0.2
Air Carrier	52	0.3
Air Taxi	1,840	8.9
General Aviation	9,582	46.5
Total	**20,624**	**100**

3.1.3 Existing Conditions – Airspace

The affected environment for airspace management includes special use airspace as described in **Section 2.1.6**. where aircraft based at Seymour Johnson AFB perform training operations, including W-122, Burner ATCAA with Hatteras ATCAA/Pamlico MOAs, R-5306A and Core MOA, Echo MOA, Gamecock A MOA, Farmville MOA, R-5314/Phelps MOA, W-177, W-161, and W-72.

3.2 NOISE

3.2.1 Definition of the Resource

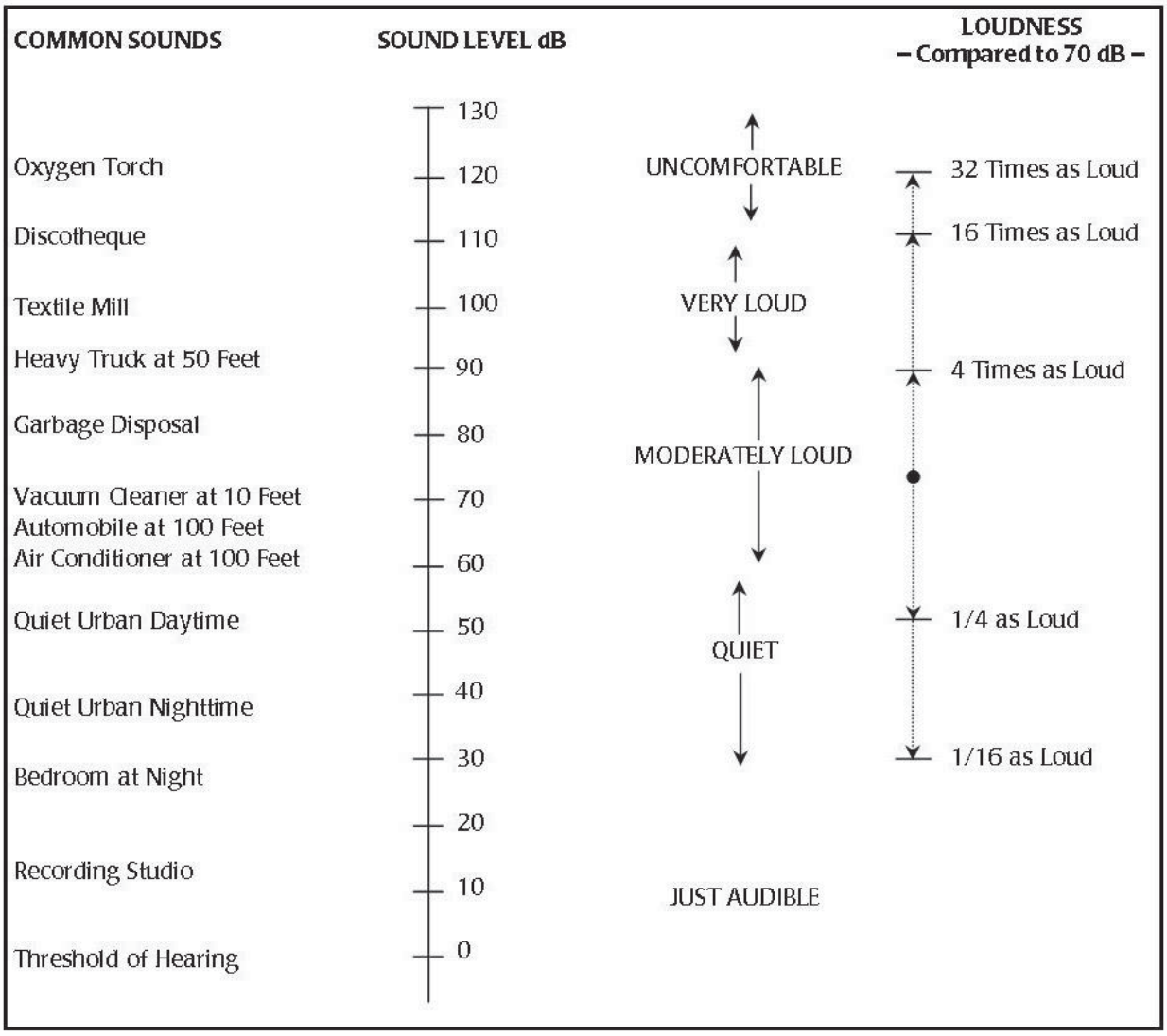
Sound is a physical phenomenon consisting of minute vibrations that travel through a medium, such as air or water, and are sensed by the human ear. Sound becomes noise when it is unwelcome and interferes with normal activities, such as sleep or conversation. Noise is generally described as unwanted sound. Unwanted sound can be based on objective effects (such as hearing loss or damage to structures) or subjective judgments (community annoyance). The response of different individuals to similar noise events is diverse and influenced by the type of noise, the perceived importance of the noise, its appropriateness in the setting, the time of day, the type of activity during which the noise occurs, and the sensitivity of the individual. Noise also may affect wildlife through disruption of nesting, foraging, migration, and other life-cycle activities.

Sound is expressed in logarithmic units of decibels (dB). A sound level of 0 dB is approximately the threshold of human hearing and is barely audible under extremely quiet listening conditions. Normal speech has a sound level of approximately 60 dB; sound levels above 120 dB begin to be felt inside the human ear as discomfort. Sound levels between 130 to 140 dB are felt as pain (Berglund and Lindvall, 1995). The minimum change in the sound level of individual events that an average human ear can detect is about 3 dB.

All sounds have a spectral content, which means their magnitude or level changes with frequency, where frequency is measured in cycles per second, or hertz. To mimic the human ear's nonlinear sensitivity and perception of different frequencies of sound, the spectral content is weighted. For example, environmental noise measurements usually employ an "A-weighted" scale that filters out very low and very high frequencies to replicate human sensitivity. It is common to add the "A" to the measurement unit to identify that the measurement was made with this filtering process, for instance dBA. In this document, the dB unit refers to A-weighted sound levels unless otherwise noted.

A-weighted sound levels from common sources are depicted on **Figure 3-1**. Some sources, like the air conditioner and vacuum cleaner, are continuous sounds whose levels are constant for some time. Some

sources, like the automobile and heavy truck, are the maximum sound during an intermittent event like a vehicle pass-by. Some sources like “urban daytime” and “urban nighttime” are averages over extended periods. A variety of noise metrics have been developed to describe noise over different time periods.



Source: Harris, 1979.

Figure 3-1. Typical A-weighted Sound Levels of Common Sounds.

Military aircraft generate two types of sound. One is subsonic noise, which is continuous sound generated by the aircraft’s engines and also by air flowing over the aircraft itself. Subsonic noise occurs at the airport and in the airspace. The other type is supersonic noise consisting of sonic booms. Sonic booms are transient, impulsive sounds generated during supersonic flight. Supersonic flight must occur only within authorized airspace. These two types of noise differ in terms of characteristics.

Aircraft subsonic noise consists of two major types of sound events: flight events (including takeoffs, landings, and flyovers) and stationary events, such as engine maintenance run-ups. Noise from aircraft overflights typically occurs beneath main approach and departure paths and in local air traffic patterns around the airport. Noise from stationary events typically occurs in areas near aircraft parking ramps and

staging areas. As aircraft climb, the noise received on the ground drops to lower levels, eventually fading into the background or ambient levels.

Aircraft in supersonic flight (i.e., exceeding the speed of sound, Mach 1) cause sonic booms. A sonic boom is characterized by a rapid increase in pressure, followed by a decrease before a second rapid return to normal atmospheric levels. This change occurs very quickly, usually within a few tenths of a second. It is usually perceived as a "bang-bang" sound. The amplitude of a sonic boom is measured by its peak overpressure, in pounds per square foot (psf). The amplitude depends on the aircraft's size, weight, geometry, Mach number, and flight altitude. Altitude is usually the biggest single factor. Maneuvers (turns, dives, etc.) also affect the amplitude of particular booms.

Not all supersonic flights cause sonic booms that are heard at ground level. As altitude increases, air temperature and sound speed decrease. These sound speed changes cause booms to be turned upward as they travel toward the ground. Depending on the altitude of the aircraft and the Mach number, many sonic booms can be bent upward such that they never reach the ground. This phenomenon, referred to as "cutoff," also acts to limit the width (area covered) of the sonic booms that do reach the ground. The overpressures of booms that reach the ground are well below those that would begin to cause physical injury to humans or animals. They can, however, be annoying and can cause startle reaction in humans and animals. On occasion, sonic booms can cause physical damage (e.g., to a window) if the overpressure is of sufficient magnitude. The condition of the structure is a major factor when damage occurs, the probability of which, tends to be low. For example, the probability of a 1-psf boom (average pressure in airspace) cracking plaster or breaking a window falls in the range of 1 in 10,000 to 1 in 10 million.

3.2.1.1 Noise Metrics

Noise metrics quantify sounds so they can be compared with each other, and with their effects, in a standard way. There are a number of metrics that can be used to describe a range of situations, from a particular individual event to the cumulative effect of all noise events over a long time. This section describes the metrics relevant to environmental noise analysis. Noise metrics and noise models are described in **Appendix B**.

Single Event Metrics

Maximum Sound Level

The highest A-weighted sound level measured during a single event in which the sound changes with time is called the maximum A-weighted sound level or Maximum Sound Level and is abbreviated L_{max}. The L_{max} is depicted for a sample event on **Figure 3-2**.

L_{max} is the maximum level that occurs over a fraction of a second. For aircraft noise, the "fraction of a second" is one-eighth of a second, denoted as "fast" response on a sound level measuring meter (American National Standards Institute, 1988). Slowly varying or steady sounds are generally measured over 1 second, denoted as "slow" response. L_{max} is important in judging if a noise event will interfere with conversation, television or radio listening, or other common activities. Although it provides some measure of the event, it does not fully describe the noise, because it does not account for how long the sound is heard.

Sound Exposure Level

Sound Exposure Level (SEL) combines both the intensity of a sound and its duration. For an aircraft flyover, SEL includes the maximum and all lower noise levels produced as part of the overflight, together with how long each part lasts. It represents the total sound energy in the event. **Figure 3-2** indicates the SEL for an example event, representing it as if all the sound energy were contained within 1 second.

Because aircraft noise events last more than a few seconds, the SEL value is larger than L_{max}. It does not directly represent the sound level heard at any given time but rather the entire event. SEL provides a much better measure of aircraft flyover noise exposure than L_{max} alone.

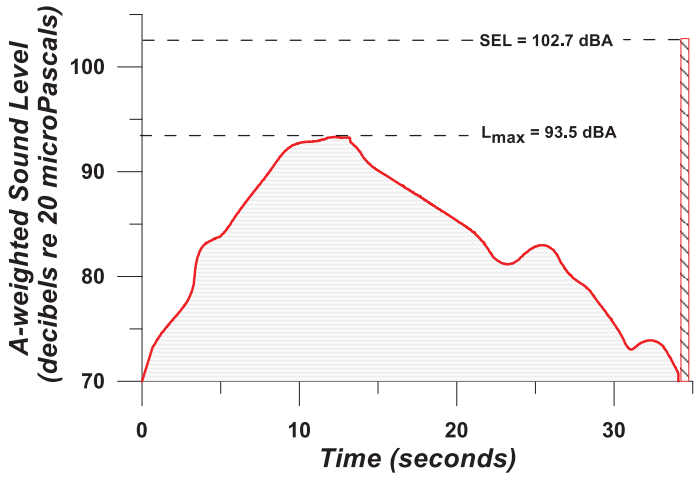


Figure 3-2. Example of Maximum Sound Level and Sound Exposure Level from an Individual Event.

Exposure Level

Sound Exposure Level (SEL) combines both the intensity of a sound and its duration. For an aircraft flyover, SEL includes the maximum and all lower noise levels produced as part of the overflight, together with how long each part lasts. It represents the total sound energy in the event. **Figure 3-2** indicates the SEL for an example event, representing it as if all the sound energy were contained within 1 second.

Because aircraft noise events last more than a few seconds, the SEL value is larger than L_{max}. It does not directly represent the sound level heard at any given time but rather the entire event. SEL provides a much better measure of aircraft flyover noise exposure than L_{max} alone.

Overpressure

The single event metrics commonly used to assess supersonic noise are overpressure in psf and C-Weighted Sound Exposure Level (CSEL). Overpressure is the peak pressure at any location within the sonic boom footprint.

C-Weighted Sound Exposure Level

CSEL is SEL computed with C frequency weighting, which is similar to A-weighting (discussed in **Section 3.2.1**) except that C weighting places more emphasis on low frequencies below 1,000 hertz.

Cumulative Metrics

Equivalent Sound Level

Equivalent Sound Level (L_{eq}) is a “cumulative” metric that combines a series of noise events over a period of time. L_{eq} is the sound level that represents the decibel average SEL of all sounds in the time period. Just as SEL has proven to be a good measure of a single event, L_{eq} has proven to be a good measure of series of events during a given time period.

The time period of an L_{eq} measurement is usually related to some activity and is given along with the value. The time period is often shown in parenthesis (e.g., $L_{eq(24)}$ for 24 hours). The L_{eq} from 7:00 a.m. to 3:00 p.m. may give exposure of noise for a school day.

An example of $L_{eq(24)}$ using notional hourly average noise levels ($L_{eq[h]}$) for each hour of the day is depicted on **Figure 3-3**. The $L_{eq(24)}$ for this example is 61 dB.

Day-Night Average Sound Level

Day-Night Average Sound Level (DNL or L_{dn}) is a cumulative metric that accounts for all noise events in a 24-hour period; however, unlike $L_{eq(24)}$, DNL contains a nighttime noise penalty. To account for our increased sensitivity to noise at night, DNL applies a 10-dB penalty to events during the nighttime period, defined as 10:00 p.m. to 7:00 a.m. The notations DNL and L_{dn} are both used for Day-Night Average Sound Level and are equivalent. For airports and military airfields, DNL represents the average sound level for annual average daily aircraft events.

An example of DNL using notional hourly average noise levels ($L_{eq[h]}$) for each hour of the day is depicted on **Figure 3-3**. Note the $L_{eq(h)}$ for the hours between 10:00 p.m. and 7:00 a.m. (i.e., environmental night) have a 10-dB penalty assigned. DNL for the example noise distribution depicted on **Figure 3-3** is 65 dB.

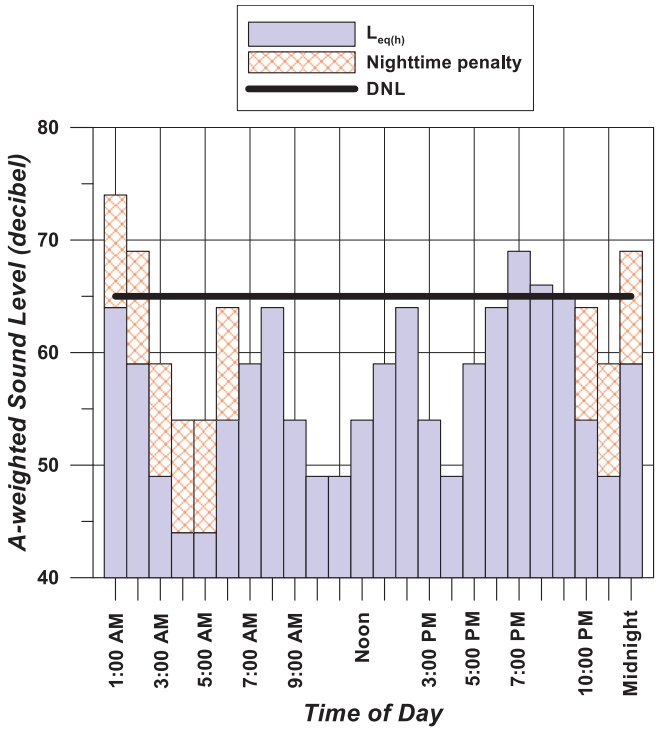


Figure 3-3. Example of Day-Night Average Sound Level Computed from Hourly Average Sound Levels.

DNL does not represent a noise level heard at any given time but represents long-term exposure. Scientific studies have found good correlation between the percentages of groups of people highly annoyed and the level of average noise exposure measured in DNL (Schultz, 1978; US Environmental Protection Agency [USEPA], 1978).

Onset-Rate Adjusted Monthly Day-Night Average Sound Level

Military aircraft using special use airspace such as Military Training Routes, MOAs, Warning Areas, and Restricted Areas/Ranges generate a noise environment that is somewhat different from that around airports. Rather than regularly occurring operations like at airports, activity in special use airspace is highly sporadic. It is often seasonal, ranging from 10 per hour to less than 1 per week. Individual military overflight events also differ from typical community noise events in that noise from a low-altitude, high-airspeed flyover can have a rather sudden onset, with rates of up to 150 dB per second.

The cumulative daily noise metric devised to account for the "surprise" effect of the sudden onset of aircraft noise events on humans and the sporadic nature of special use airspace activity is the Onset-Rate Adjusted Monthly Day-Night Average Sound Level (L_{dnmr}). Onset rates between 15 and 150 dB per second require an adjustment of 0 to 11 dB to the event's SEL, while onset rates below 15 dB per second require no adjustment to the event's SEL (Stusnick et al., 1992). The term "monthly" in L_{dnmr} refers to the noise assessment being conducted for the month with the most operations or sorties, the busiest month.

3.2.1.2 Noise Models

This section summarizes the analysis tools used to calculate the noise levels for the EIAP.

Aviation Environmental Design Tool

Civilian aircraft operations were modeled using the Aviation Environmental Design Tool (AEDT). AEDT is the FAA's software system that is designed to model aviation related operations in space and time to compute noise, emissions, and fuel consumption. Airfield noise modeling for the EIAP combines civil aircraft noise estimated with AEDT Version 3b (FAA, 2019) with military aircraft noise, estimated with Noisemap Version 7.3.

NOISEMAP

Analyses of aircraft noise exposure and compatible land uses around DOD airfield-like facilities are normally accomplished using a group of computer-based programs, collectively called NOISEMAP (Czech and Plotkin, 1998; Wasmer and Maunsell, 2006a, 2006b). The core computational program of the NOISEMAP suite is NMAP. In this report, NMAP Version 7.3 was used to analyze aircraft operations and to generate noise contours.

MR_NMAP

When the aircraft flight tracks are not well defined and are distributed over a wide area, such as in Military Training Routes with wide corridors or Warning Areas, the Air Force uses the DOD-approved MR_NMAP program (Lucas and Calamia, 1996). In this report, MR_NMAP Version 3.0 was used to model subsonic aircraft noise in special use airspaces. For airspace environments where noise levels are calculated to be less than 45 dB, the noise levels are stated as "<45 dB."

PCBoom

Environmental analysis of supersonic aircraft operations requires calculation of sonic boom amplitudes. For the purposes of this study, the Air Force and DOD-approved PCBoom program was used to assess sonic boom exposure due to military aircraft operations in supersonic airspace. In this report, PCBoom Version 4 was used to calculate sonic boom ground signatures and overpressures from supersonic vehicles performing steady, level flight operations (Plotkin, 2002).

BooMap

For cumulative sonic boom exposure under supersonic air combat training arenas, the Air Force and DOD-approved BooMap program was used. In this report, BooMap96 was used to calculate cumulative C-weighted DNL exposure based on long-term measurements in a number of airspaces (Plotkin, 1993).

The ROI for noise includes ISO and the environs for the airport as well as the special use airspace depicted on **Figure 1-3**. Noise analysis at the airport was conducted to update the airport noise contours and the noise levels in the associated special use airspace described in **Section 3.2.3**, in order to reflect the most recent and accurate aircraft operations and flying conditions.

3.2.2 Existing Conditions – Kinston Regional Jetport

As is normal for active civil airports, the primary driver of noise at ISO is aircraft operations. Standard aircraft operations include take-offs, landings, closed patterns, and static run-ups.

In addition to aviation noise, some additional noise results from the day-to-day activities associated with operations, maintenance, and the industrial functions associated with the operations of the airport. These noise sources include the operations of ground-support equipment and other transportation noise from vehicular traffic. Noise resulting from aircraft operations remains the dominant noise source.

Aircraft operations at ISO consist of based civil aircraft and a variety of transient civil and military aircraft. Existing annual aircraft operations at ISO total 20,624, as listed in **Table 3-3**. An operation is defined as a single takeoff or landing. Closed patterns consist of two operations, one departure and one arrival (e.g., two closed pattern circuits consist of four total operations). The table pattern numbers are operation counts, not pattern circuit counts. ISO's Runway 05 is used for the majority of aircraft operations. The majority of aircraft operations at ISO are performed by transient military aircraft including the C-123 and F-15E aircraft. A more detailed existing annual aircraft operations table can be found in **Appendix B**.

Table 3-3
Existing Annual Aircraft Operations Summary at Kinston Regional Jetport

Aircraft	Departures		Arrivals		Closed Patterns		Total Operations		
	Day	Night	Day	Night	Day	Night	Day	Night	Total
Military	1,557	61	1,557	61	5,694	176	8,808	298	9,106
Based Civilian	1,916	0	1,916	0	4,266	0	8,098	0	8,098
Transient Civilian	1,668	42	1,668	42	0	0	3,336	84	3,420
Grand Total	5,141	103	5,141	103	9,960	176	20,242	382	20,624

The resultant 65- to 85-dBA DNL contours in 5-dBA increments for the existing daily flight events at ISO are depicted on **Figure 3-4**. In accordance with Air Force Handbook 32-7084, *AICUZ Program Manager's Guide*, the 65-dBA DNL is the noise level below which generally all land uses are compatible with noise from aircraft operations. It should be emphasized that these noise levels, which are often shown graphically as contours on maps, are not discrete lines that sharply divide louder areas from land largely unaffected by noise. Instead, they are part of a planning tool that depicts the general noise environment around the airport based on typical aviation activities. Areas beyond the 65-dBA DNL can also experience levels of appreciable noise depending upon flight activity or weather conditions. In addition, DNL noise contours may vary from year to year due to fluctuations in operations, funding levels, and other factors. Static run-up operations, such as maintenance and pre/postflight run-ups, were also modeled. A more detailed discussion of static operations at ISO can be found in **Appendix B**.

The prominent features from **Figure 3-4** are the extents of the DNL contours along the extended centerline of Runway 05/23. The 65-dBA DNL contour extends beyond the airport boundary, approximately 0.6 mi to the northeast, 1 mi to the north, and 0.8 mi to the southwest along the runway centerline. The 70-dBA DNL contour extends beyond the airport boundary, approximately 0.2 mi to the northeast and 0.3 mi to the southwest along the runway centerline. The 75-dBA DNL contour is mostly on airport property except some small areas to the west of the airport. Most of the flight operations occur on Runway 05/23. The area within each DNL noise contour for the existing conditions as depicted on **Figure 3-4** are listed in **Table 3-4**.

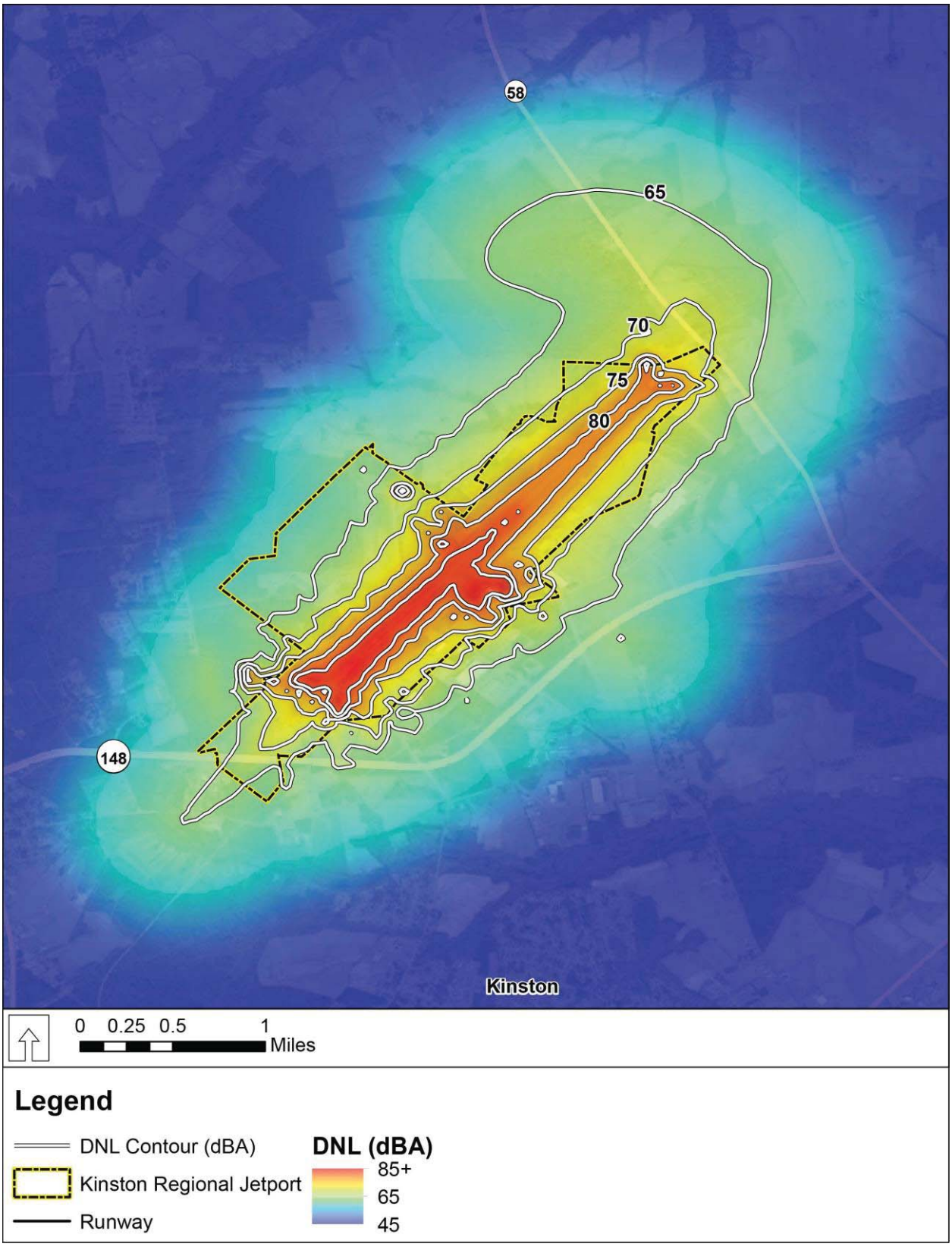


Figure 3-4. Existing Day-Night Average Sound Level Contours at Kinston Regional Jetport.

Table 3-4
Existing Day-Night Average Sound Level Area Affected at Kinston Regional Jetport

Noise Level (dBA DNL)	Area Within Noise Contour (acres)
>65	2154
>70	1009
>75	580
>80	296
>85	111

Notes: Area (on- and off-airport property) was based off the combined AEDT- and NOISEMAP-modeled noise contours and used to calculate the amount of land within each noise contour. The amounts shown are cumulative (i.e., the acreage within the >85-dBA contour is also within all the lower noise level contours).

dBA = A-weighted decibel; DNL = Day-Night Average Sound Level

A number of points of interest (POIs) have been identified in the vicinity of ISO (**Table 3-5**; **Figure 3-5**). These POIs are made up of noise sensitive receptors such as schools and places of worship. **Table 3-5** shows the DNL as a result of aircraft operations at ISO at the 24 POIs for the existing conditions. All 24 POIs are exposed to DNL less than or equal to 55 dBA.

Table 3-5
Existing Day-Night Average Sound Level at Points of Interest at Kinston Regional Jetport

Points of Interest		DNL (dBA)
ID	Description	
C01	Emmanuel Hill Church	<45
C02	St. Mary's Episcopal Church	<45
C03	Present Truth Ministries	<45
C04	Jehovah's Witnesses Kingdom Hall	<45
C05	Immanuel Baptist Church	<45
C06	Holly Hill Church	47
C07	First Free Will Baptist Church	<45
C08	Holy Spirit Catholic Church	46
C09	Jones Shekinah Church	52
C10	Jumping Run Christian Academy	<45
C11	Airy Grove Church	50
C12	Jehovah's Witnesses Kingdom Hall	<45
R01	Kinston-Lenoir Public Library	<45
R02	Caswell Center	<45
R03	Kinston Country Club	<45
R04	Lenoir Memorial Hospital	<45
R05	Practice Tee	47
R06	Cutter Creek Golf Club	<45
R07	Pine Knoll Drive	45
S01	Bethel Christian Academy	45
S02	First Baptist Church Preschool	51
S03	Arendell Parrott Academy	55
S04	Contentnea-Savannah Middle School	<45
S05	North Lenoir High School	<45

Note: POI levels based on the combined AEDT- and NOISEMAP-modeled noise exposures.

dBA = A-weighted decibel; DNL = Day-Night Average Sound Level; POI = point of interest

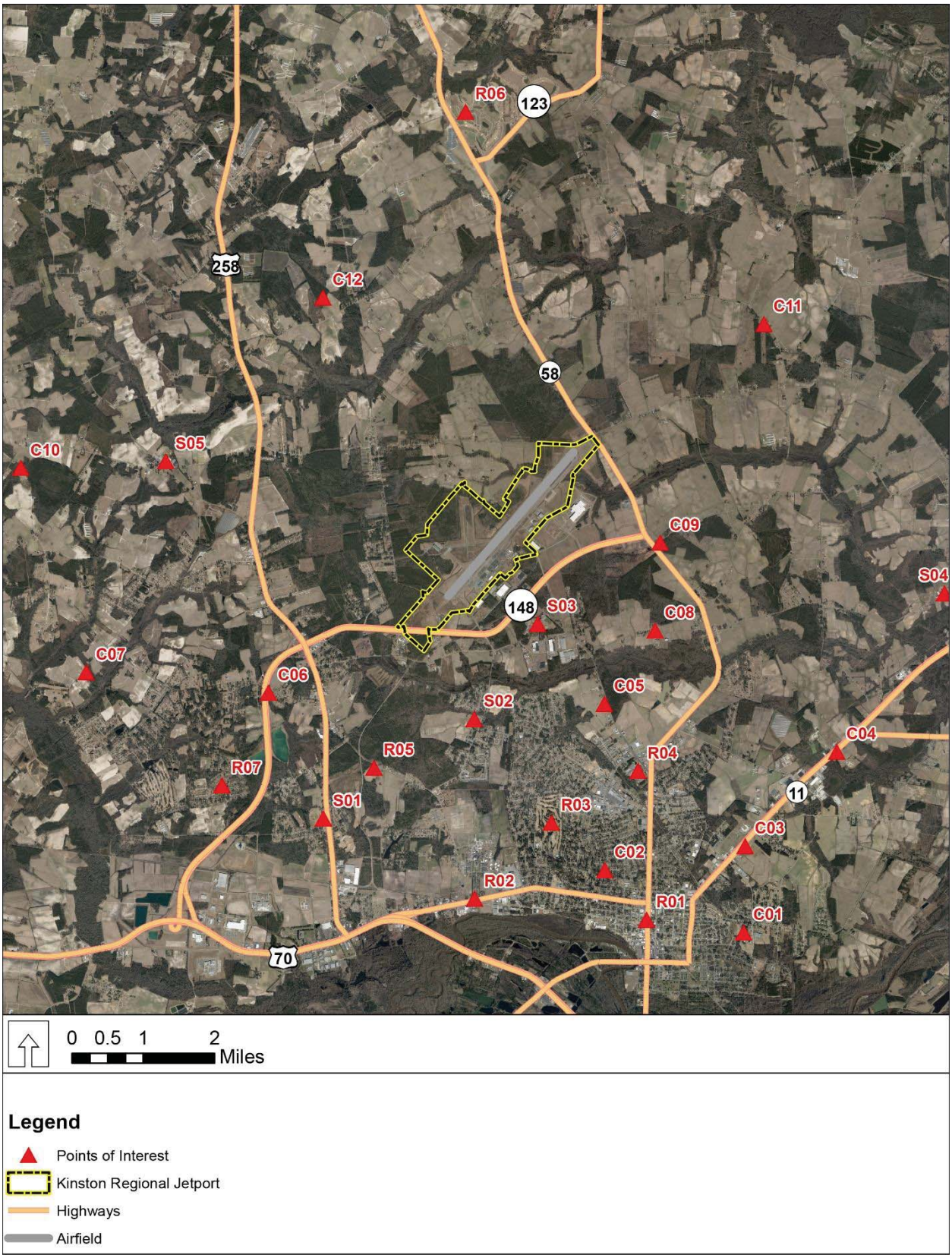


Figure 3-5. Representative Points of Interest at Kinston Regional Jetport.

3.2.3 Existing Conditions – Airspace

The primary special use airspace used by Seymour Johnson AFB-based aircraft are W-122, Burner ATCAA with Hatteras ATCAA/Pamlico MOAs, R-5306A and Core MOA, Echo MOA, Gamecock A MOA, Farmville MOA, R-5314/Phelps MOA, W-177, W-161, and W-72 (see **Figure 1-3**). W-122 receives the highest use, approximately 47 percent, of all airspace operations originating from Seymour Johnson AFB. Only the Echo, Gamecock A, and Farmville MOAs are entirely over land, whereas the Pamlico, Core, and Phelps MOAs are largely over land with some portions of the airspace over water, and the Warning Areas are completely over water. A summary of Seymour Johnson AFB's annual airspace operations is listed in **Table 3-6**.

Table 3-6
Existing Annual Airspace Operations Summary by Seymour Johnson Air Force Base in the Restricted Areas and Military Operations Areas

Airspace	Aircraft		
	F-15E		
	Day	Night	% Use
Warning Area W-122	6,297	0	46.6
Burner ATCAA with Hatteras ATCAA/Pamlico MOAs	786	0	5.8
Restricted Area R-5306A and Core MOA	786	0	5.8
Echo MOA	1,419	0	10.5
Gamecock A MOA	1,047	0	7.7
Farmville MOA	1,055	0	7.8
Restricted Area R-5314/Phelps MOA	1,726	0	12.8
Warning Area W-177	135	0	1.0
Warning Area W-161	135	0	1.0
Warning Area W-72	135	0	1.0
Total Operations	13,521	0	100

ATCAA = Air Traffic Control Assigned Airspace; MOA = Military Operations Area

The existing L_{dnmr} noise levels, calculated using MR_NMAP, from the subsonic aircraft operations for the MOAs and Restricted Areas listed in **Table 3-6** are listed in **Table 3-7**; these operations are only from F-15E aircraft, based at Seymour Johnson AFB, which account for most of the operations in these MOAs and Restricted Areas. F-15E operations are also listed for the Warning Areas in **Table 3-6**; however, the majority of aircraft operations in W-72 and W-122 are from the US Navy, and similarly, the majority of aircraft operations in W-161 and W-177 are from the US Marine Corps and other users (Warning Area operations by these users are not listed in **Table 3-6**); therefore, the noise environments (both subsonic and supersonic) in the Warning Areas are dominated by US Navy aircraft operations (W-72 and W-122) and by US Marine Corps and other users (W-161 and W-177).

Supersonic operations are allowed in W-122, W-177, W-161, and W-72 above 10,000 ft MSL and greater than 15 NM from land. Airspace sorties require aircraft to exceed Mach 1.0 (supersonic) for brief periods of time for approximately 10 percent of total flight time. This is equivalent to less than 5 minutes of supersonic flight activity per sortie.

The BooMap program is used to compute cumulative sonic boom exposure under supersonic air combat training arenas. Supersonic flight is not permitted in any of the MOAs used by aircraft based at Seymour Johnson AFB.

Single event sonic boom levels estimated for supersonic flights in W-122, W-177, W-161, and W-72 are listed in **Table 3-8**. Overpressure (psf) and CSEL (decibels) were estimated directly under the flight path

for the F-15E aircraft at various altitudes and Mach numbers. Overpressure levels estimated for W-122, W-177, W-161, and W-72 range from 5.5 to 1.6 psf depending on the flight conditions.

Table 3-7
Existing Noise Levels in Airspace

Airspace	Noise Level (L_{dnmr} dB)
Burner ATCAA with Hatteras ATCAA/Pamlico MOAs	<45
Restricted Area R-5306A and Core MOA	51
Echo MOA	<45
Gamecock A MOA	45
Farmville MOA	57
Restricted Area R-5314/Phelps MOA	57

ATCAA = Air Traffic Control Assigned Airspace; dB = decibel(s); L_{dnmr} = Onset-Rate Adjusted Monthly Day-Night Average Sound Level; MOA = Military Operations Area

When sonic booms reach the ground, they impact an area that is referred to as a "carpet." The size of the carpet depends on the supersonic flight path and on atmospheric conditions. The width of the boom carpet beneath the aircraft is about 1 mi for each 1,000 ft of altitude (National Aeronautics and Space Administration [NASA], 2017). Sonic booms are loudest near the center of the carpet, having a sharp "bang-bang" sound. Near the edges, they are weak and have a rumbling surrounding like distant thunder. The boom levels listed in **Table 3-8** are the loudest levels computed at the center of the carpet, directly under the flight path, for the constant Mach, level flight conditions indicated. The location of these booms will vary with changing flight paths and weather conditions, so it is unlikely that any given location will experience these undertrack levels more than once over multiple events. Public reaction is expected to occur with overpressures above 1 psf, and in rare instances, damage to structures have occurred at overpressures between 2 and 5 psf (NASA, 2017). People located farther away from the supersonic flight paths, who are still within the primary boom carpet, might also be exposed to levels that may be startling or annoying, but the probability of this decreases the farther away they are from the flight path. People located beyond the edge of the boom carpet are not expected to be exposed to sonic boom although postboom rumbling sounds may be heard.

Table 3-8
Warning Areas W-122, W-177, W-161, and W-72: Sonic Boom Levels Undertrack for Based Aircraft in Level Flight at Mach 1.2 and 1.3

Aircraft	Altitude (feet above mean sea level)			
	10,000	20,000	30,000	35,000
Mach 1.2				
Overpressure (pound[s] per square foot)				
F-15E	5.2	2.8	1.8	1.6
CSEL (decibels)				
F-15E	116	110	107	106
Mach 1.3				
Overpressure (pound[s] per square foot)				
F-15E	5.5	2.9	1.9	1.6
CSEL (decibels)				
F-15E	116	111	107	106

Note: C-weighted Sound Exposure Level (CSEL) – Sound Exposure Level with frequency weighting that places more emphasis on low frequencies below 1,000 hertz

3.3 SAFETY

3.3.1 Definition of the Resource

Safety concerns associated with ground, explosive, and flight activities are considered in this section. Ground safety considers issues associated with ground operations and maintenance activities that support civil and military operations including jet blast/maintenance testing and safety danger. Aircraft maintenance testing occurs in designated safety zones. Ground safety also considers the safety of personnel and facilities on the ground that may be placed at risk from flight operations in the vicinity of the airport and in the airspace. Safety zones, which include Runway Protection Zones (RPZs) and Quantity-Distance (Q-D) arcs, around the airport restrict the public's exposure to areas where there is a higher accident potential. Although ground and flight safety are addressed separately, in the immediate vicinity of the runway, risks associated with safety-of-flight issues are interrelated with ground safety concerns.

Explosives safety relates to the management and safe use of ordnance and munitions. Flight safety considers aircraft flight risks such as midair collision, bird/wildlife-aircraft strike hazard (BASH), and in-flight emergency. Contract ADAIR planes will follow Air Force safety procedures and aircraft specific emergency procedures based on the aircraft design which are produced by the original equipment manufacturer of the aircraft. Basic airmanship procedures also exist for handling any deviations to ATC procedures due to an in-flight emergency; these procedures are defined in AFI 11-202 (Volume 3), *General Flight Rules*, and established aircraft flight manuals. As is specified in Defense Contract Management Agency Instruction (DCMA INST) 8210.1C, *Contractor's Flight and Ground Operations*, contractors would also maintain a Flight Crew Information File, a safety resource for aircrew day-to-day operations which is composed of air and ground operation rules and procedures.

Existing conditions are organized by ground, explosive, and flight safety. The ROI for ISO includes the airfield and areas immediately adjacent to the airport property where ground and explosive safety concerns are described, as well as the airfield and airspaces where flight safety is discussed.

3.3.2 Aircraft Accident and Incident Notification

Per 49 CFR § 830.5, *Notification of Aircraft Accidents, Incidents, and Overdue Aircraft*, the operator of any civil aircraft, or any public aircraft not operated by the Armed Forces or an intelligence agency of the United States, or any foreign aircraft shall immediately, and by the most expeditious means available, notify the nearest National Transportation Safety Board (NTSB) office when an aircraft accident or serious incidents occur or an aircraft is overdue and is believed to have been involved in an accident.

An aircraft *accident*, per 49 CFR § 830.2, is an occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight and all such persons have disembarked, and in which any person suffers death or serious injury, or in which the aircraft receives substantial damage. Key terms used above are defined as follows:

- *Civil aircraft* means any aircraft other than a public aircraft.
- *Operator* means any person who causes or authorizes the operation of an aircraft, such as the owner, lessee, or bailee of an aircraft.
- *Serious injury* means any injury which (1) requires hospitalization for more than 48 hours, commencing within 7 days from the date of the injury was received; (2) results in a fracture of any bone (except simple fractures of fingers, toes, or nose); (3) causes severe hemorrhages, nerve, muscle, or tendon damage; (4) involves any internal organ; or (5) involves second- or third-degree burns, or any burns affecting more than 5 percent of the body surface. *Fatal injury* means any injury which results in death within 30 days of the accident.
- *Substantial damage* means damage or failure which adversely affects the structural strength, performance, or flight characteristics of the aircraft, and which would normally require major repair or replacement of the affected component. Engine failure or damage limited to an engine if only one engine fails or is damaged, bent fairings or cowling, dented skin, small punctured holes in the skin or fabric, ground damage to rotor or propeller blades, and damage to landing

gear, wheels, tires, flaps, engine accessories, brakes, or wingtips are not considered “substantial damage”.

An aircraft *incident*, per 49 CFR § 830.5, is an occurrence other than an accident, associated with the operation of an aircraft, which affects or could affect the safety of operations. Serious incidents that require NTSB notification include

- flight control system malfunction or failure;
- inability of any required flight crewmember to perform normal flight duties as a result of injury or illness;
- failure of any internal turbine engine component that results in the escape of debris other than out the exhaust path;
- in-flight fire;
- aircraft collision in flight;
- damage to property, other than the aircraft, estimated to exceed $25,000 for repair (including materials and labor) or fair market value in the event of total loss, whichever is less;
- for large multiengine aircraft (more than 12,500 pounds maximum certificated takeoff weight),
  - in-flight failure of electrical systems which requires the sustained use of an emergency bus powered by a back-up source such as a battery, auxiliary power unit, or air-driven generator to retain flight control or essential instruments;
  - in-flight failure of hydraulic systems that results in sustained reliance on the sole remaining hydraulic or mechanical system for movement of flight control surfaces;
  - sustained loss of the power or thrust produced by two or more engines; and
  - an evacuation of an aircraft in which an emergency egress system is utilized.
- release of all or a portion of a propeller blade from an aircraft, excluding release caused solely by ground contact;
- a complete loss of information, excluding flickering, from more than 50 percent of an aircraft's cockpit displays known as
  - Electronic Flight Instrument System displays;
  - Engine Indication and Crew Alerting System displays;
  - Electronic Centralized Aircraft Monitor displays; or
  - other displays of this type, which generally include a primary flight display, primary navigation display, and other integrated displays.
- Airborne Collision and Avoidance System resolution advisories issued when an aircraft is being operated on an instrument flight rules flight plan and compliance with the advisory is necessary to avert a substantial risk of collision between two or more aircraft.
- damage to helicopter tail or main rotor blades, including ground damage, that requires major repair or replacement of the blade(s); or
- any event in which an operator, when operating an airplane as an air carrier at a public-use airport on land,
  - lands or departs on a taxiway, incorrect runway, or other area not designed as a runway or
  - experiences a runway incursion that requires the operator or the crew of another aircraft or vehicle to take immediate corrective action to avoid a collision.

3.3.3 Existing Conditions – Kinston Regional Jetport and Airspace

3.3.3.1 Ground Safety

Emergency Response

ISO is an FAA Part 139 Index B (14 CFR § 139.315) airport with Index-C-rated firefighting equipment, indicating that the available firefighting equipment exceeds the requirement for the airport index. ISO has an Emergency Plan as part of the airport’s CFR Part 139 Airport Certification through FAA (ISO, 2013). To obtain the certificate, ISO maintains certain operational and safety standards and provides necessary firefighting and rescue equipment. To ensure airport compliance with CFR Part 139, the FAA conducts certification inspections including an aircraft rescue and firefighting inspection which includes a timed-response drill; review of aircraft rescue and firefighting personnel training records, including annual live-fire

drill and documentation of basic emergency medical care training; and check on equipment and protective clothing for operation, condition, and availability.

Safety Zones

ISO complies with FAA criteria for land areas underneath aircraft approach paths, designated RPZs, as outlined in FAA Advisory Circular 150/5300-13, A*irport Design*. The FAA RPZs preclude any obstructions and development in these areas must adhere to Unified Facilities Criteria 3-260-01, *Airfield and Heliport Planning and Design* (**Figure 3-6**).

3.3.3.2 Explosive Safety

Munitions at ISO are used solely for wildlife population management and include pyrotechnics (bangers and screamers) and ammunition of a 12-gauge shotgun. Storage and handling of these munitions occurs at building GPT2 and involves small quantities of munitions. ISO does not require 29 CFR § 1910.109 compliant explosive storage magazines or separation distances for these assets.

3.3.3.3 Flight Safety

The control tower, located 3,500 ft from the approach end of Runway 05, provides service to all aircraft that utilize ISO. It is a Federal Contract Tower operated by Robinson Aviation and manages the aircraft flying within a range of 4.1 mi of the airport from the surface to 2,600 ft MSL; when aircraft fly beyond this range, control is transferred to Seymour Johnson AFB Radar Approach Control.

The potential for aircraft accidents is a primary public concern with regard to flight safety. Such accidents may occur as a result of midair collisions, collisions with manmade structures or terrain, mechanical failure, weather-related accidents, pilot error, or bird/wildlife-aircraft strike hazards.

Midair Collision

Midair collision accidents involve two or more aircraft coming in contact with each other during flight. Navigation errors, miscommunications, deviations from flight plans, and lack of collision avoidance systems all increase the potential for midair collisions. Aircraft mishaps and their prevention represent a paramount concern for the FAA and airports. **Section 3.3.2** defines civil aircraft accidents (14 CFR § 830.2) and serious incidents (14 CFR § 830.5) that require reporting to the NTSB.

In-Flight Emergency

Each aircraft type has different emergency procedures, based on the aircraft design, which are produced by the original equipment manufacturer of the aircraft. As specified in 14 CFR § 25.1585, operating procedures must be furnished for

1. normal procedures peculiar to the particular type or model encountered in connection with routine operations;
2. nonnormal procedures for malfunction cases and failure conditions involving the use of special systems or the alternative use of regular systems; and
3. emergency procedures for foreseeable but unusual situations in which immediate and precise action by the crew may be expected to substantially reduce the risk of catastrophe.

Bird/Wildlife-Aircraft Strike Hazards

BASH presents a safety concern for aircraft operations because of the potential for damage to aircraft or injury to aircrews or local populations if a crash should occur. Aircraft can encounter birds at nearly all altitudes up to 30,000 ft MSL; however, most birds fly close to the ground. In accordance with their Airport Certification, ISO has developed a Wildlife Hazard Management Plan (WHMP) per 14 CFR § 139.337 to ensure the airport meets or exceeds all FAA wildlife-related safety regulations while insuring the safest possible environment for aircraft, crew, and passengers arriving to and departing from ISO (ISO, 2012b).

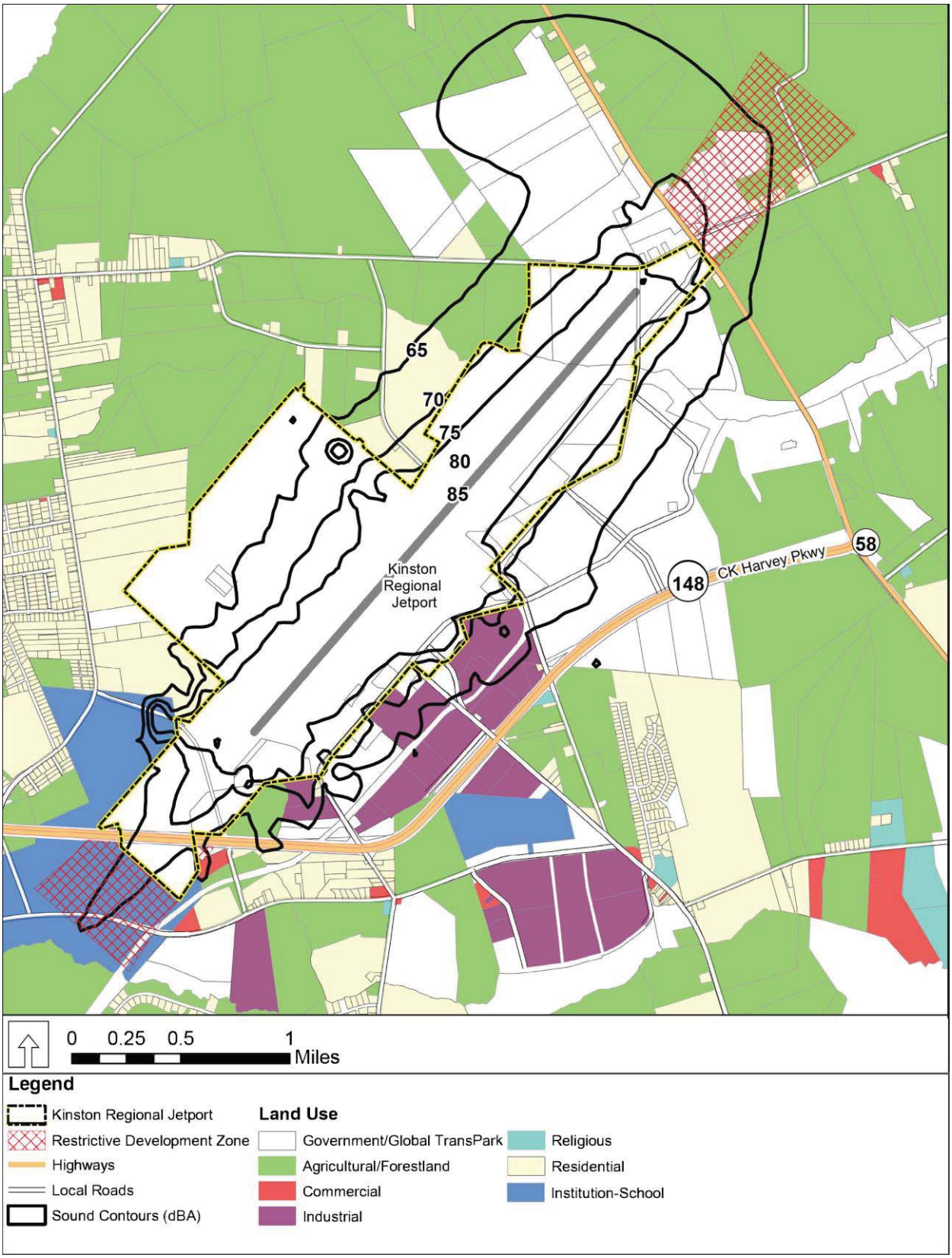


Figure 3-6. Runway Protection Zones around Kinston Regional Jetport.

3.4 AIR QUALITY

3.4.1 Definition of the Resource

Under the authority of the Clean Air Act (CAA) and subsequent regulations, the USEPA has divided the country into geographical regions known as Air Quality Control Regions (AQCRs) to evaluate compliance with the National Ambient Air Quality Standards (NAAQS). The proposed airport to support the Seymour Johnson ADAIR Program falls within the Southern Coastal Plain Intrastate AQCR.

In addition to considering the Southern Coastal Plain Intrastate AQCR, multiple AQCRs were considered which coincide with the primary special use airspace (see **Figure 1-3**). For consideration of potential air quality impacts, it is the volume of air extending up to the mixing height (3,000 ft AGL) and coinciding with the spatial distribution of the ROIs that is considered in this section. The mixing height is the altitude at which the lower atmosphere will undergo mechanical or turbulent mixing, producing a nearly uniform air mass. The height of the mixing level determines the volume of air within which pollutants can disperse. Pollutants that are released above the mixing height typically will not disperse downward and thus will have little or no effect on ground level concentrations of pollutants. Mixing heights at any one location or region can vary by the season and time of day, but for air quality applications, an average mixing height of 3,000 ft AGL is an acceptable default value (40 CFR § 93.153[c][2]).

In the vicinity of the airport, it is the portions of the landing and takeoff and touch and go cycles that occur at or below 3,000 ft that are analyzed. Also considered in the air quality analysis at the airport are the ground support activities that take place on or adjacent to the airport. For the special use airspace (MOAs and Warning Areas), after applying the 3,000-ft criteria there are five training areas that were identified for air quality impact analysis. These areas, their underlying counties, and AQCR regions are listed in **Table 3-9**.

Table 3-9
Airspace Regions of Influence Subject to Air Quality Impact Analysis

Airspace with Operations at ≤3,000 feet AGL/MSL	County	Air Quality Control Region(s)
Farmville MOA	Virginia: Nottoway, Prince Edward, Campbell, Cumberland, Appomattox, Lunenburg, Powhatan, Charlotte, Amelia, Halifax, and Mecklenburg	Central Virginia and State Capital Intrastate
Restricted Area R-5306A and Core MOA	North Carolina: Carteret, Craven, Hyde, and Pamlico	Southern Coastal Plain and Northern Coastal Plain Intrastate
Restricted Area R-5314/ Phelps MOA	North Carolina: Hyde, Dare, Tyrrell, and Washington	Northern Coastal Plain Intrastate
Warning Areas W-177, W-161, W-72	N/A: located beyond the State Seaward boundary (3 nautical miles for the Virginia, North Carolina, and South Carolina coasts). Thus, the Warning Areas outside state jurisdiction with respect to NAAQS compliance.	N/A

Source: 40 CFR Part 81 Subpart C

Note: Airspace listed is applicable to training staged from Kinston Regional Jetport.

AGL = above ground level (applicable to MOAs); MOA = Military Operations Area; MSL = mean sea level (applicable to Warning Areas); N/A = not applicable; NAAQS = National Ambient Air Quality Standards

3.4.1.1 Criteria Pollutants

In accordance with CAA requirements, the air quality in a given region or area is measured by the concentration of various pollutants in the atmosphere. Measurements of these "criteria pollutants" in ambient air are expressed in units of parts per million (ppm) or in units of micrograms per cubic meter. Regional air quality is a result of the types and quantities of atmospheric pollutants and pollutant sources in an area as well as surface topography, the size of the "air basin," and prevailing meteorological conditions.

The CAA directed the USEPA to develop, implement, and enforce strong environmental regulations that would ensure clean and healthy ambient air quality. To protect public health and welfare, the USEPA developed numerical concentration-based standards, NAAQS, for pollutants that have been determined to impact human health and the environment and established both primary and secondary NAAQS under the provisions of the CAA. NAAQS are currently established for six criteria air pollutants: ozone (O_3), carbon monoxide (CO), nitrogen dioxide, sulfur dioxide (SO_2), respirable particulate matter (including particulates equal to or less than 10 microns in diameter (PM_{10}) and particulates equal to or less than 2.5 microns in diameter ($PM_{2.5}$), and lead. The primary NAAQS represent maximum levels of background air pollution that are considered safe, with an adequate margin of safety to protect public health. Secondary NAAQS represent the maximum pollutant concentration necessary to protect vegetation, crops, and other public resources in addition to maintaining visibility standards. The primary and secondary NAAQS are listed in **Table 3-10**.

The criteria pollutant O_3 is not usually emitted directly into the air but is formed in the atmosphere by photochemical reactions involving sunlight and previously emitted pollutants, or "O_3 precursors." These O_3 precursors consist primarily of nitrogen oxides (NO_x) and volatile organic compounds (VOCs) that are directly emitted from a wide range of emissions sources. For this reason, regulatory agencies limit atmospheric O_3 concentrations by controlling VOC pollutants (also identified as reactive organic gases) and NO_x.

The USEPA has recognized that particulate matter emissions can have different health affects depending on particle size and, therefore, developed separate NAAQS for coarse particulate matter (PM_{10}) and fine particulate matter ($PM_{2.5}$). The pollutant $PM_{2.5}$ can be emitted from emission sources directly as very fine dust and/or liquid mist or formed secondarily in the atmosphere as condensable particulate matter, typically forming nitrate and sulfate compounds. Secondary (indirect) emissions vary by region depending upon the predominant emission sources located there and thus which precursors are considered significant for $PM_{2.5}$ formation and identified for ultimate control.

The CAA and USEPA delegated responsibility for ensuring compliance with NAAQS to the states and local agencies. As such, each state must develop air pollutant control programs and promulgate regulations and rules that focus on meeting NAAQS and maintaining healthy ambient air quality levels. When a region or area fails to meet a NAAQS for a pollutant, that region is classified as "nonattainment" for that pollutant. In such cases the affected State must develop a State Implementation Plan (SIP) that is subject to USEPA review and approval. A SIP is a compilation of regulations, strategies, schedules, and enforcement actions designed to move the state into compliance with all NAAQS. Any changes to the compliance schedule or plan (e.g., new regulations, emissions budgets, controls) must be incorporated into the SIP and approved by USEPA.

The CAA required the USEPA draft general conformity regulations that are applicable in nonattainment areas, or in designated maintenance areas (i.e., attainment areas reclassified from a previous nonattainment status, which are required to prepare a maintenance plan for air quality). These regulations are designed to ensure that federal actions do not impede local efforts to achieve or maintain attainment with the NAAQS. The General Conformity Rule and the promulgated regulations found in 40 CFR Part 93 exempt certain federal actions from conformity determinations (e.g., contaminated site cleanup and natural disaster response activities). Other federal actions are assumed to conform if total indirect and direct project emissions are below *de minimis* levels presented in 40 CFR § 93.153. The threshold levels (in tons of pollutant per year) depend upon the nonattainment status that USEPA has assigned to a region. Once the net change in nonattainment pollutants is calculated, the federal agency must compare them to the *de minimis* thresholds.

Table 3-10
National Ambient Air Quality Standards

Pollutant	Standard Value[6]		Standard Type
Carbon Monoxide (CO)			
8-hour average	9 ppm	(10 mg/m^3)	Primary
1-hour average	35 ppm	(40 mg/m^3)	Primary
Nitrogen Dioxide (NO_2)			
Annual arithmetic mean	0.053 ppm	(100 µg/m^3)	Primary and Secondary
1-hour average[1]	0.100 ppm	(188 µg/m^3)	Primary
Ozone (O_3)			
8-hour average[2]	0.070 ppm	(137 µg/m^3)	Primary and Secondary
Lead (Pb)			
3-month average[3]		0.15 µg/m^3	Primary and Secondary
Particulate <10 Micrometers (PM_{10})			
24-hour average[4]		150 µg/m^3	Primary and Secondary
Particulate <2.5 Micrometers ($PM_{2.5}$)			
Annual arithmetic mean[4]		12 µg/m^3	Primary
Annual arithmetic mean[4]		15 µg/m^3	Secondary
24-hour average[4]		35 µg/m^3	Primary and Secondary
Sulfur Dioxide (SO_2)			
1-hour average[5]	0.075 ppm	(196 µg/m^3)	Primary
3-hour average[5]	0.5 ppm	(1,300 µg/m^3)	Secondary

Notes:
1 In February 2010, the USEPA established a new 1-hour standard for NO_2 at a level of 0.100 ppm, based on the 3-year average of the 98th percentile of the yearly distribution concentration, to supplement the then-existing annual standard.
2 In October 2015, the USEPA revised the level of the 8-hour standard to 0.070 ppm, based on the annual 4th highest daily maximum concentration, averaged over 3 years; the regulation became effective on 28 December 2015. The previous (2008) standard of 0.075 ppm remains in effect for some areas. A 1-hour standard no longer exists.
3 In November 2008, USEPA revised the primary lead standard to 0.15 µg/m^3. USEPA revised the averaging time to a rolling 3-month average.
4 In October 2006, USEPA revised the level of the 24-hour $PM_{2.5}$ standard to 35 µg/m^3 and retained the level of the annual $PM_{2.5}$ standard at 15 µg/m^3. In 2012, USEPA split standards for primary & secondary annual $PM_{2.5}$. All are averaged over 3 years, with the 24-hour average determined at the 98th percentile for the 24-hour standard. USEPA retained the 24-hour primary standard and revoked the annual primary standard for PM_{10}.
5 In 2012, the USEPA retained a secondary 3-hour standard, which is not to be exceeded more than once per year. In June 2010, USEPA established a new 1-hour SO_2 standard at a level of 75 parts per billion, based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations.
6 Parenthetical value is an approximately equivalent concentration for NO_2, O_3, and SO_2.

CO = carbon monoxide; NO_x = nitrogen oxide; O_3 = ozone; Pb = lead; $PM_{2.5}$ = particulate matter with a diameter of less than 2.5 micrometers; PM_{10} = particulate matter with a diameter of less than 10 micrometers; SO_2 = sulfur dioxide; µg/m^3 = microgram(s) per cubic meter; mg/m^3 = milligram(s) per cubic meter; ppm = part(s) per million; USEPA = United States Environmental Protection Agency

Title I of the CAA Amendments of 1990 requires the federal government to reduce emissions from cars, trucks, and buses; from consumer products such as hair spray and window-washing compounds; and from ships and barges during the loading and unloading of petroleum products to address urban air pollution problems of O_3, CO, and PM_{10}. Under Title I, the federal government develops the technical guidance that states need to control stationary sources of pollutants. Title I also allows the USEPA to define boundaries of nonattainment areas. Title V of the CAA Amendments of 1990 requires state and local agencies to implement permitting programs for major stationary sources. A major stationary source is a facility (plant, base, activity, etc.) that has the potential to emit more than 100 tons annually of any one criteria air pollutant in an attainment area.

Federal Prevention of Significant Deterioration (PSD) regulations also define air pollutant emissions from proposed major stationary sources or modifications to be “significant” if a proposed project’s net emission increase meets or exceeds the rate of emissions listed in 40 CFR § 52.21(b)(23)(i); or (1) a proposed project

is within 10 kilometers of any Class I area (wilderness area greater than 5,000 ac or national park greater than 6,000 ac).

Although Titles I and V of the Clean Air Act Amendments of 1990 are relevant to ISO, compliance requirements under the relevant regulations would not apply. This is because virtually all of the emissions increase from the proposed ADAIR EIAP would occur from mobile sources which are not governed by Titles I and V; therefore, the requirements originating from Titles I and V are not considered further.

3.4.1.2 Greenhouse Gases

Greenhouse gases (GHGs) are gases that trap heat in the atmosphere. These emissions are generated by both natural processes and human activities. The accumulation of GHGs in the atmosphere helps regulate the earth's temperature and are believed to contribute to global climate change. GHGs include water vapor, carbon dioxide, methane, nitrous oxide, O_3, and several hydrocarbons and chlorofluorocarbons. Each GHG has an estimated global warming potential (GWP), which is a function of its atmospheric lifetime and its ability to absorb and radiate infrared energy emitted from the earth's surface. The GWP of a particular gas provides a relative basis for calculating its carbon dioxide equivalent (CO_2e) or the amount of CO_2e to the emissions of that gas. Carbon dioxide has a GWP of 1 and is, therefore, the standard by which all other GHGs are measured. Potential impacts associated with GHG emissions are discussed in **Section 4.4**.

In North Carolina, the USEPA regulates GHG primarily through a permitting program known as the GHG Tailoring Rule. This rule applies to GHG emissions from stationary sources. As virtually all of the emissions increase from the Proposed Action would occur from mobile sources, this rule would not apply here and is not discussed further.

In addition to the GHG Tailoring Rule in 2009, the USEPA promulgated a rule requiring sources to report their GHG emissions if they emit more than 25,000 metric tons or more of CO_2e per year (40 CFR § 98.2[a][2]). Again, this only applies to stationary sources of emissions.

3.4.2 Existing Conditions – Kinston Regional Jetport

3.4.2.1 Regional Climate

The regional climate of eastern North Carolina, where ISO is located, is classified as humid subtropical which is characterized by mild winters and hot humid summers and no distinct dry season (rainfall occurs year-round). Summers are hot and muggy with frequent thunderstorms. Winters are mild with precipitation from midlatitude cyclones, including occasional nor'easters that can bring heavy rain, high wind, and rarely snow or mixed frozen precipitation (climaTemps, 2019). On average, hurricanes come close enough to influence North Carolina weather about twice a year. Much less frequently, these storms strike a part of the state with sufficient force to do significant damage to both coastal and inland property (North Carolina Climate Office, 2019).

In Kinston, the warmest month in the region is July, with average high and low temperatures of 91 degrees Fahrenheit (°F) and 71°F, respectively. January is the coldest month with an average high temperature of 55°F and average low temperature of 35°F. The wettest month by average precipitation is July with an average of 5.6 inches (in.) of rain. The driest months are October through December with an average of 3.1 in. of precipitation (US Climate Data, 2019).

3.4.2.2 Baseline Air Emissions

The North Carolina Division of Air Quality has adopted the NAAQS, thereby requiring the use of the standards within North Carolina (15A North Carolina Administrative Code 2D Section .0400).

ISO is located in Lenoir County, which is part of the Southern Coastal Plain Intrastate AQCR. Each AQCR has regulatory areas that are designated as an attainment area or nonattainment area for each of the criteria

pollutants depending on whether it meets or fails to meet the NAAQS for the pollutant. Lenoir County has been designated as an attainment/unclassifiable area for all criteria pollutants (40 CFR § 81.334). As a result, General Conformity will not be applicable in the vicinity of the airport.

In addition, ISO does not have an air quality operating permit and is not required to report its stationary or mobile source emissions to the North Carolina Division of Air Quality. There is no facility specific baseline with which to compare projected ADAIR emissions; however, to evaluate potential air quality impacts, projected ADAIR emissions were compared against the General Conformity Rule *de minimis* thresholds as a significance indicator and against the county baseline emissions listed in **Table 3-11**. Note in this case using the General Conformity Rule *de minimis* thresholds as a significance indicator does not trigger a regulatory requirement if exceeded. It provides a sign that an action could be approaching a threshold which would trigger regulatory requirements. The above comparisons are made in **Section 4.4.2.1**.

Table 3-11
Lenoir County Baseline Emissions (tpy)

	CO	NO_X	PM_{10}	$PM_{2.5}$	SO_2	VOC
Stationary Emissions[1]	1,954	445	1,732	394	32	9,897
Mobile Emissions[1,2]	7,673	1,196	77	47	13	763
Total	,9,627	1,641	1,809	441	45	10,660

Notes:
[1] USEPA, 2019a
[2] Includes highway and off-highway vehicles

CO = carbon monoxide; NO_x = nitrogen oxide; $PM_{2.5}$ = particulate matter with a diameter of less than 2.5 micrometers; PM_{10} = particulate matter with a diameter of less than 10 micrometers; SO_2 = sulfur dioxide; tpy = tons per year; USEPA = United States Environmental Protection Agency; VOC = volatile organic compound

3.4.3 Existing Conditions – Airspace

3.4.3.1 Regional Climate

The portion of the special use airspace ROI overland is affected by many of the same weather features that affect the nearby airport. Most of the overland special use airspace falls within areas that are classified as humid subtropical climates. Because the Farmville MOA is located inland and somewhat further north, it is subject to somewhat colder and snowier conditions in the winter when compared to the other airspaces. In contrast, the eastern most portion of the Warning Areas have a somewhat higher risk of tropical cyclone occurrences in the summer and fall.

3.4.3.2 Baseline Emissions

The special use airspace that include a portion of training at or below 3,000 ft AGL (R-5306A and Core MOA, R-5314/Phelps MOA, and Farmville MOA) are located within counties that have been designated as attainment/unclassifiable for all criteria pollutants (40 CFR § 81.334). As a result, General Conformity will not be applicable in these areas. As was described for the airport, emissions were compared against the General Conformity Rule *de minimis* thresholds as a significance indicator and against the county baseline emissions listed in **Table 3-12**.

Table 3-12
Special Use Airspace Baseline Emission Summary (tpy)[1,2]

	CO	NO_X	PM_{10}	$PM_{2.5}$	SO_2	VOC
Restricted Area R-5306A and Core MOA[3]	86,507	10,922	8,298	4,011	1,933	64,967
Restricted Area R-5314/Phelps MOA[4]	53,500	8,650	4,902	1,849	632	55,761
Farmville MOA[5]	140,007	19,572	13,200	5,860	2,565	120,728

Notes:
[1] USEPA, 2019a
[2] Includes stationary and mobile sources
[3] Overlies Carteret, Craven, Hyde, and Pamlico Counties
[4] Overlies Hyde, Dare, Tyrrell, and Washington Counties
[5] MOA overlies the following counties: Nottoway, Prince Edward, Campbell, Cumberland, Appomattox, Lunenburg, Powhatan, Charlotte, Amelia, Halifax, and Mecklenburg

CO = carbon monoxide; MOA = Military Operations Area; NO_x = nitrogen oxide; $PM_{2.5}$ = particulate matter with a diameter of less than 2.5 micrometers; PM_{10} = particulate matter with a diameter of less than 10 micrometers; SO_2 = sulfur dioxide; tpy = tons per year; VOC = volatile organic compound

With respect to W-177, W-161, and W-72, there are no known sources of emissions, and state jurisdiction with respect to meeting NAAQS extends to the state seaward boundary (3 mi). The Warning Areas fall outside the 3-mi boundary; therefore, no baseline analysis was prepared for the offshore jurisdictional waters because there are no surface-based operations proposed for that area that would cause project-related emissions.

Under 40 CFR Part 55, permitting and other air quality requirements apply to facilities beyond state seaward boundaries. Within 25 NM of the state seaward boundary, facilities must comply with the air quality regulations of the nearest onshore area. Beyond 25 NM from the state seaward boundary, facilities are subject to federal requirements including the PSD preconstruction permit program and the Title V operating permit program; however, these programs apply only to stationary sources and thus would not be applicable to the proposed contract ADAIR operations in the Warning Areas.

3.5 BIOLOGICAL RESOURCES

3.5.1 Definition of the Resources

Biological resources include native, nonnative, and invasive plants and animals; sensitive and protected floral and faunal species; and the habitats, such as wetlands, forests, and grasslands, in which they exist. Habitat can be defined as the resources and conditions in an area that support a defined suite of organisms. Below is a description of the primary federal statutes that form the regulatory framework for the evaluation of biological resources.

Invasive plants and animals are not discussed in this section. No location-specific surveys for invasive and nonnative plant species are available for the airport or surrounding lands. There are no activities associated with the Proposed Action that have the potential to affect invasive species. There would be no ground-disturbing activities that have the potential to spread or remove invasive plants on the airport proposed for use or in the special use airspace.

The ROI for biological resources includes the land on and surrounding ISO and the land within the airport noise contours and safety zones (see **Figure 3-6**), as well as the land beneath the special use airspace proposed for contract ADAIR training (see **Figure 1-3**).

Endangered Species Act

The ESA of 1973 (16 U.S.C. § 1531 et seq.) established protection over and conservation of threatened and endangered species and the ecosystems upon which they depend. Sensitive and protected biological

resources include plant and animal species listed as threatened, endangered, or special status by USFWS and NMFS. Under the ESA (16 U.S.C. § 1536), an "endangered species" is defined as any species in danger of extinction throughout all, or a large portion, of its range. A "threatened species" is defined as any species likely to become an endangered species in the foreseeable future. The USFWS maintains a list of species considered to be candidates for possible listing under the ESA. The ESA also allows the designation of geographic areas as critical habitat for threatened or endangered species. Although candidate species receive no statutory protection under the ESA, the USFWS has attempted to advise government agencies, industry, and the public that these species are at risk and may warrant protection under the ESA. Section 9 of the ESA prohibits the take of federally listed species. "Take" as defined under the ESA means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 makes it unlawful for anyone to take migratory birds or their parts, nests, or eggs unless permitted to do so by regulations. Per the MBTA, "take" is defined as "pursue, hunt, shoot, wound, kill, trap, capture, or collect." These regulations are codified at 50 CFR § 10.12. Migratory birds include nearly all species in the United States, with the exception of some upland game birds and nonnative species.

EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*, requires all federal agencies undertaking activities that may negatively impact migratory birds to follow a prescribed set of actions to further implement the MBTA. EO 13186 directs federal agencies to develop a Memorandum of Understanding (MOU) with the USFWS that promotes the conservation of migratory birds. On 5 September 2014, the DOD signed a 5-year MOU with the USFWS. In accordance with the MOU, and to the extent possible as per law and budgetary considerations, EO 13186 encourages agencies to implement a series of conservation measures aimed at reinforcing and strengthening the MBTA.

The National Defense Authorization Act for Fiscal Year 2003 (Public Law 107-314, 116 Stat. 2458) provided the Secretary of the Interior the authority to prescribe regulations to exempt the armed forces from the incidental take of migratory birds during authorized military readiness activities. Congress defined military readiness activities as all training and operations of the US armed forces that relate to combat and the adequate and realistic testing of military equipment, vehicles, weapons, and sensors for proper operation and suitability for combat use.

In December 2017, the US Department of the Interior issued M-Opinion 37050, which concluded that the take of migratory birds from an activity is not prohibited by the MBTA when the underlying purpose of that activity is not the take of a migratory bird. The USFWS interprets the M-Opinion to mean that the MBTA's prohibition on take does not apply when the take of birds, eggs, or nests occurs as a result of an activity, the purpose of which is not to take birds, eggs, or nests.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act of 1940 (16 U.S.C. § 668-668c) prohibits the "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle (*Haliaeetus leucocephalus*) or any golden eagle (*Aquila chrysaetos*), alive or dead, or any part, nest, or egg thereof." "Take" is defined as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb," and "disturb" is defined as "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, injury to an eagle, a decrease in productivity by substantially interfering with the eagle's normal breeding, feeding or sheltering behavior, or nest abandonment by substantially interfering with the eagle's normal breeding, feeding or sheltering behavior." The Bald and Golden Eagle Protection Act also prohibits activities around an active or inactive nest site that could result in an adverse impact on the eagle.

Wetlands

The Clean Water Act (CWA) of 1972 (33 U.S.C. § 1251 et seq.) regulates discharges of pollutants in surface waters of the United States. Section 404 of the CWA establishes a program to regulate the discharge of dredged and fill material into waters of the United States, including wetlands. The United States Army Corps of Engineers defines wetlands as "those areas that are inundated or saturated with ground or surface water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions" (Environmental Laboratory, 1987). The term "waters of the United States" has a broad meaning under the CWA and besides navigable waters, incorporates deep-water aquatic habitats and wetlands. Section 404(b)(1) of the CWA directs the USEPA to develop guidelines for the placement of dredged or fill material (33 U.S.C. § 1341[b]). These guidelines developed by USEPA are known as the "404(b)(1) Guidelines" and are located at 40 CFR Part 230. The stated purpose of the Guidelines is to "restore and maintain the chemical, physical, and biological integrity of waters of the US through the control of discharges of dredged or fill material" (40 CFR § 230.1[a]). Wetlands are an important natural system and habitat because of the diverse biologic and hydrologic functions they perform. These functions include water quality improvement, groundwater recharge and discharge, pollution mitigation, nutrient cycling, wildlife habitat detention, and erosion protection. Wetlands generally include swamps, marshes, bogs, and similar areas (33 CFR Part 328).

Marine Mammal Protection Act

The MMPA of 1972 (16 U.S.C Chapter 31) protects all marine mammals: dugongs (*Dugong dugon*) and manatees (*Trichechus* spp.), cetaceans (dolphins, porpoises, and whales), pinnipeds (seals, sea lions, and walruses), polar bears (*Ursus maritimus*), marine otters (*Lutra felina*), and sea otters (*Enhydra lutris*). The MMPA prohibits the "take" of marine mammals in US waters and by US citizens on the high seas, as well as the importation of marine mammals and marine mammal products into the US. "Take" is defined under the MMPA as "to hunt, harass, capture, or kill" any marine mammal or attempt to do so. NMFS administers the MMPA in protecting dolphins, porpoises, seals, sea lions, and whales. USFWS administers the MMPA for the protection of dugongs, manatees, walruses, otters, and polar bears. The "specified geographic area" requirement and the small numbers provision do not apply to military readiness activities or scientific research activities conducted by or on behalf of the federal government.

Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act of 1976 (16 U.S.C. § 1801 et seq.) and amended by the Sustainable Fisheries Act in 1996, requires the identification and conservation of Essential Fish Habitat. Essential Fish Habitat includes those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. This can include areas that were historically used by fish. Federal agencies are required to consult with NMFS and prepare an Essential Fish Habitat Assessment if potential adverse impacts on Essential Fish Habitat are anticipated from the Proposed Action.

3.5.2 Existing Conditions – Kinston Regional Jetport

The information presented for ISO was primarily derived from the FAA Environmental Impact Statement on the Initial Development of the North Carolina Global TransPark (NCGTP) (FAA, 1997), except where otherwise cited. Data were also gathered from North Carolina Wildlife Resources Commission and USFWS.

3.5.2.1 Regional Biological Setting

Ecoregion Description

Level III Ecoregions are used to describe the ecosystems within the ISO ROI. Level III ecoregion descriptions provide a regional perspective and are more specifically oriented for environmental monitoring, assessment and reporting, and decision-making (Commission for Environmental Cooperation, 1997). Ecoregions are used to describe areas of similar type, quality, and quantity of environmental resources (Griffith et al., 2002b). Ecoregions are assigned hierarchical levels to delineate regions spatially based on

different levels of planning and reporting needs. The ROI for ISO is located within the Level III Southeastern Plains Ecoregion (**Figure 3-7**); a description of this ecoregion is listed in **Table 3-13**. The vegetation and wildlife common within the ISO ROI are described below.

Vegetation and Wildlife

The majority of ISO consists of managed lawns and landscaped areas surrounding industrial development. There are an estimated 370 ac of forest and shrubs on ISO, most of which are disturbed communities. The majority are on the northern and northwestern side of airport property. The forests are dominated by pine (*Pinus* spp.) and pine-hardwood forests, with successional fields also constituting a major part of the property (FAA, 1997).

Wildlife species observed on the airport property include 97 species of birds and 7 species of mammals. Songbirds and perching birds include the American crow (*Corvus brachyrhynchos*), European starling (*Sturnus vulgaris*), red-winged blackbird (*Agelaius phoeniceus*), palm warbler (*Setophaga palmarum*), and chimney swift (*Chaetura pelagica*). Shore birds include killdeer (*Charadrius vociferus*) and the American woodcock (*Scolopax minor*). Other observed birds include Canada geese (*Branta canadensis*), turkey vulture (*Cathartes aura*), and mourning dove (*Zenaida macroura*). Mammals observed include white-tailed deer (*Odocoileus virginianus*), coyote (*Canis latrans*), bobcat (*Lynx rufus*), eastern cottontail rabbit (*Sylvilagus floridanus*), gray fox (*Urocyon cinereoargenteus*), raccoon (*Procyon lotor*), feral cat (*Felis catus*), and feral dog (*Canis lupus familiaris*) (ISO, 2012b).

Threatened and Endangered Species and/or Species of Concern

A list of federal and state listed species that could potentially occur in the ISO ROI was obtained from the USFWS Information for Planning and Consultation website (USFWS, 2020) and the North Carolina Natural Heritage Program (2019). Nine species were identified and include one amphibian, one bird, three fish, one reptile, and three plants. The species and specific status are listed in **Table 3-14**. A complete table of all identified species and a detailed description of federally listed species is in **Appendix D.** Since there were no records of previous threatened and endangered species surveys for ISO, the species identified were based on their occurrence within the county or have been documented near the airport but do not necessarily indicate their presence on airport property. ISO contains a mixture of highly developed uplands with open areas containing vegetated areas that are routinely maintained. There are no documented threatened or endangered species currently nesting, roosting, or living on ISO; however, the possibility exists of an incidental occurrence of a listed species.

3.5.2.2 Wetlands

There are an estimated 305 ac of nonriverine wetlands and 31 ac of riverine wetlands on ISO (FAA, 1997). Nonriverine wetlands are typically characterized as occurring on poorly drained, interstream flats not near streams, rivers, or estuaries, which are seasonally to semipermanently flooded from groundwater discharge, overland runoff, or precipitation (North Carolina Wetland Functional Assessment Team, 2016). The nonriverine wetlands at ISO consist of hardwood wetlands, mixed pine/hardwood wetlands, and scrub-shrub wetlands (FAA, 1997). The riverine wetlands on ISO are defined as the bottomland systems comprised of low-order blackwater streams and include forested wetlands, semipermanently flooded scrub-shrub, hardwood wetlands, seasonally flooded persistent emergent vegetation wetlands, and semipermanently flooded persistent emergent vegetation wetlands. No ISO property is located within a Federal Emergency Management Agency-delineated 100-year floodplain (FAA, 1997).

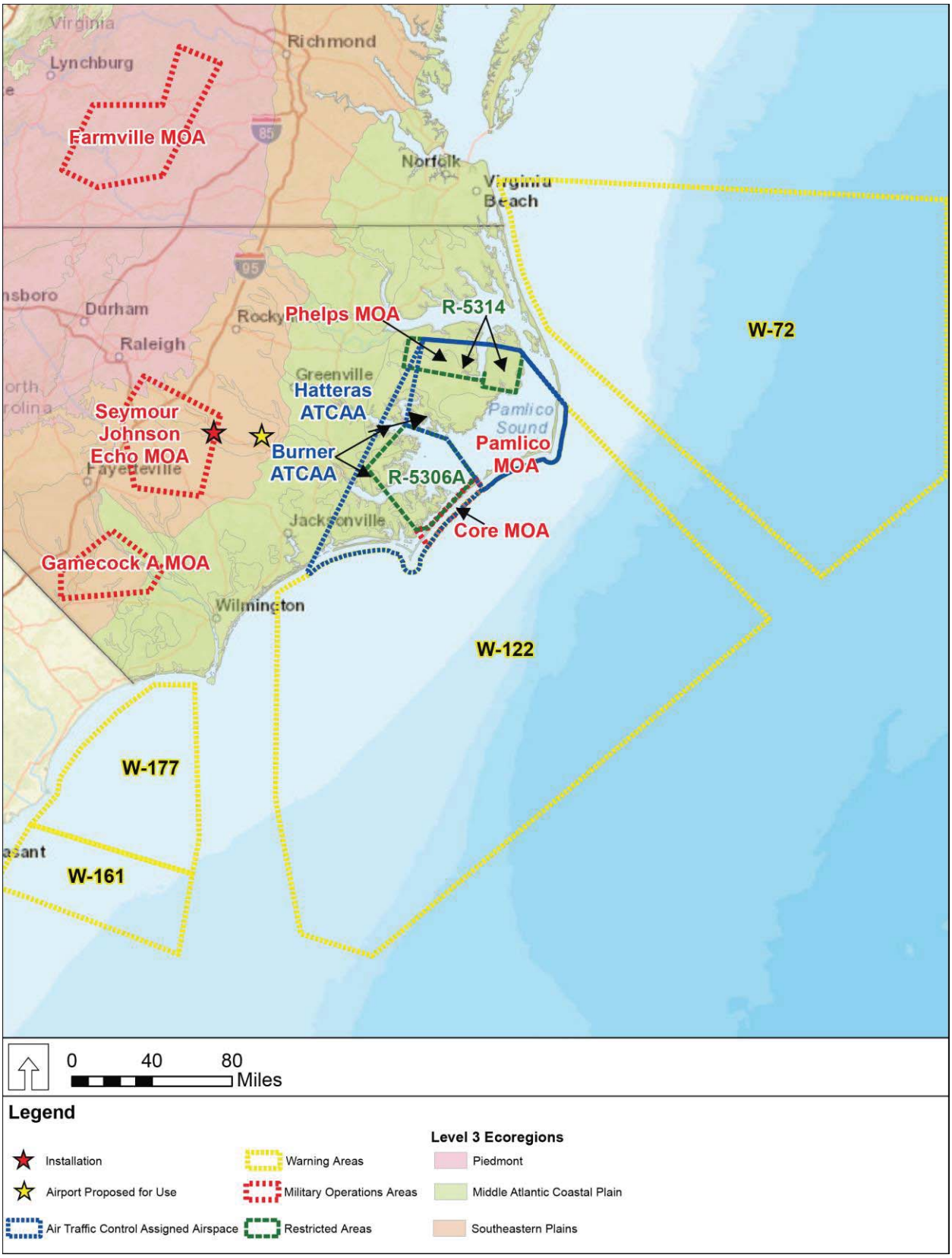


Figure 3-7. Level III Ecoregions within the Regions of Influence.

Table 3-13
Level III Ecoregions within the Regions of Influence

Level III Ecoregion	Airport	Special Use Airspace						Ecoregion Description[1]
	ISO	Burner ATCAA with Hatteras/ Pamlico MOAs	R-5306A and Core MOA	Echo MOA	Gamecock A MOA	Farmville MOA	R-5314/ Phelps MOA	
Piedmont (45)				X		X		Mostly wooded with irregular plains, low rounded hills and ridges, shallow ridges, and scattered monadnocks. This is the transition between the Appalachian mountainous regions in the west and the lower, more level regions of the coastal plain in the east. Once contained large tracts of Oak-Hickory-Pine Forest that was dominated by hickory (*Carya* spp.), shortleaf pine (*Pinus echinata*), loblolly pine (*Pinus taeda*), white oak (*Quercus alba*), and post oak (*Quercus stellata*). Much of the forests were once cultivated following settlement, although many fields have since reverted to pine and hardwoods. Much of this region has been planted in pine or is maintained as pastureland.
Middle Atlantic Coastal Plain (63)		X	X	X	X	X	X	A low, nearly flat plain containing many swamps and marshes. Once dominated by longleaf pine (*Pinus palustris*) in the south and oak-hickory-pine in the north, it is now mixed conifer of loblolly-shortleaf pine, with patches of oak (*Quercus* spp.), sweetgum (*Liquidambar styraciflua*), and cypress (*Taxodium distichum*) occurring near major streams. Areas along the coast consist of low terraces, marshes, dunes, beach ridges, barrier beaches, and beaches. The barrier islands contain maritime forests of live oak (*Quercus virginiana*), sand laurel oak (*Quercus hemisphaerica*), and loblolly pine, with cordgrass (*Spartina* spp.), seashore saltgrass (*Distichlis spicata*), and rushes (Juncaceae) in the coastal marshes and American beachgrass (*Ammophila breviligulata*) and sea oats (*Uniola paniculate*) dominating the dunes.
Southeastern Plains (65)	X			X	X			Once contained Oak-Hickory-Pine Forest dominated by hickory, longleaf pine, shortleaf pine, loblolly pine, white oak, and post oak, and in the northeast, Appalachian Oak Forest dominated by white and red oaks (*Quercus rubra*). Floodplain communities consisted of oaks, red maple (*Acer rubrum*), green ash (*Fraxinus pennsylvanica*), sweetgum, cypress, and tupelo (*Nyssa* spp.). This region is now covered by a mosaic of cropland, pasture, woodland, and forest. Large areas have been planted with pine and agricultural fields.

Sources: Commission for Environmental Cooperation, 2011; Griffith et al., 2002a; Woods et al., 1999

ATCAA = Air Traffic Control Assigned Airspace; ISO = Kinston Regional Jetport; MOA = Military Operations Area

Table 3-14
Federal and State Listed Species with the Potential to be Located on Kinston Regional Jetport

Species	Scientific Name	Federal Status	State Status (North Carolina)
Amphibian			
Neuse River Waterdog	*Necturus lewisi*	P-T	SC
Bird			
Red-cockaded Woodpecker	*Picoides borealis*	E	E
Fish			
Carolina Madtom	*Noturus furiosus*	P-E	T
Least Brook Lamprey	*Lampetra aepyptera*		T
Mimic Shiner	*Notropis volucellus*		T
Plant			
Georgia Indigo-bush	*Amorpha georgiana*		E
Littleleaf Sneezeweed	*Helenium brevifolium*		E
Sensitive Joint-vetch	*Aeschynomene virginica*	T	T
Reptile			
American Alligator	*Alligator mississipiensis*	T-(S/A)	T

Source: USFWS, 2020; North Carolina Natural Heritage Program, 2019

E = Endangered; P = Proposed; S/A = Similar Appearance; SC = Special Concern; T = Threatened

3.5.3 Existing Conditions – Airspace

3.5.3.1 Regional Biological Setting – Overland

Ecoregion Description

The ROI for the overland special use airspace is located over three Level III Ecoregions (see **Figure 3-7**) which are listed in **Table 3-15**. The vegetation and wildlife common beneath the overland special use airspace ROI are described below.

Vegetation and Wildlife

Descriptions of the common vegetation communities in the ROI beneath the overland special use airspace are listed in **Table 3-15**.

Wildlife common in North Carolina include over 90 species of amphibians, over 460 species of birds, 121 mammal species, and over 70 species of reptiles, as well as an abundance of fish and invertebrate species (North Carolina Wildlife Resources Commission, 2015). In Virginia, 85 species of amphibians, 425 bird species, 119 mammal species, and 77 species of reptiles have been documented, along with a large diversity of fish and invertebrate species (Virginia Fish and Wildlife Information Service, 2019). A listing of the wildlife common to these ecoregions was obtained from the Commission for Ecological Cooperation *North American Terrestrial Ecoregions – Level III* (Commission for Environmental Cooperation, 2011). Common mammals that inhabit the three Level III Ecoregions includes black bear (*Ursus americanus*), white-tailed deer, bobcat, gray fox, racoon, eastern cottontail rabbit, eastern gray squirrel, eastern chipmunk (*Tamias striatus*), pine vole (*Microtus pinetorum* ssp.), and swamp rabbit (*Sylvilagus aquaticus*). Birds in these ecoregions include wild turkey, northern bobwhite quail, northern cardinal (*Cardinalis cardinalis*), Carolina wren (*Thryothorus ludovicianus*), wood thrush (*Hylocichla mustelina*), tufted titmouse (*Baeolophus bicolor*), field sparrow (*Spizella pusilla*), prairie warbler (*Setophaga discolor*), and herons and egrets. Some of the common herpetofauna found in these ecoregions are eastern box turtle (*Terrapene carolina*), common garter snake (*Thamnophis sirtalis*), copperhead, and rattlesnake (*Crotalus* spp.). American

alligators (*Alligator mississippiensis*) are also found in the Middle Atlantic Coastal Plain ecoregion in southern North Carolina.

Threatened and Endangered Species and/or Species of Concern

Proposed activities in the overland special use airspace are limited to aircraft overflights where noise and visual cues could cause behavioral changes in birds and mammals. A list of federal and state listed species that could potentially occur in the overland special use airspace was obtained from the USFWS Information for Planning and Consultation website (USFWS, 2020), North Carolina Natural Heritage Program (2019), and Virginia Department of Game and Inland Fisheries (2018). **Table 3-15** provides the federal and state listed species with the potential to be found within the proposed special use airspace. Of the species with the potential to be impacted by the Proposed Action in the overland special use airspace, 17 are federally listed and 1 is proposed for listing. These species include five birds, four fish, three mammals, and six reptile species (see **Table 3-15**). A table with a more detailed breakout of all federally and state listed species and which airspace the species may be located, as well as a description of the federally listed species that may be impacted, is provided in **Appendix D**.

There is designated critical habitat within some of the overland special use airspace proposed for use. There is designated critical habitat for the piping plover (*Charadrius melodus*) within the Burner ATCAA/Hatteras ATCAA/Pamlico MOA, the R-5306A and Core MOA, and the R-5314/Phelps MOA (USFWS, 2019) (**Figure 3-8**). Designated critical habitat for the Atlantic Sturgeon (*Acipenser oxyrinchus oxyrinchus*) is also located in the Burner ATCAA/Hatteras ATCAA/Pamlico MOA, R-5306A and Core MOA, Echo MOA, and Gamecock A MOA (USFWS, 2019).

3.5.3.2 Regional Biological Setting – Offshore

The Warning Areas are over offshore waters off the coasts of Virginia, North Carolina, and South Carolina. The Warning Areas are located in the southern portion of the Mid-Atlantic Bight and the South Atlantic Bight. Water depths extend to over 13,000 ft deep. The ocean areas beneath the Warning Areas include the continental shelf, continental slope, and various submarine canyons. The average depth of the continental shelf is 246 ft and has an approximate gradient of 1:1,000. The continental shelf breaks eastward at the continental slope, which has an approximate gradient of 1:10. The water depth along the continental slope averages between 6,500 and 13,000 ft. Various large submarine canyons dissect the continental slope and become deep sea channels along the continental rise (US Navy, 2009).

Vegetation and Wildlife

General descriptions of the marine species, which includes fish, sea turtles, and marine mammals, that can occur beneath the Warning Areas are provided below.

Plankton. Plankton are organisms that move with the ocean's currents and cannot maintain independent movement against water currents. Plankton include phytoplankton, which are plant-like organisms including algae, zooplankton, which are animals including fish eggs and larvae, and bacterioplankton, which are comprised of bacteria. Phytoplankton are critical to marine food webs. Phytoplankton are most commonly found in surface waters and in nearshore environments where nutrients and sunlight are more plentiful. Phytoplankton concentrations generally decrease with the distance from shore and become less prevalent in the deeper waters of the continental slope.

The eggs and larvae of fish, which comprise a large portion of zooplankton in the marine environment, are typically found in the upper 650 ft of the ocean water column. As fish larvae mature, their motility increases, and they feed on phytoplankton and smaller zooplankton. The combination of phytoplankton and the smaller zooplankton concentrations are critical to supporting fisheries health and abundance (US Navy, 2017).

Table 3-15
Federal and State Listed Species with the Potential to be Affected by Contract Adversary Air Operations in Special Use Airspace

Species	Scientific Name	Federal Status	State Status (NC)	State Status (VA)	ISO	Overland Airspace[1, 2]	Warning Areas[1, 3]
Birds							
Bachman's Sparrow	*Peucaea aestivalis (=Aimophila aestivalis)*			T		X	
Bald Eagle	*Haliaeetus leucocephalus*		T			X	
Bermuda petrel	*Pterodroma cahow*	E					X
Caspian Tern	*Hydroprogne caspia*		T			X	
Common Tern	*Sterna hirundo*		E			X	
Eastern Black Rail	*Laterallus jamaicensis* ssp. *jamaicensis*	P-T	SC	E		X	X
Eastern Woodrat	*Neotoma floridana floridana*		T			X	
Gull-billed Tern	*Gelochelidon nilotica*		T	T		X	
Henslow's Sparrow	*Ammodramus henslowii*		E	T		X	
Loggerhead Shrike	*Lanius ludovicianus*			T		X	
Migrant Loggerhead Shrike	*Lanius ludovicianus migrans*			T		X	
Peregrine Falcon	*Falco peregrinus*		E	T		X	
Piping Plover	*Charadrius melodus*	T	T	T		X	X
Red Knot	*Calidris canutus rufa*	T	T	T		X[5]	X
Red-cockaded Woodpecker	*Picoides borealis*	E	E	E	X	X	
Roseate Tern	*Sterna dougallii dougallii*		E	E		X[4]	X
Wayne's Black-throated Green Warbler	*Setophaga virens waynei*		E			X	
Wood Stork	*Mycteria americana*	T	T			X	
Fish							
Atlantic Sturgeon	*Acipenser oxyrinchus oxyrinchus*	E	E	E		X[5]	X
Carolina Darter	*Etheostoma collis*			T		X	
Carolina madtom	*Noturus furiosus*	P-E	T		X	X	
Carolina Redhorse	*Moxostoma* sp. 3 *(*syn. *Moxostoma* sp. *cf. erythrurum)*		T			X[4]	
Giant manta ray	*Manta birostris*	T					X

Table 3-15
Federal and State Listed Species with the Potential to be Affected by Contract Adversary Air Operations in Special Use Airspace

Species	Scientific Name	Federal Status	State Status (NC)	State Status (VA)	ISO	Overland Airspace[1, 2]	Warning Areas[1, 3]
Least Brook Lamprey	*Lampetra aepyptera*		T		X	X	
Mimic Shiner	*Notropis volucellus*		T		X	X	
Oceanic whitetip shark	*Carcharhinus longimanus*	T					X
Orangefin Madtom	*Noturus gilberti*			T		X	
Roanoke Log Perch	*Percina rex*	E	E			X	
Short nose sturgeon	*Acipenser brevirostrum*	E	E	E		X	X
Whitemouth Shiner	*Notropis alborus*			T		X	
Mammals							
Blue whale	*Balaenoptera musculus*	E		E			X
Eastern Big-eared Bat	*Corynorhinus rafinesquii macrotis*			E		X	
Fin whale	*Balaenoptera physalus*	E	E	E			X
Gray Bat	*Myotis grisescens*	E	E	E		X	
Little brown bat	*Myotis lucifugus*		E			X	
North Atlantic right whale	*Eubalaena glacialis*	E	E	E			X[5]
Northern Long -eared bat	*Myotis septentrionalis*	T	T	T		X	
Rafinesque's Big-eared Bat	*Corynorhinus rafinesquii rafinesquii*		T			X	
Red wolf	*Canis rufus*	EX	T			X	
Sei whale	*Balaenoptera borealis*	E		E			X
Sperm whale	*Physeter catodon (= macrocephalus)*	E	E	E			X
Tricolored bat (Eastern pipistrelle)	*Perimyotis subflavus*		E			X	
West Indian Manatee	*Trichechus manatus*	T	T	E		X	
Reptiles							
American alligator	*Alligator mississipiensis*	T (S/A)	T		X	X	
Canebrake Rattlesnake	*Crotalus horridus* (Coastal Plain population of timber rattlesnake)			T		X	
Chicken Turtle	*Deirochelys reticularia*			E		X	
Eastern Coralsnake	*Micrurus fulvius fulvius*		E			X	

Table 3-15
Federal and State Listed Species with the Potential to be Affected by Contract Adversary Air Operations in Special Use Airspace

Species	Scientific Name	Federal Status	State Status (NC)	State Status (VA)	ISO	Overland Airspace[1, 2]	Warning Areas[1, 3]
Eastern Diamondback Rattlesnake	*Crotalus adamanteus*		E			X	
Green Sea Turtle	*Chelonia mydas*	T	T	T		X	X
Hawksbill Sea Turtle	*Eretmochelys imbricata imbricata*	E	E	E		X	X
Kemp's Ridley Sea Turtle	*Lepidochelys kempii*	E	E	E		X	X
Leatherback Sea Turtle	*Dermochelys coriacea*	E	E	E		X	X
Loggerhead Sea Turtle	*Caretta caretta*	T	T	T		X[5]	X[5]
Northern Pinesnake	*Pituophis melanoleucus melanoleucus*		T			X	
Southern Hognose Snake	*Heterodon simus*		T			X	

Sources: USFWS, 2020; NOAA, 2020a, 2020b; North Carolina Natural Heritage Program, 2019; Virginia Department of Game and Inland Fisheries, 2018

Notes:
[1] Airspace located in one or more of the proposed overland special use airspace.
[2] Airspace includes the Burner ATCAA with Hatteras ATCAA/Pamlico MOAs; Restricted Area R-5306A and Core MOA; Echo MOA; Gamecock A MOA; Farmville MOA; and Restricted Area R-5314/Phelps MOA.
[3] Airspace includes the Warning Areas W-122, W-177, W-161, and W-72.
[4] All recorded occurrences in the county are either extirpated, have not been found in recent surveys, or have not been surveyed recently enough to be confident they are still present.
[5] Designated Critical Habitat for the listed species is also located within the special use airspace.

ADAIR = adversary air; ATCAA= Air Traffic Control Assigned Airspace; E=Endangered; EX = Experimental Population; ISO = Kinston Regional Jetport; MOA = Military Operations Area ; NC = North Carolina; P = Proposed; S/A=Similar Appearance, SC = Special Concern; T = Threatened; VA = Virginia

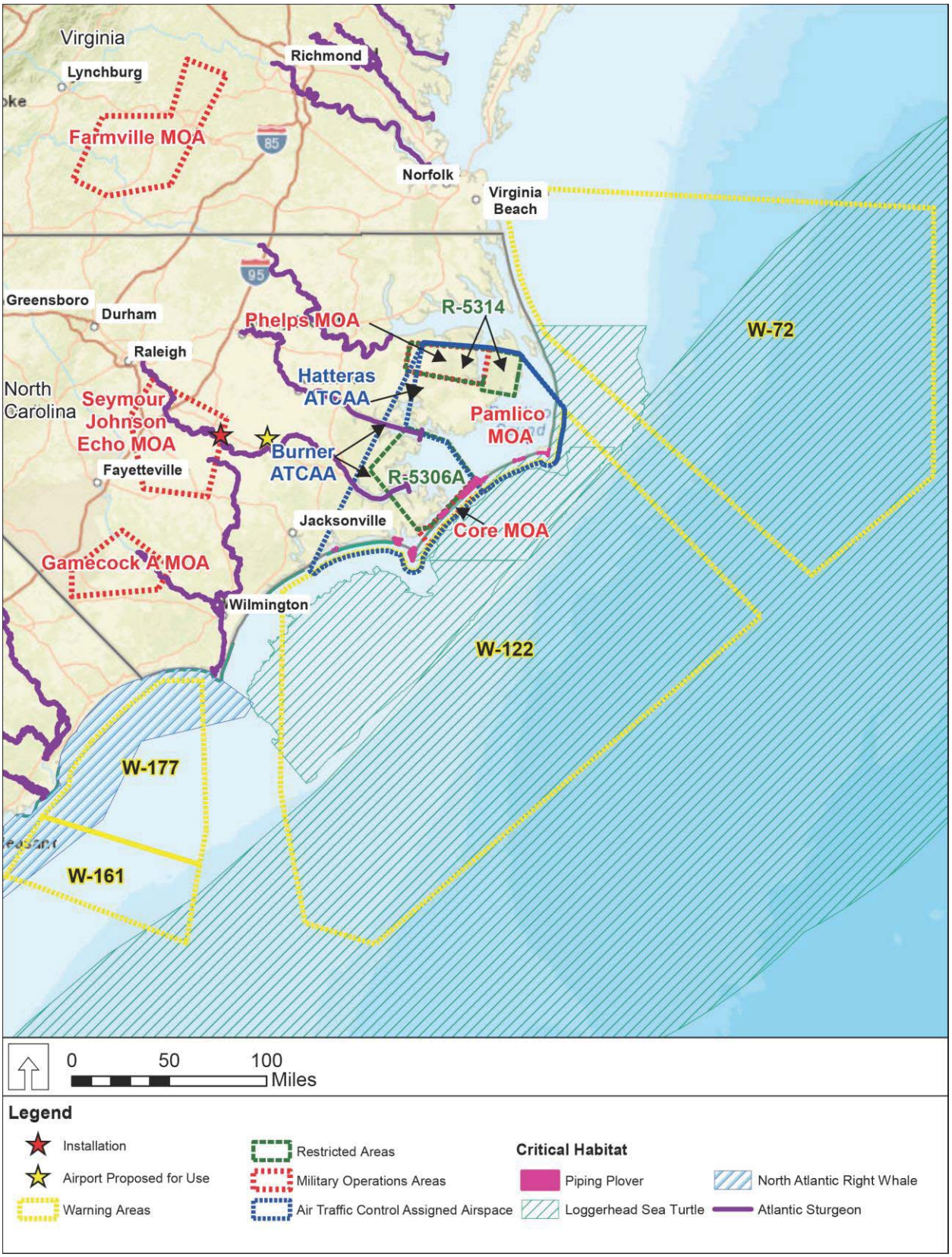


Figure 3-8. Designated Critical Habitat within Special Use Airspace Proposed for Use.

Benthic Organisms. Benthic organisms are bottom-dwelling animals that live on and within the marine sediments. These include crustaceans, echinoderms, anthozoans, annelids, mollusks, and ground fish. Some benthic organisms burrow into soft bottoms while other attach themselves to hard structure located on the ocean floor. Most of the Warning Areas are comprised of soft bottoms and the benthic organisms present in these areas include polychaete and archiannellid worms, bivalves, amphipods, and asteroids (US Navy, 2017). Hard bottom structure in the Warning Areas includes rock outcrops, hard structure from fossil remains, artificial reefs, and shipwrecks that could support benthic invertebrates, such as bryozoans, hard and soft corals, hydroids, anemones, encrusting algae, and sponges. These hard structure areas also support foraging sea turtles and commercial/recreational fishes. Within the Warning Areas, there are isolated patches of temperate soft and hard corals, hydroids, zoanthids, and sponges that colonize rock outcroppings, artificial reefs, and shipwrecks. The southern portion of the Warning Areas has greater concentrations of midshelf and deep-water corals and sponges due to the warmer water temperatures and greater area of hard structure (US Navy, 2009).

Fish. Fish species vary greatly with depth of water, salinity, distance from shore, clarity of the water, availability of structure, and availability of prey. The upper 650 ft of the ocean is the epipelagic zone where there is sufficient sunlight penetration to support phytoplankton while the portion of the ocean's water column between 650 and 3,200 ft is the mesopelagic zone where light penetration is minimal. Sunlight does not penetrate below the mesopelagic zone (Moyle and Cech, 2004). Most fish in the ocean occur in the epipelagic zone and those associated with the nearshore environment are the most commercially valuable. Fish species of greatest interest in the nearshore environment include gobies (Gobiidae), drums (Sciaenidae), seabasses (Serranidae), groupers (Epinephelidae), snappers (Lutjanidae), and sculpins (Cottidae) associated with hard bottom habitat and white flounder (Bothidae and Paralichthyidae) and stingrays (Dasyatidae) associated with soft bottom habitat. Tunas (Scombridae), salmon (Salmonidae), billfishes and swordfishes (Xiphiidae), sharks (Carcharhinidae), sauries (Scomberesocidae), and ocean sunfish (Molidae) are ocean epipelagic fish that could occur beneath the Warning Areas (US Navy, 2017).

Marine Mammals. There are 33 cetacean species and three pinniped species that could occur within the Warning Areas (**Table 3-16**). Some cetacean species are resident year-round while others occur seasonally as they migrate through the area. All three pinniped species would be unlikely to occur beneath the Warning Areas but could be rare visitors to the western (shallower) portions of the Warning Areas in winter and spring. Several of the whales are federally listed and are described further below and in **Appendix D**.

Sea Turtles. There are five species of sea turtles that could occur within the Warning Areas in include green sea turtle (*Chelonia mydas*), hawksbill sea turtle (*Eretmochelys imbricata imbricate*), Kemp's ridley sea turtle (*Lepidochelys kempii*), leatherback sea turtle (*Dermochelys coriacea*), and loggerhead sea turtle (*Caretta caretta*). All these species are listed under the ESA and are discussed below and in **Appendix D**.

Threatened and Endangered Species and/or Species of Concern

Proposed activities in the Warning Areas are limited to aircraft overflights where noise and visual cues could cause behavioral changes in birds, mammals, and sea turtles, as well as the deposition of chaff and flare constituents and components that may impact birds, fish, marine mammals, and sea turtles. A list of species that may occur beneath the Warning Areas was obtained from the National Oceanic and Atmospheric Administration (NOAA) Fisheries, Southeast Region website (NOAA, 2020b) and Greater Atlantic Region website (NOAA, 2020a). **Table 3-15** provides the federal and state listed species with the potential to be found beneath the proposed Warning Areas. Of the species with the potential to be impacted by the Proposed Action in the Warning Areas, 17 are federally listed and 1 is proposed for listing. These species include four birds, four fish, five marine mammals, and five reptile species (see **Table 3-15**). A table with a more detailed breakout of all federally and state listed species and which Warning Areas the species may be located, as well as a description of the federally listed species that may be impacted, is provided in **Appendix D**.

There is designated critical habitat in the proposed special use airspace. Designated critical habitat for the loggerhead sea turtle (*Caretta caretta*) is located beneath W-72, W-122, and W-161 (USFWS, 2019) (see **Figure 3-8**). There is also designated critical habitat for the North Atlantic right whale (*Eubalaena glacialis*) beneath W-177 and W-161 (NOAA, 2020b).

Table 3-16
Marine Mammals with the Potential to Occur in Warning Areas

Common Name	Scientific Name	Occurrence in the Warning Areas
Cetaceans		
North Atlantic right whale	*Eubalaena glacialis*	Occurs during fall, winter, and spring, with occasional summer sightings
Humpback whale	*Megaptera novaeangliae*	Occurs during migration in the fall, winter, and spring
Minke whale	*Balaenoptera acutorostrata*	Occurs in waters over the continental shelf year-round
Bryde's whale	*Balaenoptera brydei*	Occurs year-round
Sei whale	*Balaenoptera boreali*	Occurs in deep waters year-round
Finback whale	*Balaenoptera physalus*	Occurs year-round and is the most commonly sighted large whale in the winter in the Warning Areas
Blue whale	*Balaenoptera musculus*	May occur at any time of the year but less frequent in summer
Sperm whale	*Physeter macrocephalus*	Occurs year-round in deep waters
Pygmy sperm whale	*Kogia breviceps*	Occurs year-round
Dwarf sperm whale	*Kogia sima*	Occurs year-round
Cuvier's beaked whale	*Ziphius cavirostris*	Occurs over the continental slope year-round
True's beaked whale	*Mesoplodon mirus*	Occurs over the continental slope year-round
Gervais' beaked whale	*Mesoplodon europaeus*	Occurs over the continental slope year-round
Sowerby's beaked whale	*Mesoplodon bidens*	Occurs over the continental slope year-round
Blainville's beaked whale	*Mesoplodon densirostris*	Occurs over the continental slope year-round
Rough-toothed dolphin	*Steno bredanensis*	Occurs in waters over the continental slope year-round
Bottlenose dolphin	*Tursiops truncatus*	Occurs in waters over the continental shelf year-round
Pantropical spotted dolphin	*Stenella attenuata*	Occurs in waters over the continental slope year-round
Atlantic spotted dolphin	*Stenella frontalis*	Year-round occurrences
Spinner dolphin	*Stenella longirostris*	Occurs in deep warm waters year-round
Clymene dolphin	*Stenella clymene*	Occurs year-round in the deep warmer waters
Striped dolphin	*Stenella coeruleoalba*	Occurs in waters over the continental slope from the continental break eastward year-round
Common dolphin	*Delphinus delphis*	Occurs in waters over the continental shelf year-round
Fraser's dolphin	*Lagenodelphis hosei*	Likely rare; however, there is the potential to occur year-round
Atlantic white-sided dolphin	*Lagenorhynchus acutus*	Primarily in waters over the continental shelf and occurs year-round
Risso's dolphin	*Grampus griseus*	Occurs along the continental shelf break year-round
Melon-headed whale	*Peponocephala electra*	Occurs in deep warm waters over the continental shelf year-round
Pygmy killer whale	*Feresa attenuata*	Occurs in waters over the continental slope year-round
False killer whale	*Pseudorca crassidens*	Occurs in warm waters off of the continental shelf year-round
Killer whale	*Orcinus orca*	Occurs year-round
Long-finned pilot whale	*Globicephala melas*	Occurs year-round

Table 3-16
Marine Mammals with the Potential to Occur in Warning Areas

Common Name	Scientific Name	Occurrence in the Warning Areas
Short-finned pilot whale	*Globicephala macrorhynchus*	Occurs year-round
Harbor porpoise	*Phocoena phocoena*	Potential to occur in waters over the continental shelf during fall, winter, and spring
Pinnipeds		
Harbor seal	*Phoca vitulina*	Rare occurrences possible in the waters along the western edge of the Warning Areas
Gray seal	*Halichoerus grypus*	Potential to occur in waters along the western edge of the Warning Areas in winter and spring
Harp seal	*Pagophilus groenlandicus*	Potential to occur in waters along the western edge of the Warning Areas in winter and spring

Sources: US Navy, 2009; US Navy, 2017; NMFS, 2018

3.5.3.3 Wetlands

Under the Proposed Action, there would be no ground-disturbing activities beneath the special use airspace proposed for use. Similarly, the nontoxic defensive countermeasures described in **Section 2.1.7** are not likely to adversely affect water resources under the airspace. As such, wetlands are not carried forward for detailed analysis.

3.6 LAND USE

3.6.1 Definition of the Resource

The term “land use” refers to real property classifications that indicate either natural conditions or the types of human activity occurring on a parcel. In many cases, land use descriptions are codified in local zoning laws; however, no nationally recognized convention or uniform terminology has been adopted for describing land use categories. As a result, the meanings of various land use descriptions, labels, and definitions vary among jurisdictions. Land use designations vary per municipality but often include government, agriculture, institutional/industrial, utilities, multifamily residential, single family residential, conservation, aviation, and open space.

The location(s) and extent of proposed action is evaluated for the potential impacts on project sites and adjacent land uses. The foremost factor affecting a proposed action in terms of land use is its compliance with applicable land use planning and zoning regulations. Other relevant factors include existing land use at the project site, the types of land use on adjacent properties and their proximity to a proposed action, the duration of a proposed activity, and its “permanence.” The ROI for land use is the land surrounding the airport proposed for use and the land that is within the airport noise contours. The ROI for land use also includes the land beneath the special use airspace (Burner ATCAA with Hatteras ATCAA/Pamlico MOAs, R-5306A and Core MOA, Echo MOA, Gamecock A MOA, Farmville MOA, R-5314/Phelps MOA). Some of the airspace includes Warning Areas (W-122, W-177, W-161, and W-72), which are over water and as such, no land use is associated with the Warning Areas.

Coastal Zone Management Act

The coastal zone refers to coastal waters and the adjacent shorelines, including islands, transition and intertidal areas, salt marshes, wetlands, and beaches, extending to the outer limit of state title and ownership under the Submerged Lands Act (i.e., 3 NM). The NOAA oversees the Coastal Zone Management Program for the federal government. Coastal areas in the United States receive special land use protections through the federal Coastal Zone Management Program. Authorized by the Coastal Zone

Management Act (CZMA) of 1972 (16 USC § 1451 et seq., as amended), this federal program addresses the coastal issues of the United States through a voluntary partnership among the federal government and the coastal and Great Lakes states and territories. The program's purpose is to protect, restore, and responsibly develop the nation's diverse coastal communities and resources.

Section 307 of the CZMA provides states with the authority to offer input in federal agency decision making for activities potentially affecting coastal uses or resources. This federal consistency provision provides authority to the states that would not otherwise be authorized through other federal programs. Section 307 of the CZMA requires that federal actions that have reasonably foreseeable impacts on any coastal use or natural resources of the coastal zone be consistent with the enforceable policies of a state's approved coastal management program. Federal agency activities must be consistent with the state's coastal management program to the maximum extent practicable.

The North Carolina Coastal Zone Management Program is a cooperative program between local and state agencies to protect, conserve, and manage North Carolina's coastal resources through an integrated program of planning, permitting, education, and research. The program is managed under the NCDEQ, Division of Coastal Management. Twenty coastal counties within North Carolina fall under North Carolina's Coastal Zone Management Program, of which seven of those counties lie beneath special use airspace proposed for use. Projects that fall within any of the 20 counties, meet the definition of "development" under the program, or are located in an Area of Environmental Concern are required to obtain a Coastal Area Management Act permit. "Development" is defined under Coastal Area Management Act as activity within an area of environmental concern requiring construction activities such as dredging, filling, dumping, removal of soils and minerals, bulkheading, clearing or altering land and sand dunes, alteration of shore, bank of bottom of water bodies, or placement of a floating structure in an area of environmental concern. While the Proposed Action is not anticipated to affect North Carolina coastal resources, a consistency determination was submitted relative to the special use airspace ROI. The North Carolina Division of Coastal Management concurred that the Proposed Action is consistent with the North Carolina Coastal Zone Management Program. This correspondence is included in **Appendix A**.

The Virginia Coastal Zone Management Program is directed by a network of state agencies and local governments that administer enforceable laws, regulations, and policies that protect Virginia's coastal resources. These include tidal and nontidal wetlands, fisheries, subaqueous lands, dunes and beaches, point source air pollution, point source water pollution, nonpoint source water pollution, shoreline sanitation, and coastal lands. Virginia's coastal zone includes all of Virginia's Atlantic Coast watershed. Parts of the Chesapeake Bay and Albemarle-Pamlico Sound watersheds, four tidal rivers (the Potomac, Rappahannock, York, and James), and all waters within and out to the 3-mi Territorial Sea boundary. A CZMA consistency determination for Virginia was submitted to the VDEQ Office of Environmental Impact Review determining the Proposed Action would be consistent with the Virginia Coastal Zone Management Program. The VDEQ concurred that the Proposed Action is consistent to the maximum extent practicable. This correspondence is included in **Appendix A**.

In addition to the land use categories identified above, sensitive lands are considered in the evaluation as well. Sensitive lands include those intended to preserve natural or cultural resources, contain recreational opportunities and public access, or provide for the management of public lands. The ROI for sensitive lands includes land within the boundaries of the overland special use airspace proposed for use (**Figure 1-3**).

Federal Aviation Administration Runway Protection Zones

The FAA RPZs are trapezoidal areas at the end of the runway that serve to protect people and property in the event of an emergency. Incompatible land use includes buildings and structures, recreational land uses, transportation facilities, fuel and hazardous material (HAZMAT) storage facilities, wastewater treatment facilities, and aboveground utility infrastructure. Compatible land use, such as open space and conservation lands within the RPZ is necessary to maintain the protection of people and property and to ensure safety. Airport sponsors are required to mitigate or remove existing incompatible land uses and to consult the National Airport Planning and Environmental Division, APP-400 for new or modified land uses within the RPZ (FAA, 2012).

3.6.2 Existing Conditions – Kinston Regional Jetport

ISO, located within the NCGTP's 11,500-ft runway hosts general, commercial, and military traffic (NCGTPA, 2017). The jetport is anchored by a 26,000-ft^2 terminal and located 3 mi from downtown Kinston, North Carolina, approximately halfway between Raleigh and North Carolina's coastline (see **Figure 2-1**).
Land use within the ISO noise contours accounts for approximately 1,255 ac (**Table 3-17**) and primarily within the 65- and 70-dBA DNL noise contours. Most of this land (48 percent [604 ac]) is classified as government, which represents the NCGTP under the North Carolina Air Cargo Airport Authority. Agriculture comprise the next largest land use percentages at 18 percent (229 ac). Approximately 15 percent (193 ac) of incompatible lands designated as residential currently exist within the ISO noise contours. Approximately 12 percent (147 ac) of the land use represents industrial land uses. The remaining land use is categorized as institution, commercial, utility, and forestland, collectively at approximately 6.3 percent (80.5 ac) of the total land use within the jetport noise contours.

A total of 254.5 ac of land are within the boundaries of the ISO RPZ. The agriculture land use category comprises the most acreage (39 percent [99 ac]). Government-NCGTP and Institution land use categories within the ISO RPZ represent 25 percent (64.7 ac) and 32 percent (83 ac), respectively. Existing incompatible land uses within the RPZ boundaries include residential 2.5 percent (6.5 ac) and utility 0.5 percent (1.25 ac).

Table 3-17
Off-Airport Land use within Kinston Regional Jetport Existing Noise Contours

Land Use Description	Acres Within Noise Contours						Percent of Total
	65-dBA DNL	70-dBA DNL	75-dBA DNL	80-dBA DNL	85-dBA DNL	Total	
Government-NCGTP	526.6	74.6	2.7	0.6	0	604.5	50
Agriculture	222.5	6.7	0	0	0	229.2	19
Industrial	69.8	77.4	0	0	0	147.2	12.2
Institution	35.2	8.0	3.7	0.2	0	47.1	3.9
Commercial-Hospital	1.7	0	0	0	0	1.7	0.1
Utility	2.8	1.9	0	0	0	4.7	0.4
Forestland	27.1	0	0	0	0	27.1	2.2
Residential	115	27.4	4.9	0	0	147.3	12.2
Total	**1,000.7**	**196.0**	**11.3**	**0.8**	**0**	**1,208.8**	**100**

Source: Lenoir County zoning data provided by Wayland Humphry, Geographic Information System Coordinator, Lenoir County, 17 December 2019

dBA = A-weighted decibel; DNL = Day-Night Average Sound Level; NCGTP = North Carolina Global TransPark

3.6.3 Existing Conditions – Airspace

Land use beneath the airspace proposed for contract ADAIR is primarily rural with incorporated and unincorporated population centers. While no major metropolitan areas are located beneath the airspace proposed for use, population centers are listed in **Table 3-18** by county and identified as either incorporated or unincorporated. Sensitive lands beneath the proposed airspace include portions of Cape Lookout National Seashore, Cape Hatteras National Seashore, Alligator River National Wildlife Refuge, Pocosin Lakes National Wildlife Refuge, Cedar Island National Wildlife Refuge, Swanquarter National Wildlife Refuge, Mattamuskeet National Wildlife Refuge, and Croatan National Forest (**Figure 3-9**).

The airspace proposed for ADAIR training activities also include four Warning Areas (W-122, W-177, W-161, and W-72). These Warning Areas are over the Atlantic Ocean; and therefore, no land use is associated with this airspace.

Table 3-18
Population Centers Beneath the Airspace Proposed for Contract Adversary Air

Incorporated Cities	Unincorporated Communities
Farmville MOA (Virginia)	
Counties	
Amelia, Appomattox, Campbell, Charlotte, Cumberland, Halifax, Lunenburg, Mecklenburg, Nottoway, Powhatan, Prince Edward	
Population Centers	
Brooksville, Burkeville, Crew, Charlotte, Courthouse Town, Drakes Branch, Keysville, Phenix	Clover, Cullen, Crystal Hill, Fort Mitchell, Hampden-Sydney, Jetersville, Lunenburg, Meherrin, Madisonville, Rice, Nathalie, Saxe, Volens, Wylliesburg
Echo MOA (North Carolina)	
Counties	
Harnett, Johnston, Wayne, Duplin, Sampson	
Population Centers	
Benson, Calypso, Clayton, Clinton, Erwin, Goldsboro, Faison, Four Oaks, Mount Olive, Newton Grove, Pine Level, Princeton, Salemburg, Selma, Smithfield, Turkey, Warsaw, Wilson's Mill	Belfast, Brogdon, Spivey's Corner, West Smithfield
Gamecock A MOA (North Carolina)	
Counties	
Bladen, Columbus, Robeson	
Population Centers	
Bladenboro, Boardman, Clarkton, Dublin, Elizabethtown, Orrum, Proctorville	Abbottsburg, Butters, White Oak
Core MOA (North Carolina)	
County	
Carteret	
Population Centers	
None	None
Phelps MOA (North Carolina)	
Counties	
Dare, Hyde, Tyrrell, Washington	
Population Centers	
Creswell	None
Pamlico MOA (North Carolina)	
Counties	
Carteret, Dare, Hyde	
Population Centers	
None	Avon, Buxton, Engelhard, Frisco, Hatteras, Salvo, Ocracoke, Stumpy Point

Table 3-18
Population Centers Beneath the Airspace Proposed for Contract Adversary Air

Incorporated Cities	Unincorporated Communities
R-5306A Restricted Area (North Carolina)	
Counties	
Beaufort, Carteret, Craven, Pamlico, Hyde	
Population Centers	
Alliance, Bayboro, Grantsboro, Mesic, Oriental, Stonewall, Vandemere	Atlantic, Davis, Florence, Hobucken, Lowland, Merrimon, Sealevel
R-5314 Restricted Area (North Carolina)	
Counties	
Dare, Hyde, Tyrell, Washington	
Population Centers	
Creswell	None

3.7 SOCIOECONOMICS – INCOME AND EMPLOYMENT

3.7.1 Definition of the Resource

Socioeconomics is the relationship between economics and social elements, such as population levels and economic activity. There are several factors that can be used as indicators of economic conditions for a geographic area, such as demographics, median household income, unemployment rates, percentage of families living below the poverty level, employment, and housing data. Data on employment identify gross numbers of employees, employment by industry or trade, and unemployment trends. Data on industrial, commercial, and other sectors of the economy provide baseline information about the economic health of a region. Socioeconomic data are typically presented at county, state, and US levels to characterize baseline socioeconomic conditions in the context of regional, state, and national trends.

The following are the ROIs for this resource:

Kinston Regional Jetport
- Lenoir County, North Carolina (which includes the City of Kinston)

Echo MOA
- Duplin County, North Carolina
- Harnett County, North Carolina
- Johnston County, North Carolina
- Sampson County, North Carolina
- Wayne County, North Carolina

Gamecock A MOA
- Bladen County, North Carolina
- Columbus County, North Carolina
- Robeson County, North Carolina

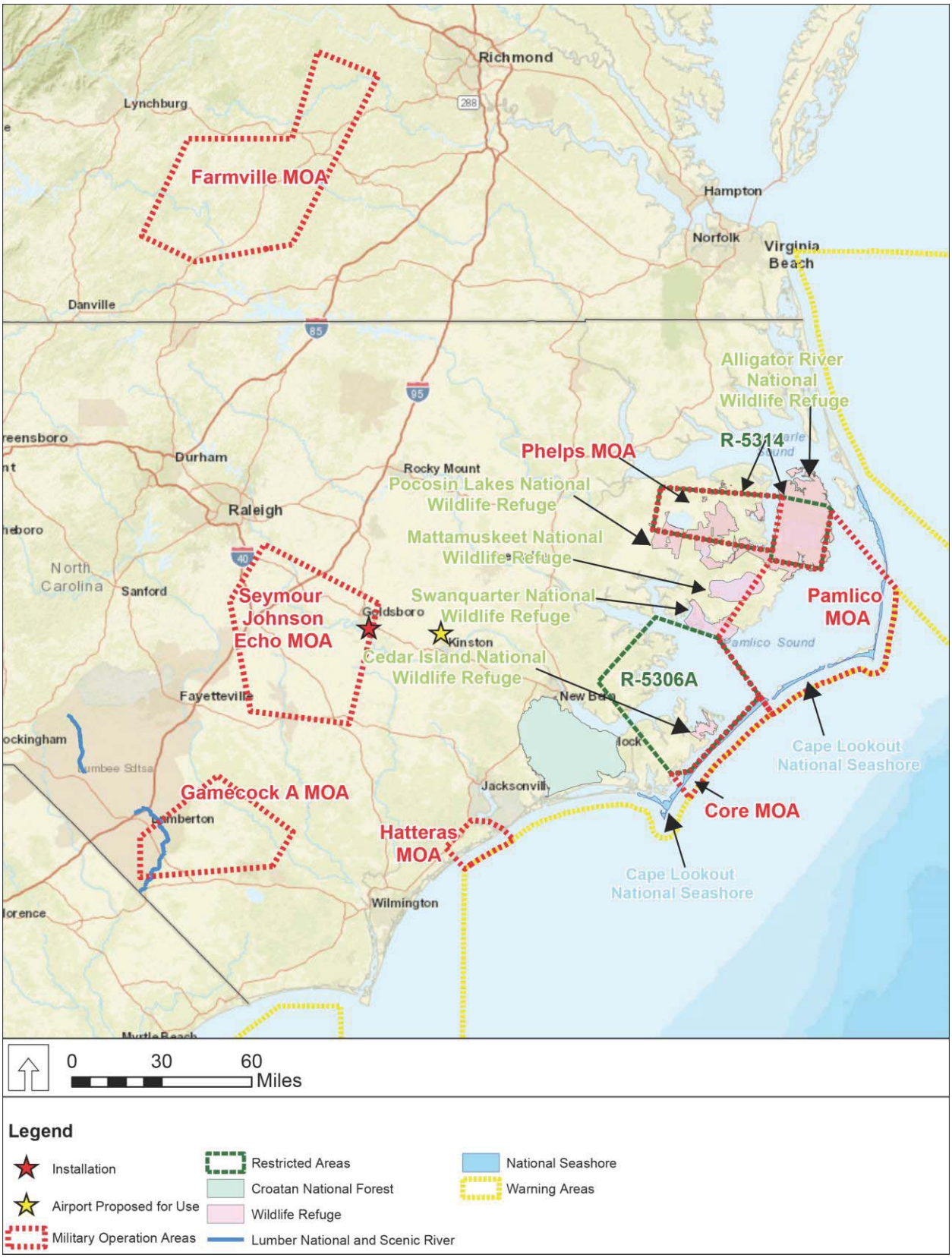


Figure 3-9. Sensitive Lands Beneath the Proposed Airspace.

Farmville MOA

- Amelia County, Virginia
- Appomattox County, Virginia
- Campbell County, Virginia
- Charlotte County, Virginia
- Cumberland County, Virginia
- Halifax County, Virginia
- Lunenburg County, Virginia
- Mecklenburg County, Virginia
- Nottoway County, Virginia
- Powhatan County, Virginia
- Prince Edward County, Virginia

Phelps, Pamlico, and Core MOAs

- Dare County, North Carolina
- Hyde County, North Carolina
- Tyrrell County, North Carolina
- Washington County, North Carolina

Restricted Areas R-5306A and R-5314

- Beaufort County, North Carolina
- Carteret County, North Carolina
- Dare County, North Carolina
- Hyde County, North Carolina
- Pamlico County, North Carolina
- Tyrrell County, North Carolina
- Washington County, North Carolina

Burner and Hatteras ATCAAs

- Beaufort County, North Carolina
- Carteret County, North Carolina
- Craven County, North Carolina
- Dare County, North Carolina
- Hyde County, North Carolina
- Jones County, North Carolina
- Onslow County, North Carolina
- Pamlico County, North Carolina
- Tyrrell County, North Carolina
- Washington County, North Carolina

3.7.2 Existing Conditions – Kinston Regional Jetport

The unemployment rate for Lenoir County was 4.0 percent in 2018 (Bureau of Labor Statistics, 2020a). This was slightly higher than the 2018 unemployment rate for North Carolina (3.9 percent) and the United States (3.9 percent) (Bureau of Labor Statistics, 2020b). The median household income in 2018 was $38,387 for Lenoir County, which was substantially lower than that for North Carolina ($52,413) and for the United States ($60,293). The rate of persons in poverty in 2018 was 22.1 percent for Lenoir County, which was substantially higher than the rate of persons in poverty in North Carolina (14.0 percent) and the United States (11.8 percent) (US Census Bureau, 2020).

In 2018, the ISO supported 1,515 jobs with an economic output of $471.8 million (NCDOT, 2019).

3.7.3 Existing Conditions – Airspace

3.7.3.1 Seymour Johnson Echo Military Operations Area

All of the counties beneath the Echo MOA had a higher unemployment rate and lower median income than North Carolina; however, the unemployment rates for these counties were only slightly higher than the State and US unemployment rates (Bureau of Labor Statistics, 2020b) (**Table 3-19**). The rate of persons in poverty in 2018 was higher in all of the counties beneath the Echo MOA than in North Carolina and the United States, except for Johnston County, North Carolina, which had a lower rate of persons in poverty than North Carolina and the United States (**Table 3-19**).

3.7.3.2 Gamecock A Military Operations Area

Bladen, Columbus, and Robeson Counties, North Carolina, comprise the counties beneath the Gamecock A MOA, and in 2018, all three counties had substantially lower median household incomes, higher unemployment rates, and higher rates of poverty than in North Carolina and the United States (US Census Bureau, 2020) (**Table 3-19**).

3.7.3.3 Farmville Military Operations Area

With the exception of Powhatan County, Virginia, which is located in suburban Richmond, Virginia, all of the counties beneath the Farmville MOA had a higher unemployment rate and a lower median household income in 2018 than Virginia and the United States as a whole (US Census Bureau, 2020) (**Table 3-19**). The percentage of persons in poverty in 2018 was higher in all of the counties beneath the Farmville MOA than the percentage of persons in poverty in Virginia, except for Amelia and Powhatan Counties, which had lower percentages of persons in poverty. Amelia, Campbell, and Powhatan Counties had lower percentage of persons in poverty than in the United States, with the remaining counties beneath the Farmville MOA having higher rates of persons in poverty than in the United States (**Table 3-19**) (US Census Bureau, 2020).

3.7.3.4 Phelps, Pamlico, and Core Military Operations Areas, Restricted Areas R-5306A and R-5314, and Burner and Hatteras Air Traffic Control Assigned Airspace

All of the counties beneath the Phelps, Pamlico, and Core MOAs, Restricted Areas, and ATCAAs had higher rates of unemployment than North Carolina and the United States (**Table 3-19**). In 2018, most of the counties had a median household income that was similar to or less than the median household income for North Carolina, and all of the counties beneath the MOAs, Restricted Areas, and ATCAAs had a lower median household income than that of the United States (**Table 3-19**). The percentage of persons in poverty was high in all counties beneath the airspaces except for Carteret and Dare Counties, which had substantially lower percentages of persons in poverty than in North Carolina and the United States (US Census Bureau, 2020) (**Table 3-19**).

3.8 Environmental Justice and Protection of Children

3.8.1 Definition of the Resource

EOs direct federal agencies to address disproportionate environmental and human health effects in minority and low-income communities and to identify and assess environmental health and safety risks to children.

Table 3-19
Unemployment Rate (2018), Income (2018), and Poverty Rate (2018)
for the Airspace Region of Influence

Location	Unemployment Rate	Median Household Income	Rate of Poverty	Echo MOA	Gamecock A MOA	Farmville MOA	Phelps, Pamlico, and Core MOAs, Restricted Areas, and ATCAAs
North Carolina							
Beaufort Co.	4.6%	$43,688	18.1%				X
Bladen Co.	5.3%	$32,378	29.1%		X		
Carteret Co.	4.3%	$54,428	9.8%				X
Columbus Co.	5.0%	$36,398	25.3%		X		
Craven Co.	4.2%	$50,870	14.9%				X
Dare Co.	5.1%	$58,012	8.3%				X
Duplin Co.	4.3%	$38,850	20.4%	X			
Harnett Co.	4.6%	$51,630	14.4%	X			
Hyde Co.	8.3%	$45,466	22.2%				X
Johnston Co.	3.6%	$56,842	11.7%	X			
Jones Co.	4.2%	$36,892	16.2%				X
Onslow Co.	4.7%	$49,491	15.1%				X
Pamlico Co.	4.1%	$44,947	16.6%				X
Robeson Co.	5.9%	$33,679	24.5%		X		
Sampson Co.	4.0%	$39,068	22.8%	X			
Tyrrell Co.	6.3%	$35,472	25.2%				X
Washington Co.	5.9%	$35,512	21.1%				X
Wayne Co.	4.3%	$42,192	20.2%	X			
North Carolina	3.9%	$52,413	14.0%				
United States	3.9%	$60,293	11.8%				
Virginia							
Amelia Co.	3.2%	$58,526	9.9%			X	
Appomattox Co.	3.6%	$56,176	13.5%			X	
Campbell Co.	3.3%	$50,258	11.3%			X	
Charlotte Co.	3.7%	$39,212	19.3%			X	
Cumberland Co.	3.3%	$46,221	15.7%			X	
Halifax Co.	4.1%	$42,298	14.5%			X	
Lunenburg Co.	3.2%	$41,868	18.2%			X	
Mecklenburg, Co.	4.1%	$42,025	18.7%			X	
Nottoway Co.	3.1%	$42,869	22.4%			X	
Powhatan Co.	2.7%	$83,914	6.9%			X	
Prince Edward Co.	3.8%	$46,189	20.0%			X	
Virginia	3.0%	$71,564	10.7%				
United States	3.9%	$60,293	11.8%				

Sources: US Census Bureau, 2020; US Bureau of Labor Statistics, 2020a, 2020b

EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, pertains to environmental justice issues and relates to various socioeconomic groups and disproportionate impacts that could be imposed on them. This EO requires that federal agencies' actions substantially affecting human health or the environment do not exclude persons, deny persons benefits, or subject persons to discrimination because of their race, color, or national origin. EO 12898 was enacted to ensure the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Consideration of environmental justice concerns includes race, ethnicity, and the poverty status of populations in the vicinity of a proposed action.

EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, states that each federal agency "(a) shall make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children; and (b) shall ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks."

For the purposes of this analysis, minority populations are defined as Alaska Natives and American Indians, Asians, Blacks or African-Americans, Native Hawaiians, and Pacific Islanders or persons of Hispanic origin (of any race); low-income populations include persons living below the poverty threshold as determined by the US Census Bureau; and youth populations are children under the age of 18 years.

3.8.2 Existing Conditions – Kinston Regional Jetport

An evaluation of minority and low-income populations in Lenoir County forms a baseline for the evaluation of the potential for disproportionate impacts on these populations from the Proposed Action. In 2018, Lenoir County had a substantially higher percentage of minorities (50.8 percent) in the population compared to North Carolina (37.2 percent) and the United States (39.6 percent) (US Census Bureau, 2020). A total of 41.5 percent of the Lenoir County population identified as Black or African American, which is nearly twice the percentage of the same minority population for North Carolina.

Lenoir County had rate of poverty (22.1 percent) that was nearly twice that of the United States as a whole (11.8 percent) and was 8 percent higher than rate of poverty for North Carolina (14.0 percent). The percentage of children in Lenoir County (22.5 percent) was the same as North Carolina and the United States as a whole (US Census Bureau, 2020).

3.8.3 Existing Conditions – Airspace

An evaluation of minority and low-income populations in the counties beneath the special use airspace forms a baseline for the evaluation of the potential for disproportionate impacts on these populations from the Proposed Action.

3.8.3.1 Seymour Johnson Echo Military Operations Area

In 2018, Duplin, Sampson and Wayne Counties had a higher percentage of the population that identified as minorities than North Carolina and the United States; Harnett and Johnston Counties had a lower minority population than North Carolina and the United States. All five counties, however, had a slightly higher percentage of the population that identified as Hispanic or Latino than North Carolina (**Table 3-20**). Of the five counties, only Johnston County, North Carolina, had a percentage of persons in poverty that was lower than that for North Carolina and the United States. The percentage of youth in the population in all five counties beneath the Echo MOA was substantially higher than that of North Carolina and the United States (**Table 3-20**) (US Census Bureau, 2020).

Table 3-20
Total Population and Populations of Concern for the Airspace Region of Influence (2018)

Location	Total Population	Percent Minority	Percent Hispanic or Latino	Percent below Poverty	Percent Youth	Echo MOA	Gamecock A MOA	Farmville MOA	Phelps, Pamlico, and Core MOAs, Restricted Areas, and ATCAAs
North Carolina									
Beaufort Co.	47,079	34.3	8.0	18.1	20.1				X
Bladen Co.	33,190	45.2	7.8	29.1	20.4		X		
Carteret Co.	69,524	13.5	4.3	9.8	17.6				X
Columbus Co.	55,655	40.7	5.5	25.3	20.9		X		
Craven Co.	102,912	34.3	7.4	14.9	21.6				X
Dare Co.	36,501	12.5	7.3	8.3	18.9				X
Duplin Co.	58,856	48.7	22.7	20.4	23.7	X			
Harnett Co.	134,214	38.9	13.0	14.4	26.0	X			
Hyde Co.	5,230	40.1	9.2	22.2	16.8				X
Johnston Co.	202,675	32.8	14.0	11.7	25.5	X			
Jones Co.	9,637	37.9	5.1	16.2	18.5				X
Onslow Co.	197,683	34.1	12.8	15.1	24.5				X
Pamlico Co.	12,670	25.7	4.1	16.6	14.8				X
Robeson Co.	131,831	75.0	9.0	24.5	24.8		X		
Sampson Co.	63,626	49.7	20.4	22.8	24.3	X			
Tyrrell Co.	4,131	50.5	9.0	25.2	18.6				X
Washington Co.	11,859	55.7	5.8	21.1	20.0				X
Wayne Co.	123,248	46.9	12.3	20.2	23.7	X			
North Carolina	10,383,620	37.2	9.6	14.0	22.2				
United States	327,167,434	39.6	18.3	11.8	22.4				
Virginia									
Amelia Co.	13,013	25.8	2.9	9.9	20.5			X	
Appomattox Co.	15,841	23.2	1.6	13.5	21.1			X	
Campbell Co.	54,973	20.5	2.8	11.3	19.3			X	
Charlotte Co.	11,938	32.0	2.1	19.3	20.9			X	
Cumberland Co.	9,809	36.4	3.0	15.7	19.4			X	
Halifax Co.	34,120	40.2	2.1	14.5	20.3			X	
Lunenburg Co.	12,086	40.6	4.8	18.2	18.6			X	
Mecklenburg Co.	30,650	40.0	3.1	18.7	18.5			X	
Nottoway Co.	15,420	46.0	4.7	22.4	19.1			X	
Powhatan Co.	29,189	14.0	2.4	6.9	18.2			X	
Prince Edward Co.	22,950	39.0	2.7	20.0	16.4			X	
Virginia	8,517,685	38.5	9.6	10.7	22.0				
United States	327,167,434	39.6	18.3	11.8	22.4				

Source: US Census Bureau, 2020

Note: Hispanic and Latino denote a place of origin and percent youth are all persons under the age of 18

3.8.3.2 Gamecock A Military Operations Area

All three counties beneath the Gamecock A MOA had a higher percentage of the population that was a minority in 2018 than that of North Carolina and the United States as a whole (**Table 3-20**); notably the percentage of Robeson County that identifies as a minority population is 75.0 percent. The percent of the population that is below poverty in the three counties beneath the Gamecock A MOA is almost twice that of North Carolina and the United States (**Table 3-20**). The percentage of youth in the population in Bladen and Columbus Counties was less than North Carolina and the United States, and the percentage of youth in the population of Robeson County was more than North Carolina and the United States (**Table 3-20**) (US Census Bureau, 2020).

3.8.3.3 Farmville Military Operations Area

Except for Nottoway County, Virginia, the percentage of the population that identified as a minority in 2018 beneath the Farmville MOA was equal to or less than the percentage of the population that identified as a minority in Virginia and the United States. Further, the percentage of the population that identified as Hispanic or Latino is comparably low in all of the counties beneath the Farmville MOA (**Table 3-20**). Several counties beneath the Farmville MOA had a percentage of the population below poverty exceed 18 percent, which was substantially higher than percentage of the population below poverty in Virginia and the United States (**Table 3-20**). Conversely, Powhatan County located in suburban Richmond, Virginia, had a much lower rate of poverty than both Virginia and the United States. The percentage of the population below 18 was lower in every county beneath the Farmville MOA than in Virginia and the United States (**Table 3-20**) (US Census Bureau, 2020).

3.8.3.4 Phelps, Pamlico, and Core Military Operations Areas, Restricted Areas R-5306A and R-5314, and Burner and Hatteras Air Traffic Control Assigned Airspace

Of the counties beneath the Phelps, Pamlico, and Core MOAs, Restricted Areas, and ATCAAs, only Tyrrell and Washington Counties have a percentage of the population that identifies as a minority that is substantially higher than that of North Carolina and the United States (**Table 3-20**). All of the counties have a relatively low percentage of the population that identifies as of Hispanic or Latino origin. Except for Carteret and Dare Counties, the counties beneath the Phelps, Pamlico, and Core MOAs, Restricted Areas, and ATCAAs have a higher percentage of the population below poverty than in North Carolina or the United States (**Table 3-20**). Only Onslow County has a percentage of the population below the age of 18 that is greater than the youth population of North Carolina and the United States (**Table 3-20**) (US Census Bureau, 2020).

3.9 CULTURAL RESOURCES

3.9.1 Definition of the Resource

Cultural resources are any prehistoric or historic district, site, building, structure, or object considered important to a culture or community for scientific, traditional, religious, or other purposes. These resources are protected and identified under several federal laws and EOs.

Cultural resources include the following subcategories:

- Archaeological (i.e., prehistoric or historic sites where human activity has left physical evidence of that activity, but no structures remain standing);
- Architectural (i.e., buildings or other structures or groups of structures, or designed landscapes that are of historic or aesthetic significance); and
- Traditional Cultural Properties (resources of traditional, religious, or cultural significance to Native American tribes and other communities).

Significant cultural resources are called historic properties and are listed on the National Register of Historic Places (NRHP) or have been determined to be eligible for listing. To be eligible for the NRHP, historic properties must be 50 years old and have national, state, or local significance in American history, architecture, archaeology, engineering, or culture. They must possess sufficient integrity of location, design, setting, materials, workmanship, feeling, and association to convey their historical significance, and meet at least one of four criteria (National Park Service [NPS], 2002):

- Associated with events that have made a significant contribution to the broad patterns of our history (Criterion A)
- Associated with the lives of persons significant in our past (Criterion B)
- Embody distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction (Criterion C)
- Yielded or likely to yield information important in prehistory or history (Criterion D)

Properties that are less than 50 years old can be considered eligible for the NRHP under Criterion Consideration G if they possess exceptional historical importance. Those properties must also retain historic integrity and meet at least one of the four NRHP Criteria for Evaluation (Criterion A, B, C, or D). The term “Historic Property” refers to National Historic Landmarks, NRHP-listed, and NRHP-eligible cultural resources.

Federal laws protecting cultural resources include the Archaeological and Historic Preservation Act of 1960 as amended, the American Indian Religious Freedom Act of 1978, the Archaeological Resources Protection Act of 1979, the Native American Graves Protection and Repatriation Act of 1990, and the NHPA, as amended through 2016, and associated regulations (36 CFR Part 800). The NHPA requires federal agencies to consider effects of federal undertakings on historic properties prior to making a decision or taking an action and integrate historic preservation values into their decision-making process. Federal agencies fulfill this requirement by completing the Section 106 consultation process, as set forth in 36 CFR Part 800. Section 106 of the NHPA also requires agencies to consult with federally recognized Indian tribes with a vested interest in the undertaking.

Section 106 of the NHPA requires all federal agencies to seek to avoid, minimize, or mitigate adverse impacts to historic properties (see implementing regulation at 36 CFR § 800.1[a]). For cultural resource analysis, the Area of Potential Effects (APE) is used as the ROI. APE is defined as the “geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist,” (36 CFR § 800.16[d]) and thereby diminish their historic integrity. The APE for direct and indirect effects includes the civilian airport being analyzed for possible use by a contract ADAIR service provider to support Seymour Johnson AFB operations (i.e., ISO as described in **Section 2.5.1**) and the special use airspace as described in **Section 2.1.6** and shown on **Figure 1-3**.

3.9.2 Existing Conditions – Kinston Regional Jetport

3.9.2.1 Environmental Setting

ISO lies 26 ft MSL within the Coastal Plain physiographic region in North Carolina and is situated on the low-lying, level ground between Stoneyton Creek to the north and Briary Run to the south both of which feed into the Neuse River, running out to the Pamlico Sound and ultimately the Atlantic River (NPS, 2017; North Carolina Environmental Education, 2019). It is on the northwestern outskirts of the city of Kinston, established in 1762 as one of three tobacco inspection areas in the state (Lewis, 2019).

3.9.2.2 Archaeological and Traditional Cultural Properties

A Historic Preservation Plan (HPP) was developed for the NCGTP in partial fulfillment of a Programmatic Agreement among the FAA, United States Army Corps of Engineers, NCGTP Authority, North Carolina State Historic Preservation Office (NCSHPO), and Advisory Council on Historic Preservation (Lautzenheiser et al., 2002). The NCGTP is a park adjoining the airport built to bring high-tech industry and economic development

to eastern North Carolina. The APE for the Programmatic Agreement and associated HPP was defined as an approximately 5,775-ac area including ISO and its environs. The HPP included a synthesis of available data on the history, prehistory, architecture, architectural history, landscape architecture, and archaeology of the APE and an inventory of all known cultural resources. The HPP summarizes the results of a 1993 archaeological survey of 1,830 ac, including ISO, conducted by Coastal Carolina Research, Inc. During this survey, 97 archaeological sites were recorded, 27 prehistoric sites, 41 historical sites, and 29 sites with both prehistoric and historical components. None of the prehistoric sites retained intact deposits and appeared to represent hunting camps or small farmsteads. As such none of the sites were determined to be potentially eligible for inclusion in the NRHP (Lautzenheiser et al., 2002).

Twelve historical sites, however, ranging from colonial sites and eighteenth-century plantations to antebellum farmsteads, were recommended potentially eligible for inclusion in the NRHP. None of these sites are located within or adjacent to the boundaries of ISO (Lautzenheiser et al., 2002). In addition to these sites, seven cemeteries were identified during the 1993 survey; all were recorded as archaeological sites with the closest, the Sutton Cemetery (31LR158) being located nearly a half of a mile west of ISO (Lautzenheiser et al., 2002).

In 2012, the NCGTP identified a group of 15 developable parcels, totaling 865 ac within the boundaries of ISO requesting concurrence from the NCSHPO to certify these properties as “shovel ready” (i.e., not requiring Section 106) through the North Carolina Department of Commerce. The NCSHPO conducted a review, determined no historic resource would be affected, and offered no further comment on the project (effectively confirming lack of cultural concerns and allowing the certification to move forward).[1]

As noted above, no significant prehistoric sites are located within ISO and neither is the facility in possession of prehistoric human remains, funerary objects, sacred objects, or objects of cultural patrimony. Traditional Cultural Properties and sacred sites are a special class of cultural resources that require specialized expertise in their identification and assessment. No known traditional cultural resources or sacred sites have been identified at ISO.

As part of this EA, four federally recognized Native American tribes have been contacted, two regarding their potential interest in, and knowledge of traditional cultural resources and sacred sites potentially located within ISO. The Catawba Indian Nation and Tuscarora Nation have a historical connection to this part of North Carolina (US Department of Housing and Urban Development, 2019).

3.9.2.3 Architectural Properties

ISO was a US Navy pilot training base during World War II and then activated as Kinston Air Field on 17 October 1951. It was redesignated Stallings Air Base on 28 June 1953 and conducted flying training and contract flying training until it was inactivated on 27 November 1957 (Manning, 2005). No buildings greater than 50 years old, and associated with prior military use of the airfield, are known to be extant. There are no historic districts, or individual historic structures, eligible for inclusion in the NRHP documented at ISO.

3.9.3 Existing Conditions – Airspace

3.9.3.1 Environmental Setting

The airspace APE includes the special use airspace as described in **Section 2.1.6**. Based on the nature of the Proposed Action, archaeological and architectural resources under the airspace are not described in this EA. No known Traditional Cultural Properties have been identified in the APE. NRHP-listed resources, tribal lands, and cultural resources in the marine environment under the special use airspace proposed for use are described in the following sections.

[1] Ramona M. Bartos, North Carolina Department of Cultural Resources, letter to Alanna King, North Carolina Global TransPark, 24 January 2012.

3.9.3.2 National Register of Historic Places Listed Resources

There are 85 historic architectural resources associated with the airspace APE listed in the NRHP. Of these, 13 are under the Farmville MOA, 48 under the Echo MOA, 7 under the Gamecock A MOA, and 20 under the Burner ATCAA with Hatteras ATCAA/Pamlico MOA and the R-5306A and Core MOA (**Table 3-21**; NPS, n.d.). Approximately 29 NRHP-listed archaeological sites, including a multicomponent prehistoric village site, a prehistoric pictograph site, several farmsteads and plantations, a confederate breastworks, and several shipwrecks are recorded within the counties below the special use airspace, 14 in Virginia and 15 in North Carolina (NPS, 2019).

Table 3-21
National Register of Historic Places Listed Resources Under the Airspace

Resource	Reference No.	State
Farmville MOA		
Staunton Hill	69000229	Virginia
Charlotte County Courthouse	80004178	Virginia
Debtor's Prison	72001412	Virginia
Old Prince Edward County Clerk's Office	79003072	Virginia
Burke's Tavern	75002027	Virginia
Briery Church	69000371	Virginia
Blenheim	86003475	Virginia
Falkland	79003071	Virginia
Old Providence Presbyterian Church	88001013	Virginia
Keysville Railroad Station	8001050	Virginia
Fort Mitchell Depot	9000640	Virginia
Worsham High School	10000384	Virginia
Clarkton Bridge	3001194	Virginia
Echo MOA		
Hastings-McKinnie House	83001893	North Carolina
Lee, Harry Fitzhugh, House	84002542	North Carolina
Hill, Buckner, House	75001255	North Carolina
Stevens, Everitt P., House	82003481	North Carolina
Union Station	82003482	North Carolina
Johnston County Courthouse	79001728	North Carolina
Edgerton, Noah Edward, House	82003477	North Carolina
Smith, William E., House	82003480	North Carolina
Harper House	70000459	North Carolina
Perry--Cherry House	86000392	North Carolina
Herring, Robert, House	86000557	North Carolina
Howard--Royal House	86000561	North Carolina
Pugh--Boykin House	86000576	North Carolina
Goldsboro Union Station	77001015	North Carolina
Royal--Crumpler--Parker House	86000578	North Carolina
Nowell-Mayerburg-Oliver House	82003478	North Carolina
Cherrydale	86000554	North Carolina
Lee, Lovett, House	86000567	North Carolina
McPhail, Jonas, House and McPhail, Annie, Store	86000571	North Carolina

Table 3-21
National Register of Historic Places Listed Resources Under the Airspace

Resource	Reference No.	State
Oates, Livingston, Farm	86000572	North Carolina
Pigford House	86000574	North Carolina
Wilson, John E., House	86000545	North Carolina
Southerland--Burnette House	88000057	North Carolina
Williams, Isaac, House	84002523	North Carolina
Hood--Strickland House	90001310	North Carolina
Hannah's Creek Primitive Baptist Church	90002181	North Carolina
Patrick-Carr-Herring House	92001791	North Carolina
US Post Office, Former	93000315	North Carolina
Hood Brothers Building	86001623	North Carolina
US Post Office, Former	95000670	North Carolina
Clayton Banking Company Building	96001444	North Carolina
Mount Olive High School (Former)	98001266	North Carolina
Johnson Building	459	North Carolina
Clayton Graded School and Clayton Grammar School – Municipal Auditorium	1001133	North Carolina
Faison, William Wright, House	4001390	North Carolina
Faison, William E., House	4001526	North Carolina
Moore, Walter R. and Eliza Smith, House	5000379	North Carolina
Cleveland School	5000961	North Carolina
Smithfield Masonic Lodge	7001012	North Carolina
Shiloh Primitive Baptist Church	7001498	North Carolina
First Presbyterian Church	79003340	North Carolina
Odd Fellows Lodge	78001984	North Carolina
Princeton Graded School	5001139	North Carolina
Pugh, Francis, House	86000577	North Carolina
Bizzell, Asher W., House	86001125	North Carolina
Harrison, Richard B., School	12001089	North Carolina
Downtown Smithfield Historic District	93001120	North Carolina
Faison Cemetery	6000291	North Carolina
Gamecock A MOA		
Brown Marsh Presbyterian Church	75001239	North Carolina
Mt. Horeb Presbyterian Church and Cemetery	87000695	North Carolina
Clark, John Hector, House	87000039	North Carolina
Clarkton Depot	86003463	North Carolina
Carver's Creek Methodist Church	8000365	North Carolina
Surles, W.R. Memorial Library	9000725	North Carolina
Trinity Methodist Church	89001419	North Carolina
Burner ATCAA with Hatteras ATCAA/Pamlico MOA, Restricted Area R-5306A and Core MOA, and Restricted Area R-5314/Phelps MOA		
Salter--Battle Hunting and Fishing Lodge	5000381	North Carolina
Inkwell	78001960	North Carolina
Wynne's Folly	77001002	North Carolina

Table 3-21
National Register of Historic Places Listed Resources Under the Airspace

Resource	Reference No.	State
Hatteras Weather Bureau Station	78000268	North Carolina
Ocracoke Light Station	77000110	North Carolina
Salvo Post Office	93000997	North Carolina
Ballance, Ellsworth and Lovie, House	1000558	North Carolina
Midgett, Rasmus, House	9000847	North Carolina
Somerset Place State Historic Site	70000481	North Carolina
Davenport House	7000932	North Carolina
Carteret County Home	84000528	North Carolina
Gibbs House	73001302	North Carolina
Henry, Jacob, House	73001303	North Carolina
Fort Macon	70000445	North Carolina
Belhaven City Hall	81000420	North Carolina
China Grove	73001364	North Carolina
Mattocks, William Edward, House	89000166	North Carolina
Morehead City Municipal Building	4000828	North Carolina
Old Burying Ground	74001332	North Carolina
Lake Mattamuskeet Pump Station	80002849	North Carolina

Notes:
ATCAA = Air Tower Control Assigned Airspace; MOA = Military Operations Area

3.9.3.3 Tribal Lands

There are currently four federally recognized Native American tribes in Virginia and North Carolina with historic ties to lands lying beneath the airspace APE, including the Catawba Indian Nation, the Delaware Nation of Oklahoma, the Pamunkey Indian Tribe, and the Tuscarora Nation (US Department of Housing and Urban Development, 2019).

3.9.3.4 Cultural Resources in the Marine Environment

The eastern seaboard of the United States is rich in maritime tradition. It includes thousands of miles of coastline as well as numerous tributaries, inlets, and bays that provided avenues for transportation, trade, and a way of life to various groups from prehistoric times through the present. As such, the potential for submerged, underwater archaeological resources is equally rich and varied. The offshore APE for the Proposed Action includes portions of the waters of the Continental Shelf of southern Virginia, North Carolina, and northern South Carolina. Both North Carolina and South Carolina have a specific program dedicated to underwater resources at the state level.

In North Carolina, the Underwater Archaeology Branch (UAB) of the Office of State Archaeology was founded in 1962 to understand and manage the state's submerged cultural resources, documenting more than 1,000 underwater archaeological sites that include prehistoric dugout canoes, colonial sailing vessels, beached shipwreck remains, dozens of Civil War shipwrecks, and nineteenth- and twentieth-century steamboats. UAB also maintains extensive files on over 5,000 historically documented shipwrecks, as well as a wide variety of water-related subjects such as bridge and ferry crossings, historic ports, plantation landings, riverine and coastal trade, harbor development, and improvements to navigation (NCSHPO UAB, n.d.).

The South Carolina Institute of Archaeology and Anthropology (within the University of South Carolina) has a Maritime Research Division that operates under the direction of the State Underwater Archaeologist. The

Maritime Research Division maintains a database of underwater archaeological sites that include shipwrecks, abandoned vessels, prehistoric or historic scatter sites, boat landings, shipyards and other features, for research and compliance purposes and acts in an advisory role to the SHPO concerning those projects having the potential to impact underwater archaeological sites in state navigable rivers and coastal waters (South Carolina Institute of Archaeology and Anthropology, n.d.).

Though the location, number, and type of underwater archaeological resources have not been as formally documented through time as terrestrial resources have, underwater resources have gained scientific and public prominence in the past two decades and are also currently being tracked through several industry and government-run vehicles. The Atlantic Outer Continental Shelf Shipwreck Database (Holland, 2012) provides consolidated data from a variety of primary and secondary sources (including contemporary published shipwreck inventories and newspaper articles as well as data from the US Coast Guard, US Customs Service, and Bureau of Marine Inspection and Navigation). It estimates there are nearly 5,000 underwater shipwrecks along the shores of Virginia, North Carolina, and South Carolina. The NOAA maintains a Wrecks and Obstructions Database. Their Automated Wreck and Obstruction Information System contains information on over 10,000 submerged wrecks and obstructions in the coastal waters of the United States including latitude and longitude and a brief historic description (NOAA, n.d.).

Underwater resources are dominated by shipwrecks, including those from European exploration of the region, the American Revolution, the War of 1812, the Civil War, naval preparations for World War I, and World War II. Private and commercial wrecks that span the seventeenth through twentieth centuries are documented along the Atlantic Coast as well. While shipwrecks have understandably been the primary subject of underwater archaeology, it is important to note that the potential for submerged prehistoric sites is equally great. Human occupation of the region included the Continental Shelf which was exposed due to significantly lower sea levels during the Pleistocene period. The retreat of the Ice Age resulted in the flooding of extensive areas of formerly dry land (Blanton and Margolin, 1994).

3.10 HAZARDOUS MATERIALS AND WASTES AND TOXIC SUBSTANCES

3.10.1 Definition of the Resource

The Comprehensive Environmental Response, Compensation, and Liability Act, as amended by the Superfund Amendments and Reauthorization Act and the Toxic Substances Control Act (TSCA), defines HAZMAT. HAZMAT is defined as any substance with physical properties of ignitability, corrosivity, reactivity, or toxicity that might cause an increase in mortality, serious irreversible illness, and incapacitating reversible illness, or that might pose a substantial threat to human health or the environment. The OSHA is responsible for enforcement and implementation of federal laws and regulations pertaining to worker health and safety under 29 CFR § 1910. OSHA also includes the regulation of HAZMAT in the workplace and ensures appropriate training in their handling.

The Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act, which was further amended by the Hazardous and Solid Waste Amendments, defines hazardous wastes. Hazardous waste is defined as any solid, liquid, contained gaseous, or semisolid waste, or any combination of wastes, that pose a substantial present or potential hazard to human health or the environment. In general, both HAZMAT and hazardous wastes include substances that, because of their quantity, concentration, physical, chemical, or infectious characteristics, might present substantial danger to public health and welfare or the environment when released or otherwise improperly managed.

Spill Prevention, Control, and Countermeasure Regulation (40 CFR Part 112) regulates bulk storage containers, which includes aboveground storage tanks (ASTs). Underground storage tanks (USTs) are regulated under U.S.C. Title 42, Chapter 82, Subchapter IX, which incorporates amendments to Subtitle I of the Solid Waste Disposal Act as well as by the UST provisions of the Energy Policy Act of 2005, which gives the USEPA the authority to regulate USTs. Evaluation of HAZMAT and hazardous wastes focuses on USTs and ASTs as well as the storage, transport, and use of pesticides, fuels, oils, and lubricants. Evaluation might also extend to generation, storage, transportation, and disposal of hazardous wastes

when such activity occurs at or near the project site of a Proposed Action. In addition to being a threat to humans, the improper release of HAZMAT and hazardous wastes can threaten the health and well-being of wildlife species, botanical habitats, soil systems, and water resources. In the event of release of HAZMAT or hazardous wastes, the extent of contamination varies based on type of soil, topography, weather conditions, and water resources.

Toxic substances might pose a risk to human health but are not regulated as contaminants under the hazardous waste statutes. Included in this category are asbestos-containing materials (ACMs), lead-based paint (LBP), radon, and polychlorinated biphenyls (PCBs). The presence of special hazards or controls over them might affect, or be affected by, a Proposed Action. Information on special hazards describing their locations, quantities, and condition assists in determining the significance of a Proposed Action.

Asbestos. Asbestos is regulated by the USEPA, with the authority promulgated under OSHA, 29 U.S.C. § 669 et seq. Section 112 of the CAA regulates emissions of asbestos fibers to ambient air. USEPA policy is to leave asbestos in place if disturbance or removal could pose a health threat.

Lead-based Paint. Human exposure to lead has been determined an adverse health risk by agencies such as OSHA and the USEPA. Sources of exposure to lead are dust, soils, and paint. In 1973, the Consumer Product Safety Commission established a maximum lead content in paint of 0.5 percent by weight in a dry film of newly applied paint. In 1978, under the Consumer Product Safety Act (Public Law 101-608, as implemented by 16 CFR § 1303), the Consumer Product Safety Commission lowered the allowable lead level in paint to 0.06 percent (600 ppm). The Act also restricted the use of LBP in nonindustrial facilities.

Radon. The United States Surgeon General defines radon as an invisible, odorless, and tasteless gas, with no immediate health symptoms, that comes from the breakdown of naturally occurring uranium inside the earth (United States Surgeon General, 2005). Radon that is present in soil can enter a building through small spaces and openings, accumulating in enclosed areas such as basements. No federal or state standards are in place to regulate residential radon exposure at the present time, but guidelines were developed. Although 4.0 picocuries per liter (pCi/L) is considered an “action” limit, any reading over 2.0 pCi/L qualifies as a “consider action” limit. The USEPA and the United States Surgeon General have evaluated the radon potential around the country to organize and assist building code officials in deciding whether radon-resistant features are applicable in new construction. Radon zones can range from 1 (high) to 3 (low).

Polychlorinated Biphenyls. PCBs are a group of chemical mixtures used as insulators in electrical equipment, such as transformers and fluorescent light ballasts. Chemicals classified as PCBs were widely manufactured and used in the United States until they were banned in 1979. The disposal of PCBs is regulated under the federal TSCA (15 U.S.C. § 2601, et seq., as implemented by 40 CFR § 761), which banned the manufacture and distribution of PCBs, with the exception of PCBs used in enclosed systems. In accordance with 40 CFR § 761 PCBs are regulated as follows:

- Less than 50 ppm—non-PCB (or PCB-free)
- 50 ppm to 499 ppm—PCB-contaminated
- 500 ppm and greater—PCB equipment (USEPA, 2020)

The TSCA regulates and the USEPA enforces the removal and disposal of all sources of PCBs containing 50 ppm or more; the regulations are more stringent for PCB equipment than for PCB-contaminated equipment.

The ROI for HAZMAT, hazardous wastes, and toxic materials includes facilities such as selected office space, aircraft maintenance hangar space, storage area(s), vehicle parking, and ramp space at ISO.

3.10.2 Existing Conditions – Kinston Regional Jetport

Delta Private Jets, which is located at ISO, provides full general aviation services and fueling of aircraft. Stationary storage at ISO consists of three ASTs containing aviation gasoline, jet fuel (Jet A), and diesel fuel; the total storage capacity at ISO is 32,500 gallon. Historically, USTs were used at ISO for bulk storage of fuels, but those were removed from service and an active remediation system is in place to treat

groundwater after UST removal. The USTs were replaced with the three active ASTs and no reportable spills have occurred. Delta Private Jets maintains a Spill Prevention Control and Countermeasures Plan for the ISO fueling facility (ISO, 2012a).

One inactive hazardous site (Site Number NCN000407582) and one Brownfields Program Site (Site Number 1104807054) are located within 1 mi of ISO. Both of these records are associated with the Former West Pharmaceutical Services Site. The Former West Pharmaceutical Services Site is undergoing active bioremediation of VOC-affected groundwater (NCDEQ, 2020) and does not pose a hazard to existing facilities and users at ISO.

No records are available for the presence or absence of LBP or ACMs in facilities at ISO; however, the current terminal was constructed in 1978 (Manning, 2005) indicating potential for the presence of LBP or ACMs. No LBP or ACM management plans are available for this facility.

The USEPA radon zone for Lenoir County, North Carolina, is Zone 3 (Low Potential, predicted indoor average level below 2.0 pCi/L) (USEPA, 2019b).

Specific PCB materials at the ISO have not been identified. Note that ballasts and starters from light fixtures could contain PCB-containing material. The disposal of these materials is regulated. If the ballasts are not plainly marked as “Non-PCB”, the material must be treated as PCB-containing (or be tested and proven to be non-PCB containing).

3.11 INFRASTRUCTURE, TRANSPORTATION, AND UTILITIES

3.11.1 Definition of the Resource

Infrastructure consists of the systems and structures that enable a population in a specified area to function. Infrastructure is wholly man-made, with a high correlation between the type and extent of infrastructure and the degree to which an area is characterized as developed. The availability of infrastructure and its capacity to support more users, including residential and commercial expansion, are generally regarded as essential to the economic growth of an area. The infrastructure information for ISO discussed herein was obtained from available geographic information system data and applicable comprehensive planning documents.

The infrastructure components include solid waste management, sanitary and storm sewers, transportation, and utilities. Solid waste management primarily relates to the availability of landfills to support a population’s residential, commercial, and industrial needs. Sanitary and storm sewers (also considered utilities) includes those systems that collect, move, treat, and discharge liquid waste and stormwater. Transportation is defined as the system of roadways, highways, and transit services that are in the vicinity of the proposed airport, which could be potentially affected by the Proposed Action. Utilities include electrical, natural gas, liquid fuel, water supply, sanitary sewage/wastewater, and communications systems.

The ROI for this resource is ISO (as described in **Section 2.5.1**) and the supporting infrastructure facilities detailed in the following sections.

3.11.2 Existing Conditions – Kinston Regional Jetport

ISO includes Runway 05/23, which is 11,500 ft long and 150 ft wide, with aprons and traverse taxiways on the southern side of the runway (**Figure 3-10**). The airport is located within the NCGTP, an industrial and business park located approximately 2 mi northwest of the City of Kinston in Lenoir County, North Carolina, and has the second-largest civilian runway on the United States eastern coast.

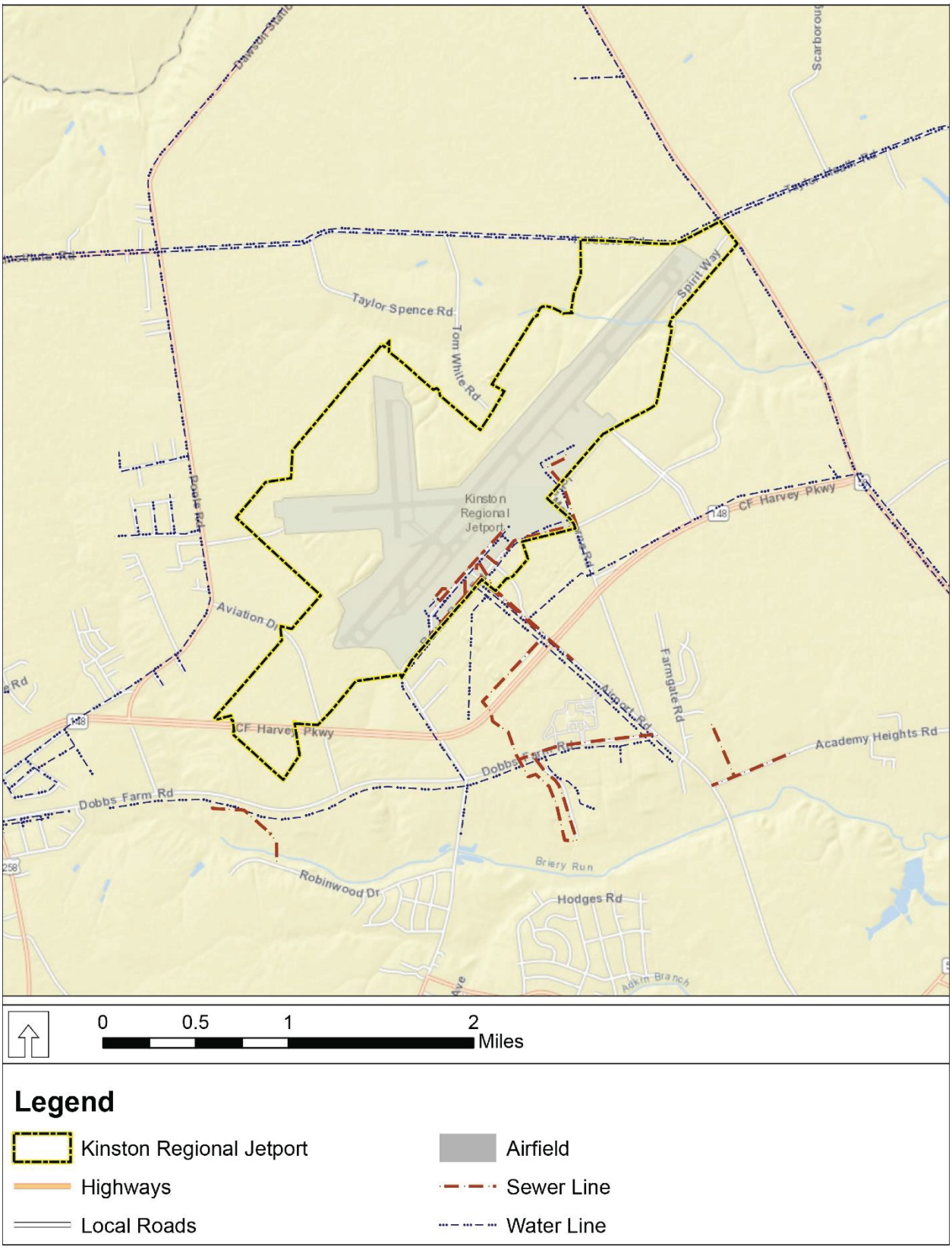


Figure 3-10. Infrastructure at Kinston Regional Jetport.

3.11.2.1 Solid Waste Management

Lenoir County owns and operates a Solid Waste Handling and Transfer Facility located near La Grange, North Carolina. Solid waste from ISO is transported there. From La Grange, waste is then transported to the Sampson County Disposal Inc. Landfill, which is a lined waste management facility located in Roseboro, North Carolina. The Transfer Facility accepts solid waste as defined in G.S. 130A-290(35); hazardous, liquid, or other prohibited materials are removed and held for proper disposal (Lenoir County, 2016).

3.11.2.2 Sanitary and Storm Sewer Systems

The City of Kinston Public Services provides water and sewer connections to the ISO and properties within the NCGTP. A 15-million-gallon-per-day surface water system is provided through the Neuse Regional Water and Sewer Authority (NRWSA), of which the City of Kinston is a member. The NRWSA maintains a high-pressure water transmission main within 1 mi of the NCGTP, as well as a water treatment facility 6.5 mi from the NCGTP. City of Kinston water lines run adjacent to the southwestern end of the runway and serve the facilities south of the runway; a NRWSA water line is located northeast of the runway along North Carolina State Road 58 (NC 58) (PBS&J, 2010). There are also two elevated water tanks within 6,000 ft of the NCGTP, on Rouse Road and Airport Road. The Northside Wastewater Treatment Plant also services the NCGTP, with the capacity to treat 11.85 million gallons per day. Both gravity and pressure fed wastewater facilities are located adjacent to the southwestern end of the runway and the facilities south of the runway (NCGTP, 2019).

The NCGTP operates under the National Pollutant Discharge Elimination System Permit No. NCS000516, which allows it to discharge stormwater from the storm sewer system to receiving waters within the Neuse River Basin. NCGTP operates under a Stormwater Management Plan to control, limit, and monitor stormwater discharge (NCGTP, 2019). As part of this plan, NCGTP tenants are required to supply a Spill Prevention and Response Plan to provide details on spill response procedures. In addition, the NCGTP Board of Directors adopted an Illicit Discharge and Connection Ordinance in 2013, which provides legal authority to prohibit pollutant discharge to the storm drainage system and streams and enforce the approved Illicit Discharge Detection and Elimination Program (NCGTP, 2019).

3.11.2.3 Transportation

Highway access to ISO and the NCGTP is provided by the C.F. Harvey Parkway, a four-lane highway that extends between US 70 to the west and NC 58 to the east. US 70 is a major highway connection between several urban centers in central North Carolina and several eastern communities, including Smithfield/Selma, Goldsboro, and New Bern. In addition, it provides a critical highway connection to the Port of Morehead City, one of the state's two deep-water ports located 80 mi east of the NCGTP. The C.F. Harvey Parkway also crosses US Highway 258 west of the NCGTP; US Highway 258 is a north-south highway that connects several communities in eastern North Carolina, including Jacksonville to the south and Murfreesboro to the north. The NCDOT is currently constructing an extension of the C.F. Harvey Parkway between the existing NC 58 terminus and North Carolina State Road 11 to the east. In 2016, existing roadway traffic was estimated at 2,400 vehicles per day (NCDOT, 2016).

Roadway access to ISO is provided via the Airport Road/Jetport Road one-way street pair that connects to the C.F. Harvey Parkway. An intersecting roadway, Rouse Road Extension, provides an alternate connection to the C.F. Harvey Parkway.

The NCGTP has rail service to the southern side of ISO via an NCDOT-owned rail spur. Gulf & Ohio Railways, Inc. operates, maintains, and markets freight service on this line, interconnecting with Norfolk Southern, which has an exclusive lease of the North Carolina Railroad Company–owned line that extends between Charlotte and Morehead City, North Carolina. The NCDOT is currently preparing an environmental study to examine a possible connection from the existing spur to the CSX AA-line north of Kinston, which would allow NCGTP to have dual rail carrier access and link the park to the Port of Wilmington.

3.11.2.4 Utilities

Electrical service is provided to the NCGTP by Duke Energy (formerly Progress Energy) and Kinston Public Services/ElectriCities. Duke Energy maintains a substation approximately 5 mi from the NCGTP on NC 58 North; the substation is fed by a 115-kilovolt (kV) transmission line and has a capacity of 12.5 megavolt amperes, of which approximately 55 percent is available. Two 23-kV feeders from the substation serve NCGTP tenants. Kinston Public Services/ElectriCities maintains two substations on Rouse Road and Airport Road. Both substations are fed by a 115-kV transmission line (NCGTP, 2019). Both providers have lines located adjacent to the runway and surrounding buildings; an ElectriCities line crosses the runway near the northeastern end (PBS&J, 2010).

Natural gas service is provided by Piedmont Natural Gas. The NCGTP is served by a series of 4-, 6-, and 8-in. gas lines, which are located throughout the park and on both sides of the runway (NCGTP, 2019). A 6-in. line is located adjacent to the southwestern end of the runway and along Rouse, Airport, and Jetport Roads. An 8-in. line runs along the northeastern corner of the runway, extending northeast along John Mewborne Road until it meets NC 58 (PBS&J, 2010).

Telecommunications fiber service is provided by dual providers, CenturyLink and GTP Fiber. GTP fiber currently serves the ISO terminal building, though both providers have lines located in proximity to the runway and associated facilities (NCGTP, 2019).

CHAPTER 4 ENVIRONMENTAL CONSEQUENCES

This chapter presents a detailed analysis of the potential environmental impacts associated with the Proposed Action, alternatives, and No Action Alternative as described in **Chapter 2**. Impacts are described for each ROI previously described in **Chapter 3**. The specific criteria for evaluating impacts and assumptions for the analyses are presented under each resource area. Evaluation criteria for most potential impacts were obtained from standard criteria; federal, state, or local agency guidelines and requirements; and/or legislative criteria.

Impacts are defined in general terms and are qualified as adverse or beneficial and as short-term or long-term. For the purposes of this EA, short-term impacts are generally considered those impacts that would have temporary effects. Long-term impacts are generally considered those impacts that would result in permanent effects.

Impacts may be direct or indirect and are described in terms of type, context, duration, and intensity, which is consistent with the CEQ regulations. “Direct effects” are caused by an action and occur at the same time and place as the action. “Indirect effects” are caused by the action and occur later in time or are farther removed from the place of impact but are reasonably foreseeable.

Impacts are defined as

- negligible, the impact is localized and not measurable or at the lowest level of detection;
- minor, the impact is localized and slight but detectable;
- moderate, the impact is readily apparent and appreciable; or
- major, the impact is severely adverse or highly noticeable and considered to be significant.

Major impacts are considered significant and receive the greatest attention in the decision-making process. The significance of an impact is assessed based on the relationship between context and intensity. Major impacts require application of a mitigation measure to achieve a less than significant impact. Moderate impacts may not meet the criteria to be classified as significant, but the degree of change is noticeable and has the potential to become significant if not effectively mitigated. Minor impacts have little to no effect on the environment and are not easily detected; impacts defined as negligible are the lowest level of detection and generally not measurable. Beneficial impacts provide desirable situations or outcomes.

CEQ regulations (at 40 CFR § 1508.20) define mitigation in the following five ways, in order of preference:

1. Avoiding the impact altogether by not taking a certain action or parts of an action.
2. Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
3. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
4. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
5. Compensating for the impact by replacing or providing substitute resources or environments.

Direct and indirect effects and their significance, as well as the means (e.g., BMPs) for reducing adverse environmental impacts where applicable are also discussed for each resource.

4.1 AIRSPACE MANAGEMENT AND USE

4.1.1 Evaluation Criteria

Adverse impacts on airspace might include modifications to special use airspaces or significantly increasing flight operations within airspaces as a result of the Proposed Action and alternatives. For the purposes of this EA, an impact is considered significant if it modifies airspace location, dimensions, or airspace operational capacity.

4.1.2 Proposed Action

Under the Proposed Action, an estimated 14 contract ADAIR aircraft would provide training sorties in Seymour Johnson airspace including the Burner ATCAA with Hatteras ATCAA/Pamlico MOAs, R-5306A and Core MOA, Gamecock A MOA, Farmville MOA, R-5314/Phelps MOA and Warning Areas W-122, W-177, W-161, and W-72 as described in **Section 1.1.2**. An estimated additional 2,720 sorties would be added to the current number of airspace sorties flown by Seymour Johnson AFB. This number includes training sorties and a smaller number of sorties for aircraft leaving and returning from either maintenance or other deployments. The number of sorties within special use airspace would increase by an estimated 2,590 sorties. Sorties in overland special use airspace would include subsonic flight operations while sorties in Warning Areas would include both subsonic and supersonic flight operations.

4.1.2.1 Alternative 1 – Kinston Regional Jetport

The addition of an estimated 2,720 sorties in the airport airspace is not expected to impact the operational capacity or necessitate changes to airspace locations or dimensions of any of the airspaces around the airport proposed for use. Potential impacts on the airspace are expected to be negligible and long-term.

There would be an increase of 2,681 annual training sorties in Burner ATCAA with Hatteras ATCAA/Pamlico MOAs, R-5306A and Core MOA, Gamecock A MOA, Farmville MOA, R-5314/Phelps MOA and Warning Areas W-122, W-177, W-161, and W-72. This equates to a 20 percent increase in aircraft operations supporting Seymour Johnson AFB in these airspaces. The number of sorties in the airspaces is greater than the number of supporting sorties from the airport because some sorties from the airport will use more than one airspace. Contract ADAIR is not expected to fly in the special use airspace during environmental night hours when the effects of aircraft noise are accentuated (10:00 pm to 7:00 am local time). This is consistent with procedures by Seymour Johnson AFB which has no existing nighttime airspace sorties.

Time spent within the special use airspace would depend upon the specific training mission performed but would typically last 25 to 60 minutes. Contractor operations would occur in the special use airspace concurrent to the 4 FW or other supported Air Force units. No airspace modifications are included as part of the Proposed Action.

The majority of all aircraft operations in the Warning Areas are from US Navy aircraft. Aircraft operations in the Hatteras ATCAA/Pamlico MOAs and R-5306A are mostly by US Marine Corps aircraft, with the remainder by Air Force aircraft. The special use airspace proposed for use have the capacity, are in locations, and have the dimensions necessary to support the additional sorties proposed under Alternative 1. Negligible impacts on airspace are expected from the implementation of Alternative 1.

4.1.3 No Action Alternative

Under the No Action Alternative, contract ADAIR would not perform sorties within the special use airspace used by Seymour Johnson AFB. Under the No Action Alternative, there would be no change to airspace use and management.

4.2 NOISE

4.2.1 Evaluation Criteria

Noise impact analysis typically evaluates potential changes to existing noise environments that would result from implementation of the Proposed Action and alternatives. At the proposed airport, below the 65-dBA DNL is the noise level at which generally all land uses are compatible with noise from aircraft operations. Areas at or above the 65-dBA DNL can also experience levels of appreciable noise depending upon training intensity or weather conditions. In addition, DNL contours may vary from year to year due to fluctuations in operational tempo and other factors. In the airspace, supersonic flight operations in the overwater Warning Areas are not expected to generate loud sonic booms on land.

Potential changes in the noise environment can be beneficial (i.e., if they reduce the number of sensitive receptors exposed to unacceptable noise levels), negligible (i.e., if the total area exposed to unacceptable noise levels is essentially unchanged), or adverse (i.e., if they result in increased noise exposure to unacceptable noise levels). Projected noise impacts were evaluated for the Proposed Action.

4.2.2 Proposed Action

The Proposed Action would have the contractor fly 2,720 sorties from the civilian airport. Trips off the airport for maintenance and some pilot proficiency time will occur during 130 of the 2,720 sorties. The rest will be dedicated to ADAIR training activity with the 4 FW within the special use airspace.

Because it is not known at this time what type of aircraft would be used by contract ADAIR, three aircraft noise scenarios were evaluated (High, Medium, and Low) to represent the range of aircraft types that could be selected. These scenarios are discussed further below. Depending on the specific type of contract ADAIR aircraft, impacts on the noise environment are expected to range from negligible to adverse and would be long-term.

Impacts from each alternative are listed in **Table 4-1**, with details regarding impacts specific to Alternative 1 described in **Section 4.2.2.1**.

Table 4-1
Summary of Noise Impacts

Alternative	Change in Noise
Alternatives 1	**High Noise Scenario:** ISO – Long-term, highly noticeable noise increases (3 to 9 dBA) for all POIs, though DNLs at POIs are below 65 dBA. Potential for moderate impacts on the all POIs as well as an increase in the amount of noise in areas surrounding the airport. Special Use Airspace – Negligible increase in noise from additional contract ADAIR subsonic flight operations including: Burner ATCAA with Hatteras ATCAA/Pamlico MOAs, Restricted Area R-5306A and Core MOA, Gamecock A MOA, Farmville MOA, Restricted Area R-5314/Phelps MOA, and Warning Areas W-122, W-177, W-161, and W-72. In the Warning Areas, negligible increase in supersonic flight operations which are not expected to generate loud sonic booms on land.
	Medium Noise Scenario: ISO – Long-term, highly noticeable noise increases (3 to 7 dBA) for all POIs, though DNLs at POIs are below 65 dBA. Potential for moderate impacts on the all POIs as well as an increase in the amount of noise in areas surrounding the airport. Special Use Airspace – Negligible increase in noise from additional contract ADAIR subsonic flight operations (as indicated above for the High Noise Scenario) and/or supersonic flight operations in Warning Areas W-122, W-177, W-161, and W-72.
	Low Noise Scenario: ISO – Long-term, highly noticeable noise increases (3 to 6 dBA) for all POIs, though DNLs at POIs are below 65 dBA. Potential for moderate impacts on the all POIs as well as an increase in the amount of noise in areas surrounding the airport. Special Use Airspace – Negligible increase in noise from additional contract ADAIR subsonic flight operations (as indicated above for the High Noise Scenario) and/or supersonic flight operations in Warning Areas W-122, W-177, W-161, and W-72.
No Action	None

ADAIR = adversary air; ATCAA = Air Traffic Control Assigned Airspace; dBA = A-weighted decibel(s); DNL = Day-Night Average Sound Level; ISO = Kinston Regional Jetport; MOA = Military Operations Area; POI = point of interest

4.2.2.1 Alternative 1 – Kinston Regional Jetport

Implementation of the Proposed Action would establish contract ADAIR capabilities (an estimated 14 aircraft) providing 2,681 annual training sorties in the special use airspace used by Seymour Johnson AFB, including Burner ATCAA with Hatteras ATCAA/Pamlico MOAs, R-5306A and Core MOA, Gamecock A MOA, Farmville MOA, R-5314/Phelps MOA, W-122, W-177, W-161, and W-72. The number of sorties in the airspaces is greater than the number of supporting sorties from the airport because some sorties from the airport will use more than one airspace.

Since the exact types of aircraft that ADAIR contractors would operate at the proposed airport is unknown, three scenarios were designed to provide a bounded analysis, which examines a range of potential impacts on the noise environment. The aircraft proposed for use by contract ADAIR and the surrogate aircraft modeled for the High, Medium, and Low Noise Scenarios are listed in **Table 4-2**.

To model changes in noise relative to the baseline conditions, all modeled contract ADAIR flight and engine run-up operations were set to the ADAIR aircraft listed in **Table 4-2** for the appropriate scenario. For example, when looking at the High Noise Scenario, all contract ADAIR operations are modeled as A-4K operations; however, the NOISEMAP database does not contain noise data for the A-4K, so an appropriate noise modeling surrogate was selected, the A-4C in this case. The noise modeling surrogates for various aircraft listed in **Table 4-2** have been approved for use by the Air Force Civil Engineer Center (AFCEC) NEPA Division (CZN) and Noise and Air Installation Compatible Use Zone Division. Flight profiles for contract ADAIR (i.e., schedules of altitude, power setting, and airspeed along each flight track) were reviewed and approved by the operators at Seymour Johnson AFB and ACC. The representative flight profiles for the various contract ADAIR scenarios are provided in **Appendix B**. All contract ADAIR departure profiles were modeled using afterburner or the maximum possible power on all takeoffs. The modeling represents the loudest noise levels for this class of surrogate aircraft and engine types that would be experienced as a result of the Proposed Action.

Table 4-2
Contract Adversary Air Noise Scenarios

Scenario	Adversary Air Aircraft	Surrogate Aircraft
High Noise Scenario	A-4K	A-4C
Medium Noise Scenario	F-5	F-5E
Low Noise Scenario	T-59	T-45

High Noise Scenario

Under the High Noise Scenario, all contract ADAIR operations are assumed to be performed by A-4K aircraft. Since noise data for the A-4K are not available in NOISEMAP, the A-4C was used as a modeling surrogate. Implementation of the Proposed Action High Noise Scenario would result in a 30 percent increase in the number of operations at ISO. Contract ADAIR would fly up to a projected 2 percent of the estimated total 2,720 additional sorties during environmental night hours when the effects of aircraft noise are accentuated (10:00 pm to 7:00 am local time). This equates to an increase of approximately 98 operations per year, a 26 percent increase above existing night operations. Contractor night sorties would be flown during the Seymour Johnson AFB approved flying window. Runway utilization, flight tracks, and flight track utilization for contract ADAIR aircraft would be similar to the existing aircraft operations. Proposed annual departure, arrival, and closed pattern aircraft operations at ISO with the addition of contract ADAIR are listed in **Table 4-3**. Contract ADAIR would also perform static run-up operations, such as pre- and postflight run-ups.

Table 4-3
Proposed High Noise Scenario Annual Aircraft Operations Summary at Kinston Regional Jetport

Aircraft	Departures		Arrivals		Closed Patterns		Total Operations		
	Day	Night	Day	Night	Day	Night	Day	Night	Total
Military	1,557	61	1,557	61	5,694	176	8,808	298	9,106
Based Civilian	1,916	0	1,916	0	4,266	0	8,098	0	8,098
Transient Civilian	1,668	42	1,668	42	0	0	3,336	84	3,420
Adversary Air	2,671	49	2,671	49	768	0	6,110	98	6,208
Grand Total	**7,812**	**152**	**7,812**	**152**	**10,728**	**176**	**26,352**	**480**	**26,832**

As described in **Section 3.2.1.2**, AEDT was used to model civilian aircraft noise and NOISEMAP was used to model military aircraft noise. The resultant 65- to 85-dBA DNL contours in 5-dBA increments for the daily flight events at ISO under the proposed High Noise Scenario are depicted on **Figure 4-1**. The 65-dBA DNL is the noise level below which generally all land uses are compatible with noise from aircraft operations.

The primary changes in noise contour features between the High Noise Scenario and the existing conditions would be the elongation of the DNL contours along the extended centerline of Runway 05/23 and the slight expansion perpendicular to the runway. Since operations are predominately to the north, the dominant factor in this increase in noise off the approach end of Runway 05 is from contract ADAIR straight-in arrivals, whereas the increase in noise off the departure end of Runway 05 is from ADAIR straight-out departures. The noise levels generated by High Noise Scenario contract ADAIR aircraft would increase the overall noise environment. A comparison of the DNL noise contours of the High Noise Scenario and the existing conditions is depicted on **Figure 4-2**, and the change in area within noise contours as a result of the High Noise Scenario is listed in **Table 4-4**.

As a result of the implementation of the High Noise Scenario, noise levels at representative POIs described in **Section 3.2.2** would increase (**Table 4-5**).

At the representative noise sensitive locations modeled, the DNL would increase by an amount ranging from 3 to 9 dBA under the High Noise Scenario. A DNL increase of greater than 3 dBA would be clearly noticeable and may increase human annoyance. If unmitigated, impacts from a greater-than-3-dBA DNL increase along with a DNL of 65 dBA or above potentially would be significant. A total of 19 POIs would have a greater-than-3-dBA DNL increase, and 5 POIs would have a 3-dBA DNL increase, though the DNLs at all POIs are below 65 dBA. None of the POIs examined would experience negligible to minor DNL increases of 0 to 2 dBA. The increased DNL at POIs and the surrounding areas would be long-term, noticeable, and potentially moderate under the High Noise Scenario for Alternative 1.

Medium Noise Scenario

Under the Medium Noise Scenario, all contract ADAIR operations are assumed to be performed by F-5 aircraft. Since noise data for the F-5 are not available in NOISEMAP, the F-5E was used as a modeling surrogate. Implementation of the Proposed Action Medium Noise Scenario would result in a 30 percent increase in the number of operations at ISO. Contract ADAIR would fly up to a projected 2 percent of the estimated total 2,720 additional sorties during environmental night hours when the effects of aircraft noise are accentuated (10:00 pm to 7:00 am local time). This equates to an increase of approximately 98 operations per year, a 26 percent increase above existing night operations. Contractor night sorties would be flown during the Seymour Johnson AFB approved flying window. Runway utilization, flight tracks, and flight track utilization for contract ADAIR aircraft would be similar to the existing aircraft operations. Proposed annual departure, arrival, and closed pattern aircraft operations at ISO with the addition of contract ADAIR are listed in **Table 4-6**. Contract ADAIR would also perform static run-up operations, such as pre- and postflight run-ups.

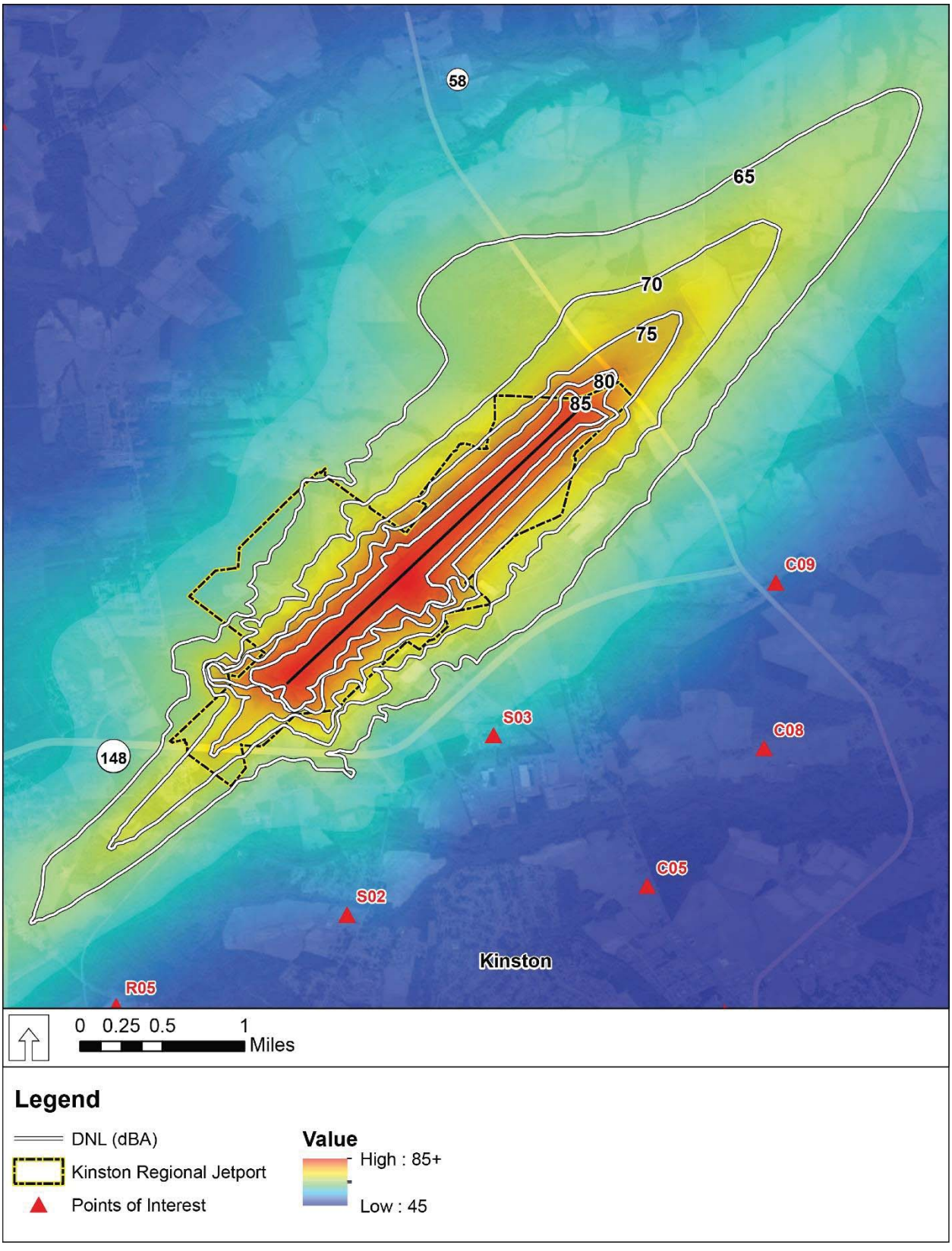


Figure 4-1. High Noise Scenario Day-Night Average Sound Level Contours at Kinston Regional Jetport.

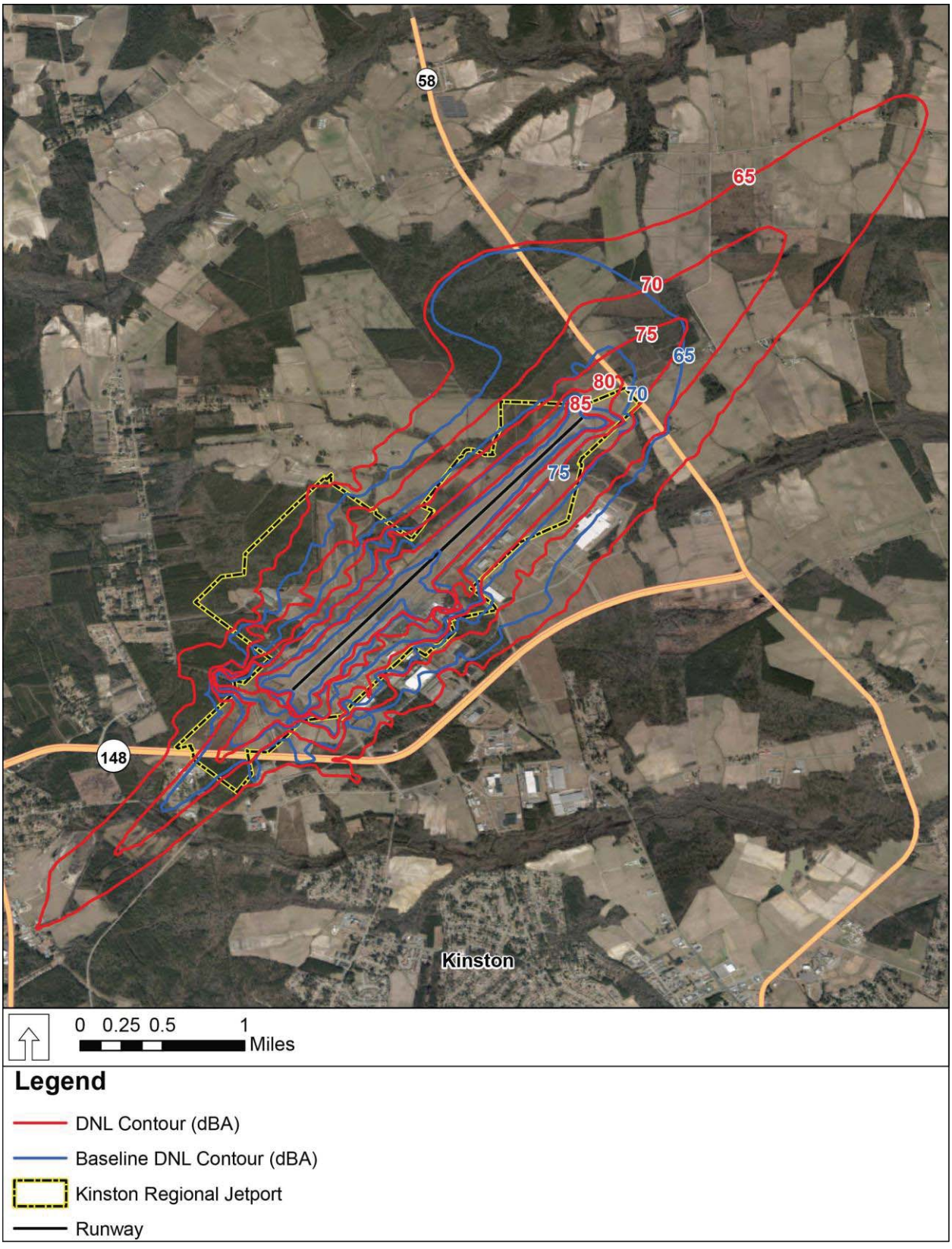


Figure 4-2. Comparison of High Noise Scenario and Existing Day-Night Average Sound Level Contours at Kinston Regional Jetport.

Table 4-4
Proposed High Noise Scenario Day-Night Average Sound Level Area Affected on and Surrounding Kinston Regional Jetport

Noise Level (dBA DNL)	Area Within Noise Contour (acres)		
	Existing	High Noise Scenario	Increase
>65	2,154	3,786	1,632
>70	1,009	1,818	809
>75	580	948	368
>80	296	535	239
>85	111	290	179

dBA = A-weighted decibel(s); DNL = Day-Night Average Sound Level

Table 4-5
Proposed High Noise Scenario Day-Night Average Sound Level at Representative Points of Interest on and near Kinston Regional Jetport

POIs		DNL (dBA)		
ID	Description	Existing	High Noise Scenario	Increase in DNL
C01	Emmanuel Hill Church	<45	<45	4
C02	St. Mary's Episcopal Church	<45	<45	5
C03	Present Truth Ministries	<45	<45	3
C04	Jehovah's Witnesses Kingdom Hall	<45	<45	3
C05	Immanuel Baptist Church	<45	47	3
C06	Holly Hill Church	47	55	8
C07	First Free Will Baptist Church	<45	<45	6
C08	Holy Spirit Catholic Church	46	49	3
C09	Jones Shekinah Church	52	56	4
C10	Jumping Run Christian Academy	<45	<45	4
C11	Airy Grove Church	50	59	9
C12	Jehovah's Witnesses Kingdom Hall	<45	46	4
R01	Kinston-Lenoir Public Library	<45	<45	4
R02	Caswell Center	<45	<45	4
R03	Kinston Country Club	<45	<45	5
R04	Lenoir Memorial Hospital	<45	<45	4
R05	Practice Tee	47	54	7
R06	Cutter Creek Golf Club	<45	<45	4
R07	Pine Knoll Dr	45	53	8
S01	Bethel Christian Academy	45	53	8
S02	First Baptist Church Preschool	51	56	5
S03	Arendell Parrott Academy	55	59	4
S04	Contentnea-Savannah Middle School	<45	<45	3
S05	North Lenoir High School	<45	<45	4

Note: Affected POIs based off NOISEMAP modeled noise contours and used to calculate the POIs within each noise contour. Increase in DNL based on actual estimated DNL values for cases where <45 dBA is reported.

dBA = A-weighted decibel; DNL = Day-Night Average Sound Level; POI = point of interest

Table 4-6
Proposed Medium Noise Scenario Annual Aircraft Operations Summary at Kinston Regional Jetport

Aircraft	Departures		Arrivals		Closed Patterns		Total Operations		
	Day	Night	Day	Night	Day	Night	Day	Night	Total
Military	1,557	61	1,557	61	5,694	176	8,808	298	9,106
Based Civilian	1,916	0	1,916	0	4,266	0	8,098	0	8,098
Transient Civilian	1,668	42	1,668	42	0	0	3,336	84	3,420
Adversary Air	2,671	49	2,671	49	768	0	6,110	98	6,208
Grand Total	**7,812**	**152**	**7,812**	**152**	**10,728**	**176**	**26,352**	**480**	**26,832**

As described in **Section 3.2.1.2**, AEDT was used to model civilian aircraft noise, and NOISEMAP was used to model military aircraft noise. The resultant 65- to 85-dBA DNL contours in 5-dBA increments for the daily flight events at ISO under the proposed Medium Noise Scenario are depicted on **Figure 4-3**. The 65-dBA DNL is the noise level below which generally all land uses are compatible with noise from aircraft operations.

The primary changes in noise contour features between the Medium Noise Scenario and the existing conditions would be the elongation of the DNL contours along the extended centerline of Runway 05/23 and slight expansion perpendicular to the runway. Since operations are predominately to the north, the dominant factor in this increase in noise off the approach end of Runway 05 is from contract ADAIR straight-in arrivals, whereas the increase in noise off the departure end of Runway 05 is from ADAIR straight-out departures. The noise levels generated by Medium Noise Scenario contract ADAIR aircraft would increase the overall noise environment. A comparison of the DNL noise contours of the Medium Noise Scenario and the existing conditions is depicted on **Figure 4-4**, and the change in area within noise contours as a result of the Medium Noise Scenario is listed in **Table 4-7**.

As a result of the implementation of the Medium Noise Scenario, noise levels at representative POIs described in **Section 3.2.2** would increase (**Table 4-8**).

At the representative noise sensitive locations modeled, the DNL would increase by an amount ranging from 3 to 7 dBA under the Medium Noise Scenario. A DNL increase greater than 3 dBA would be clearly noticeable and may increase human annoyance. If unmitigated, impacts from a greater-than-3-dBA DNL increase along with a DNL at or above 65 dBA potentially would be significant. All 24 POIs would have a DNL increase of 3 dBA or greater under the Medium Noise Scenario though DNLs at all POIs are below 65 dBA. The increased DNL at these POIs and the surrounding areas would be long-term, noticeable, and potentially moderate impact under the Medium Noise Scenario for Alternative 1.

Low Noise Scenario

Under the Low Noise Scenario, all contract ADAIR operations are assumed to be performed by T-59 aircraft. Since noise data for the T-59 are not available in NOISEMAP, the T-45 was used as a modeling surrogate. Implementation of the Proposed Action Low Noise Scenario would result in a 30 percent increase in the number of operations at ISO. Contract ADAIR would fly up to a projected 2 percent of the estimated total 2,720 additional sorties during environmental night hours when the effects of aircraft noise are accentuated (10:00 pm to 7:00 am local time). This equates to an increase of approximately 98 operations per year, a 26 percent increase above existing night operations. Contractor night sorties would be flown during the Seymour Johnson AFB approved flying window. Runway utilization, flight tracks, and flight track utilization for contract ADAIR aircraft would be similar to the existing aircraft operations. Proposed annual departure, arrival, and closed pattern aircraft operations at ISO with the addition of contract ADAIR are listed in **Table 4-9**. Contract ADAIR would also perform static run-up operations, such as pre- and postflight run-ups.

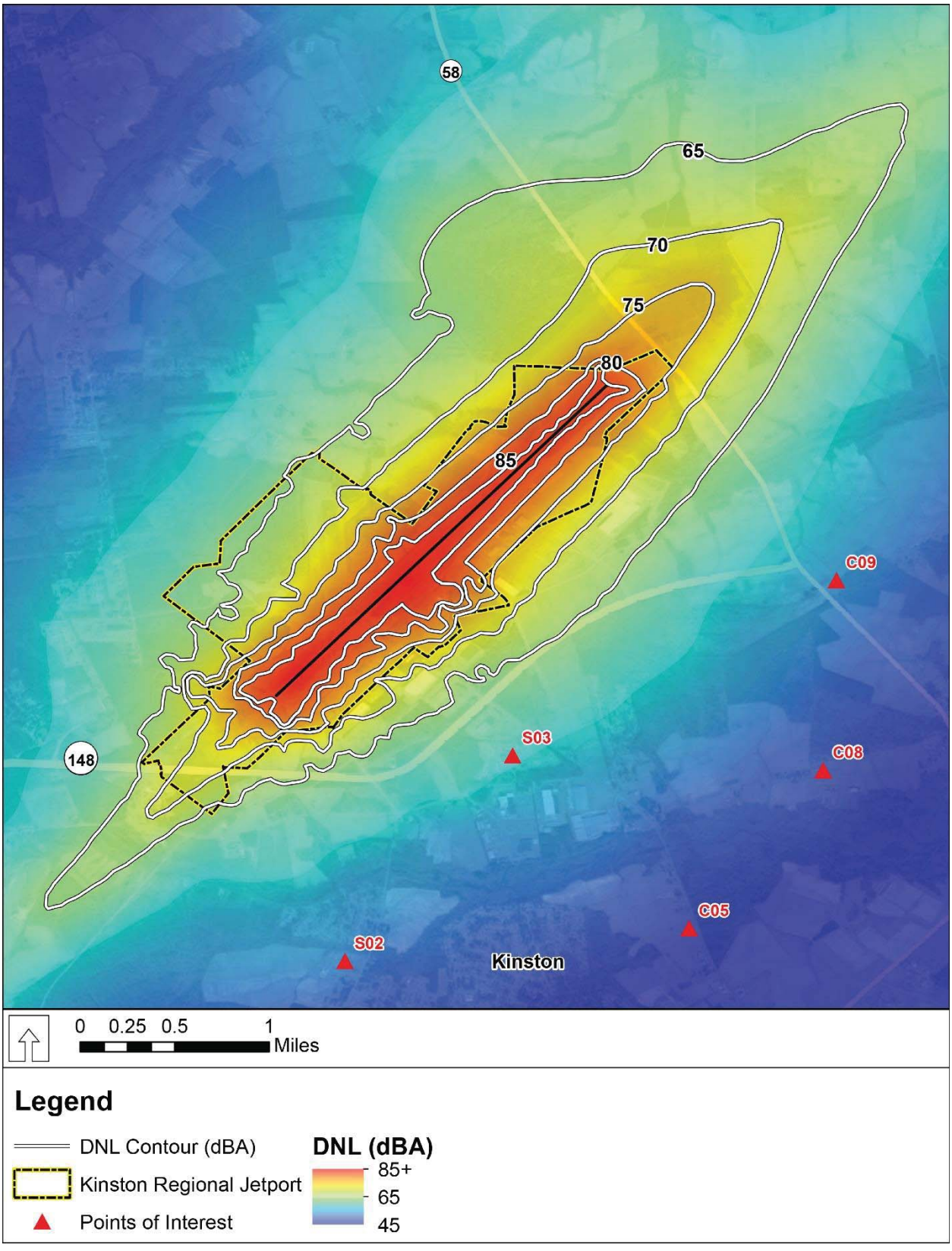


Figure 4-3. Medium Noise Scenario Day-Night Average Sound Level Contours at Kinston Regional Jetport.

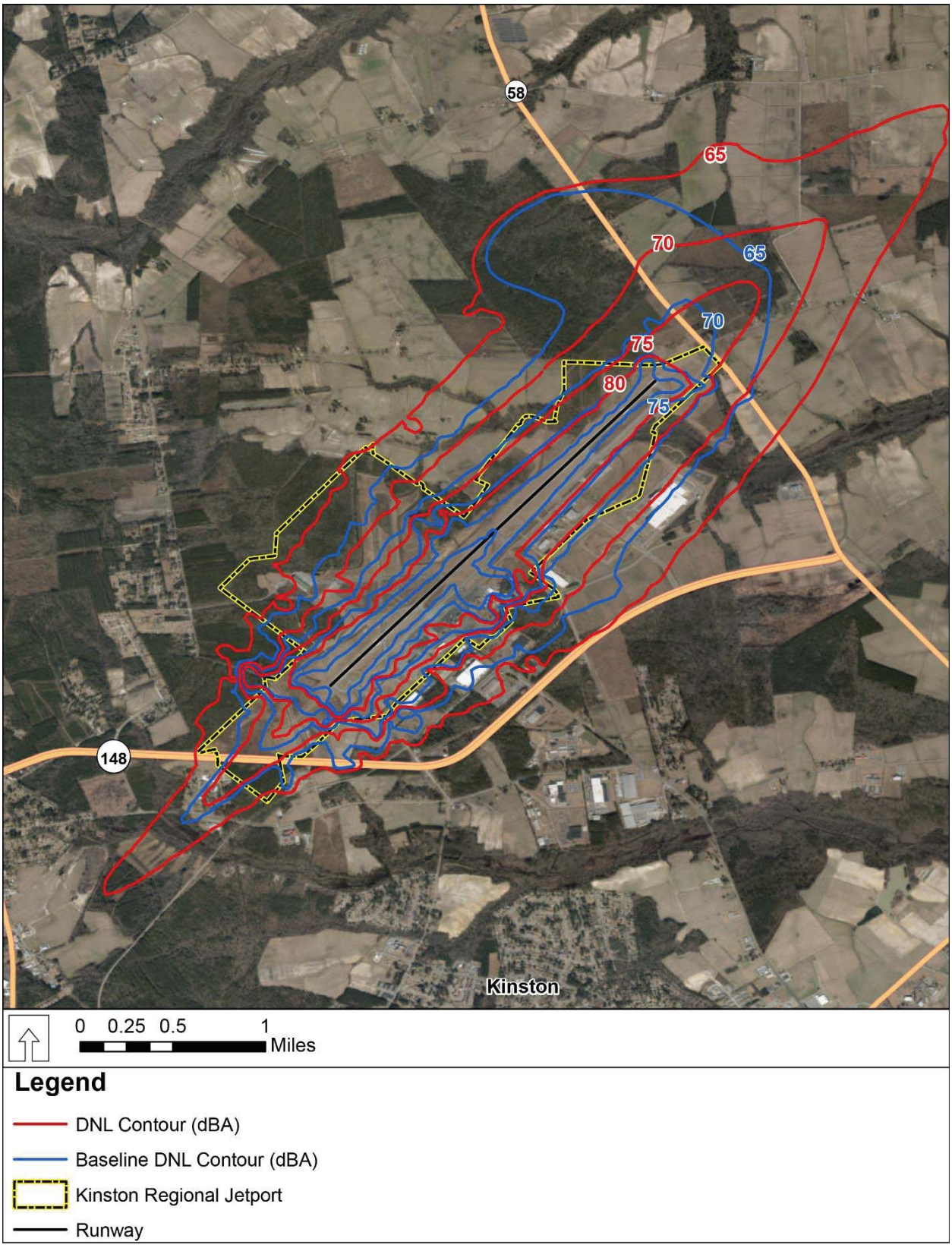


Figure 4-4. Comparison of Medium Noise Scenario and Existing Day-Night Average Sound Level Contours at Kinston Regional Jetport.

Table 4-7
Proposed Medium Noise Scenario Day-Night Average Sound Level Area Affected on and Surrounding Kinston Regional Jetport

Noise Level (dBA DNL)	Area Within Noise Contour (acres)		
	Existing	Medium Noise Scenario	Increase
>65	2,154	3,460	1,306
>70	1,009	1,696	687
>75	580	901	321
>80	296	470	174
>85	111	228	117

dBA = A-weighted decibel(s); DNL = Day-Night Average Sound Level

Table 4-8
Proposed Medium Noise Scenario Day-Night Average Sound Level at Representative Points of Interest on and near Kinston Regional Jetport

POIs		DNL (dBA)		
ID	Description	Existing	Medium Noise Scenario	Increase in DNL
C01	Emmanuel Hill Church	<45	<45	3
C02	St. Mary's Episcopal Church	<45	<45	4
C03	Present Truth Ministries	<45	<45	4
C04	Jehovah's Witnesses Kingdom Hall	<45	<45	4
C05	Immanuel Baptist Church	<45	47	3
C06	Holly Hill Church	47	52	5
C07	First Free Will Baptist Church	<45	<45	5
C08	Holy Spirit Catholic Church	46	51	5
C09	Jones Shekinah Church	52	57	5
C10	Jumping Run Christian Academy	<45	<45	3
C11	Airy Grove Church	50	57	7
C12	Jehovah's Witnesses Kingdom Hall	<45	46	4
R01	Kinston-Lenoir Public Library	<45	<45	4
R02	Caswell Center	<45	<45	4
R03	Kinston Country Club	<45	<45	4
R04	Lenoir Memorial Hospital	<45	<45	5
R05	Practice Tee	47	53	6
R06	Cutter Creek Golf Club	<45	<45	4
R07	Pine Knoll Dr	45	51	6
S01	Bethel Christian Academy	45	51	6
S02	First Baptist Church Preschool	51	55	4
S03	Arendell Parrott Academy	55	60	5
S04	Contentnea-Savannah Middle School	<45	<45	4
S05	North Lenoir High School	<45	<45	3

Note: Affected POIs based off NOISEMAP modeled noise contours and used to calculate the POIs within each noise contour. Increase in DNL based on actual estimated DNL values for cases where <45 dBA is reported.

dBA = A-weighted decibel; DNL = Day-Night Average Sound Level; POI = point of interest

Table 4-9
Proposed Low Noise Scenario Annual Aircraft Operations Summary at Kinston Regional Jetport

Aircraft	Departures		Arrivals		Closed Patterns		Total Operations		
	Day	Night	Day	Night	Day	Night	Day	Night	Total
Military	1,557	61	1,557	61	5,694	176	8,808	298	9,106
Based Civilian	1,916	0	1,916	0	4,266	0	8,098	0	8,098
Transient Civilian	1,668	42	1,668	42	0	0	3,336	84	3,420
Adversary Air	2,671	49	2,671	49	768	0	6,110	98	6,208
Grand Total	**7,812**	**152**	**7,812**	**152**	**10,728**	**176**	**26,352**	**480**	**26,832**

As described in **Section 3.2.1.2**, AEDT was used to model civilian aircraft noise and NOISEMAP was used to model military aircraft noise. The resultant 65- to 85-dBA DNL contours in 5-dBA increments for the daily flight events at ISO under the proposed Low Noise Scenario are depicted on **Figure 4-5**. The 65-dBA DNL is the noise level below which generally all land uses are compatible with noise from aircraft operations.

The primary changes in noise contour features between the Low Noise Scenario and the existing conditions would be the elongation of the DNL contours along the extended centerline of Runway 05/23 and the slight expansion perpendicular to the runway. Since operations are predominately to the north, the dominant factor in this increase in noise off the approach end of Runway 05 is from contract ADAIR straight-in arrivals whereas the increase in noise off the departure end of Runway 05 is from ADAIR straight-out departures. The noise levels generated by Low Noise Scenario contract ADAIR aircraft would increase the overall noise environment. A comparison of the DNL noise contours of the Low Noise Scenario and the existing conditions is depicted on **Figure 4-6**, and the change in area within noise contours as a result of the Low Noise Scenario is listed in **Table 4-10**.

As a result of the implementation of the Low Noise Scenario, noise levels at representative POIs described in **Section 3.2.2** would increase (**Table 4-11**).

At the representative noise sensitive locations modeled, the DNL would increase by an amount ranging from 3 to 6 dBA under the Low Noise Scenario. A DNL increase greater than 3 dBA would be clearly noticeable and may increase human annoyance. If unmitigated, impacts from a greater-than-3-dBA DNL increase along with a DNL at or above 65 dBA potentially would be significant. All 24 POIs would have a DNL increase of 3 dBA or greater, though DNLs at all POIs are below 65 dBA. The increased DNL at these POIs and the surrounding areas would be long-term, noticeable, and potentially moderate under the Low Noise Scenario for Alternative 1.

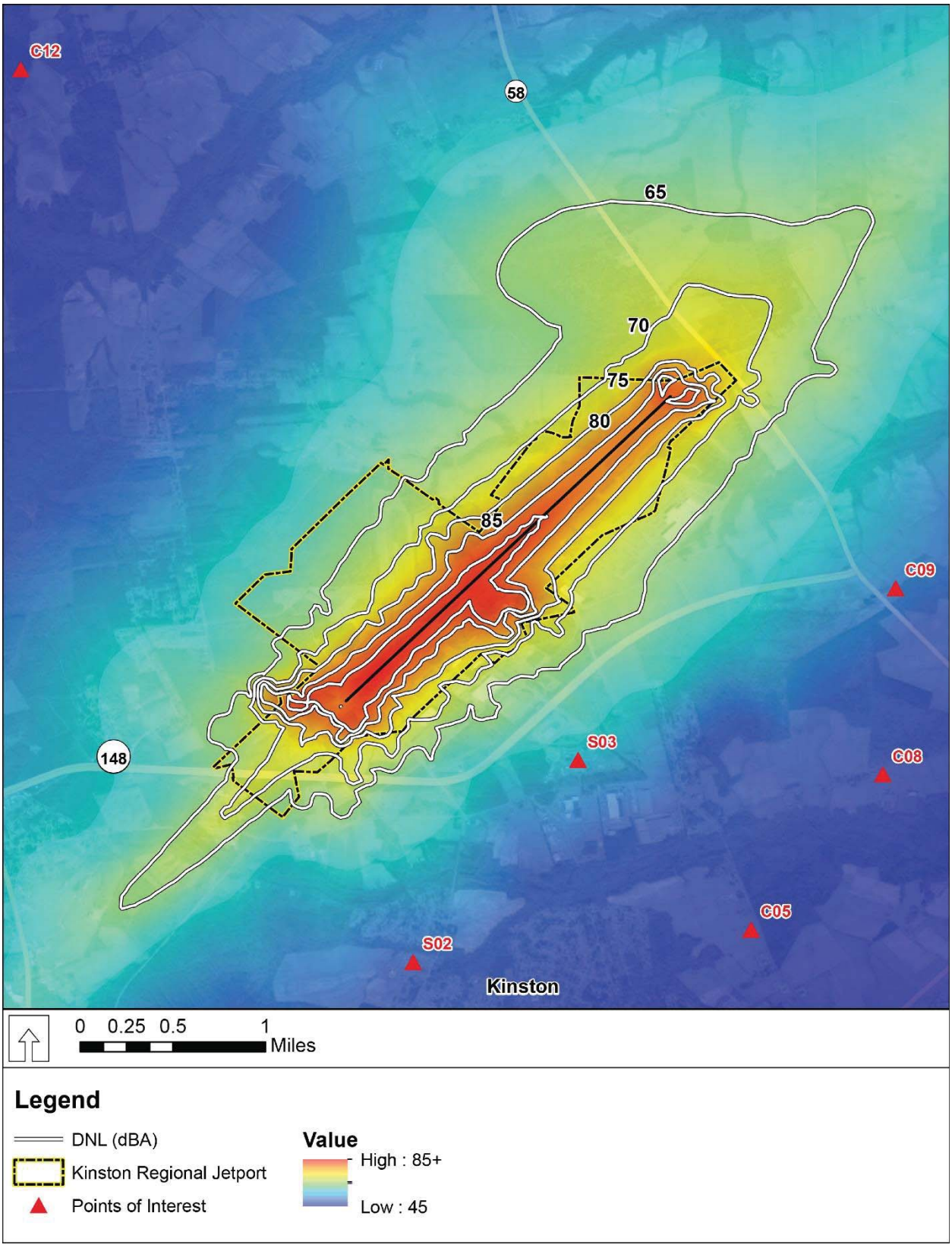


Figure 4-5. Low Noise Scenario Day-Night Average Sound Level Contours at Kinston Regional Jetport.

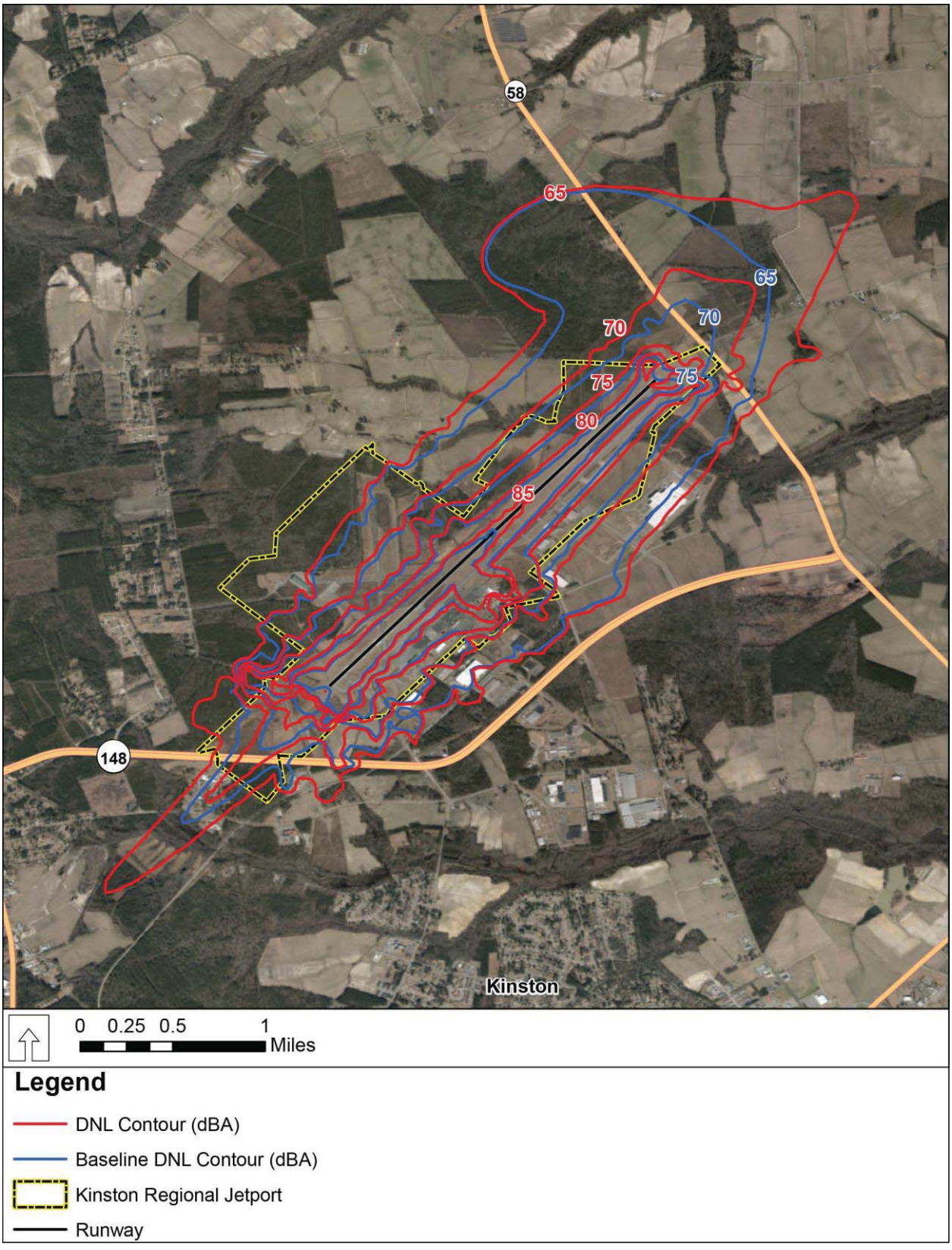


Figure 4-6. Comparison of Low Noise Scenario and Existing Day-Night Average Sound Level Contours at Kinston Regional Jetport.

Table 4-10
Proposed Low Noise Scenario Day-Night Average Sound Level Area Affected on and Surrounding Kinston Regional Jetport

Noise Level (dBA DNL)	Area Within Noise Contour (acres)		
	Existing	Low Noise Scenario	Increase
>65	2,154	2,668	514
>70	1,009	1,231	222
>75	580	664	84
>80	296	366	70
>85	111	144	33

dBA = A-weighted decibel(s); DNL = Day-Night Average Sound Level

Table 4-11
Proposed Low Noise Scenario Day-Night Average Sound Level at Representative Points of Interest on and near Kinston Regional Jetport

POIs		DNL (dBA)		
ID	Description	Existing	Low Noise Scenario	Increase in DNL
C01	Emmanuel Hill Church	<45	<45	5
C02	St. Mary's Episcopal Church	<45	<45	4
C03	Present Truth Ministries	<45	<45	4
C04	Jehovah's Witnesses Kingdom Hall	<45	<45	4
C05	Immanuel Baptist Church	<45	47	3
C06	Holly Hill Church	47	53	6
C07	First Free Will Baptist Church	<45	<45	6
C08	Holy Spirit Catholic Church	46	49	3
C09	Jones Shekinah Church	52	56	4
C10	Jumping Run Christian Academy	<45	<45	5
C11	Airy Grove Church	50	56	6
C12	Jehovah's Witnesses Kingdom Hall	<45	46	4
R01	Kinston-Lenoir Public Library	<45	<45	5
R02	Caswell Center	<45	<45	5
R03	Kinston Country Club	<45	<45	4
R04	Lenoir Memorial Hospital	<45	<45	4
R05	Practice Tee	47	52	5
R06	Cutter Creek Golf Club	<45	<45	5
R07	Pine Knoll Dr	45	51	6
S01	Bethel Christian Academy	45	51	6
S02	First Baptist Church Preschool	51	56	5
S03	Arendell Parrott Academy	55	59	4
S04	Contentnea-Savannah Middle School	<45	<45	4
S05	North Lenoir High School	<45	<45	4

Note: Affected POIs based off NOISEMAP modeled noise contours and used to calculate the POIs within each noise contour. Increase in DNL based on actual estimated DNL values for cases where <45 dBA is reported.

dBA = A-weighted decibel; DNL = Day-Night Average Sound Level; POI = point of interest

4.2.2.2 Alternative 1 – Airspace

Under the High, Medium, or Low Noise Scenarios, contract ADAIR would perform an estimated 2,681 annual operations in the special use airspace proposed for use. Contract ADAIR would only operate in the same airspaces already used by based Seymour Johnson AFB aircraft; approximately 73 percent of ADAIR flight operations would occur in W-122. No night operations would be conducted in the special use airspace. A summary of annual airspace operations for Seymour Johnson AFB and ADAIR aircraft is presented in **Table 4-12**.

Table 4-12
Proposed Annual Airspace Operations Summary by Seymour Johnson Air Force Base and Adversary Air Aircraft (All Scenarios)

Airspace	Aircraft				Projected Total Sorties
	F-15E		Adversary Air		
	Day	Night	Day*	Night	
Warning Area W-122	6,297	0	1,968	0	8,265
Burner ATCAA with Hatteras ATCAA/ Pamlico MOAs	786	0	197	0	983
Restricted Area R-5306A and Core MOA	786	0	49	0	835
Echo MOA	1,419	0	49	0	1,468
Gamecock A MOA	1,047	0	49	0	1,096
Farmville MOA	1,055	0	197	0	1,252
Restricted Area R-5314/Phelps MOA	1,726	0	74	0	1,800
Warning Area W-177	135	0	39	0	174
Warning Area W-161	135	0	39	0	174
Warning Area W-72	135	0	20	0	155
Total Operations	13,521	0	2,681	0	16,202

Note:
* While 2,590 sorties would be flown from the selected airport, this totals more than 2,590 because training operations are proposed for multiple airspaces scheduled concurrently.

ATCAA = Air Traffic Control Assigned Airspace; MOA = Military Operations Area

Noise analysis of the High, Medium, and Low Noise Scenarios was conducted to analyze changes to the noise levels in the proposed special use airspaces listed in **Table 4-12**. **Table 4-13** shows that under the High, Medium, or Low Noise Scenarios, the noise environment for these MOAs and Restricted Areas is identical to the baseline airspace noise environment; therefore, there would be no significant impacts under the High, Medium or Low Noise Scenarios under Alternatives 1.

As previously discussed in **Section 3.1.3** aircraft operations from the US Navy make up the vast majority of total air operations in W-72 and W-122, while aircraft operations from the US Marine Corps and other users make up the vast majority of total air operations in W-161 and W-177. The increase in airspace operations from contract ADAIR in these Warning Areas would be less than significant to the overall noise environment given the disparity between the number of US Navy operations or Marine Corps operations and Air Force operations.

Table 4-13
Existing and Proposed Noise Levels in Airspaces

Airspace	Baseline Noise Level (L_{dnmr} dB)	ADAIR High Noise Scenario Noise Level (L_{dnmr} dB)	ADAIR Medium Noise Scenario Noise Level (L_{dnmr} dB)	ADAIR Low Noise Scenario Noise Level (L_{dnmr} dB)
Burner ATCAA with Hatteras ATCAA/Pamlico MOAs	<45	<45	<45	<45
Restricted Area R-5306A and Core MOA	51	51	51	51
Echo MOA	<45	<45	<45	<45
Gamecock A MOA	45	45	45	45
Farmville MOA	57	57	57	57
Restricted Area R-5314/Phelps MOA	57	57	57	57

ADAIR = adversary air; ATCAA = Air Traffic Control Assigned Airspace; dB = decibel(s); L_{dnmr} = Onset-Rate Adjusted Monthly Day-Night Average Sound Level; MOA = Military Operations Area

Single event sonic boom levels were estimated, using the PCBoom program described in **Section 3.2.1.2**, directly undertrack for contract ADAIR supersonic flights in W-122, W-177, W-161, and W-72. The single event levels listed in **Table 4-14** include Overpressure (psf) and CSEL in decibels for the ADAIR Medium Noise Scenario F-5, and the F-15E for comparison, at various altitudes and Mach numbers.

The sonic boom levels listed in **Table 4-14** are the loudest levels computed at the center of the footprint for the constant Mach, level flight conditions indicated. Supersonic flights in W-122, W-177, W-161, and W-72 occur at high altitudes and are expected to occur more than 15 NM from the coast. The location of these booms would vary with changing flight paths and weather conditions, so it is unlikely that any given location would experience these undertrack levels more than once over multiple events. Overpressure levels, directly under the flight path, estimated for these airspaces would range from 5.5 to 1.0 psf depending on the aircraft and flight conditions. In general, public reaction (limited to vessels 15 NM from shore) may occur with overpressures above 1 psf, and in rare instances, damage to structures have occurred at overpressures between 2 and 5 psf (NASA, 2017b). People located farther away from the supersonic flight paths, who are still within the primary boom carpet, might also be exposed to levels that may be startling or annoying, but the probability of this decreases the farther away they are from the flight path. Populated areas on the coast are not expected to be exposed to levels that would be startling or annoying although postboom rumbling sounds may be heard. The addition of contractor aircraft operating at supersonic speeds means that the number of sonic booms would increase; however, potential impacts associated with sonic booms are still expected to be negligible under Alternatives 1.

4.2.3 No Action Alternative

Under the No Action Alternative, contract ADAIR would not perform sorties at airspace used by Seymour Johnson AFB. Under the No Action Alternative, there would be no change to the noise environment.

Table 4-14
Warning Areas W-122, W-177, W-161, and W-72: Sonic Boom Levels Undertrack for Adversary Air Aircraft in Level Flight at Mach 1.2 and 1.3

Aircraft	Altitude (feet above mean sea level)			
	10,000	20,000	30,000	35,000
Mach 1.2				
Overpressure (psf)				
F-15E	5.2	2.8	1.8	1.6
F-5[1]	3.3	1.8	1.2	1.0
C-Weighted Sound Exposure Level (dB)*				
F-15E	116	110	107	106
F-5[1]	112	107	103	102
Mach 1.3				
Overpressure (psf)				
F-15E	5.5	2.9	1.9	1.6
F-5[1]	3.5	1.9	1.2	1.0
C-Weighted Sound Exposure Level (dB)*				
F-15E	116	111	107	106
F-5[1]	112	107	103	102

Notes:
* As modelled with the surrogate F-5E

C-weighted Sound Exposure Level – Sound Exposure Level with frequency weighting that places more emphasis on low frequencies below 1,000 hertz

dB = decibel(s); psf = pound(s) per square foot

4.3 SAFETY

4.3.1 Evaluation Criteria

Impacts from implementation of the Proposed Action are assessed according to the potential for an increase or decrease in safety risks to personnel, the public, property, or the environment. Adverse impacts on safety might include implementing contractor flight procedures that result in greater safety risk or constructing new buildings within established Q-D safety arcs. For the purposes of this EA, an impact is considered significant if the proposed safety measures are not consistent with FAA, NTSB, OSHA, or other applicable standards resulting in unacceptable safety risks.

Safety concerns associated with ground, explosive, and flight activities are considered in this section. Ground safety considers issues associated with ground operations and maintenance activities that support operations including jet blast/maintenance testing and safety danger zones. Ground safety also considers the safety of personnel and facilities on the ground that may be placed at risk from flight operations in the vicinity of the airport and in the airspace.

The RPZs around the airport restrict the public's exposure to areas where there is a higher accident potential. Although ground and flight safety are addressed separately, in the immediate vicinity of the runway, risks associated with safety-of-flight issues are interrelated with ground safety concerns. Explosives safety relates to the management and safe use of ordnance and munitions. Flight safety considers aircraft flight risks such as midair collision, BASH, and in-flight emergency requirements. Contractor planes would follow Air Force safety procedures and aircraft specific emergency procedures based on the aircraft design. Basic airmanship procedures also exist for handling any deviations to ATC procedures due to an in-flight emergency; the Air Force guidance contract ADAIR would be required to follow are specified in DCMA INST 8210.1C and include AFI 10-220_IP (AFMC Supplement), (Manned/UAS) AFI 11-202, Volumes 1–3 and applicable AFMC

supplements; AFI 11-2FT, Volumes 1–3; AFI 11-401, AFI 11-301, AFI 16-1301, and applicable AFMC supplements; (SUAS) AFI-11-502 Volumes 1–3 and applicable AFMC supplements; AFI 11-5FT Volumes 1--3, and established aircraft flight manuals. The Flight Crew Information File is a safety resource for aircrew day-to-day operations which is composed of air and ground operation rules and procedures.

4.3.2 Proposed Action

The Proposed Action includes contracting for the support of an estimated 14 contractor aircraft to fly an estimated 2,720 annual sorties from the civilian airport to train with the 4 FW in the Seymour Johnson AFB special use airspace.

Impacts to safety are negligible and long-term and are summarized **Table 4-15.** Additional details of the potential safety changes under Alternative 1 described in **Section 4.3.2.1**.

Table 4-15
Summary of Potential Safety Impacts

Alternative	Change in Safety Procedure
Alternative 1	**Ground Safety:** *Emergency Response:* No significant impacts on emergency response are anticipated to occur provided the contractor establishes a CDDAR program and all applicable FAA, NTSB, and OSHA requirements are implemented. *Safety Zones:* Safety zones around the airport would not change. **Explosives Safety:** Contract ADAIR would work with the airport safety office to obtain a license, if needed, to store egress cartridge-activated and propellant-activated devices and comply with all federal, state, and local directives governing the security, storage, and handling of munitions, including meeting minimal facility safety requirements and separation distances for storage and maintenance facilities. Construction of additional facilities would be considered under separate environmental analysis. Quantity-Distance arcs would need to be established around new explosives storage facilities at the select airport to identify the change in safety procedures and establish safety zones around these facilities. **Flight Safety:** No significant impacts on airspace/flight safety are anticipated to occur provided that contractor flight safety rules are followed, and all applicable airport, FAA, NTSB, and OSHA requirements are implemented.
No Action	None

ADAIR = adversary air; CDDAR = Crash Damaged or Disabled Aircraft Recovery; FAA = Federal Aviation Administration; NTSB = National Transportation Safety Board; OSHA = Occupational Safety and Health Administration

4.3.2.1 Alternative 1 – Kinston Regional Jetport and Airspace

Changes to Ground Safety, Explosives Safety, and Flight Safety are described in the following sections. Contract ADAIR would follow the Air Force safety guidance identified in DCMA INST 8210.1C (AFI 10-220).

Ground Safety

Under the Proposed Action, limited contractor aircraft maintenance and testing would occur on the aircraft parking ramp or in the hangar and would be consistent with current aircraft maintenance activities at the airport. No unique maintenance activities would be associated with the contract ADAIR aircraft. Some scheduled depot-level or other heavy maintenance requirements would occur at off-airport contractor facilities.

Emergency Response

For initial emergency response involving a contract ADAIR aircraft, the airport would provide emergency responders (Airport Firefighter) trained on the applicable mission design series they are providing. For crash response, the airport would provide on-field aircraft Crash Damaged or Disabled Aircraft Recovery (CDDAR). For events occurring off-airport, civilian authorities (city, county, or state) would be first on scene. After the initial response, the contractor would be required to facilitate crash site security and clean-up. The contractor would be responsible to cooperate with the Air Force or the NTSB investigation, depending upon circumstances of the incident.

The contractor emergency response would include the following:

- Establish a CDDAR program that is fully integrated into the host operating location's CDDAR program. The contractor would provide technical expertise and facilitate the host operating location's response and recovery capability of contractor-owned aircraft, consistent with the following considerations: (1) urgency to open the runway for operational use; (2) prevention of secondary damage to the aircraft; and (3) preservation of evidence for mishap or accident investigations in accordance with DCMA INST 8210.1C (Chap 6.12) which specifies that the contractor must notify the Government Flight Representative of any aircraft mishap meeting the mishap classification criteria defined in DOD Instruction 6055.07; NTSB guidelines; and any local operating location guidance, as applicable. The contractor would ensure the host operating location's CDDAR personnel receive familiarization training on contractor aircraft and procedures prior to commencing local flying operations, at permanent and temporary duty operating locations.
- The contractor would develop an egress/cockpit familiarization training program to ensure all host operating location's nonegress personnel (e.g., emergency response personnel, fire department, CDDAR) who may access contractor aircraft cockpits, equipped with egress systems, receive initial and annual refresher training.

No significant impacts on emergency response are anticipated to occur under Alternative 1 provided the contractor establishes a CDDAR program and all applicable FAA, NTSB, and OSHA requirements are implemented.

Safety Zones

Under the Proposed Action, RPZs around the airport would not change.

Explosives Safety

Under the Proposed Action, contract ADAIR would be responsible for the storage, maintenance, and delivery of countermeasure chaff and flares used in daily training operations. This would be provided by trained and certified contract ADAIR personnel following DOD Manual 4145.26 and technical orders, and any additional guidance specified by the FAA. Trained and certified contract ADAIR personnel would be responsible for the loading and unloading of defensive countermeasures on contract ADAIR aircraft and would follow approved safety measures outlined in the Performance Work Statement (PWS). Contract

ADAIR personnel would also be responsible for the maintenance of captive air training missiles and any ejector cartridges as contractor-provided equipment.

There may be rare occasions in which egress CAD/PAD may need to be removed from the aircraft for maintenance. If necessary, and provided it is authorized under DOD Manual 4145.26, as well as state and local guidance, a limited quantity of in-use egress explosive components may be authorized to be maintained in the egress shop after removal from aircraft undergoing maintenance. This limit would not exceed the total number of complete sets for the number of aircraft in maintenance, and the net explosive weight is limited. Contract ADAIR would work with the selected airport safety office to obtain a license, if needed, to store egress CAD/PAD and comply with all federal, state, and local directives governing the security, storage, and handling of munitions, including meeting minimal facility safety requirements and separation distances for storage and maintenance facilities. Applicable regulations for explosives safety would include DOD Manual 4145.26 and may also include OSHA 29 CFR Part 1910, 27 CFR Part 555 Subpart K – Storage, Fire Code 2012 North Carolina, Chapter 33 Explosives and Fireworks, and Code of Virginia §27-97 depending on FAA and local requirements. Storage would be limited, short-term, and only in the event of an emergency or unforeseen occurrence such as the issuance of a suspension or restriction of egress equipment or munitions. All scheduled maintenance would occur at the contractor's off-base Central Repair Facility. CAD/PAD items are typically replaced just prior to expiration of the service life, which is typically part of aircraft scheduled maintenance.

The loading and unloading of countermeasure chaff and flares would occur on the aircraft parking ramp. The proposed ramp area for contract ADAIR aircraft would need to be authorized for chaff and flare operations (Hazard Class 1.3) in accordance with DOD Manual 4145.26. No significant impacts on explosive safety are anticipated to occur under Alternative 1 provided contract ADAIR personnel are trained and all applicable safety guidelines are implemented. Q-D arcs would need to be established around new explosives storage facilities at the select airport to identify the change in safety procedures and establish safety zones around these facilities. Construction of additional storage facilities, if required, would be considered under separate environmental analysis.

Flight Safety

The potential for aircraft accidents is a primary public concern with regard to flight safety. Such accidents may occur as a result of midair collisions, collisions with manmade structures or terrain, mechanical failure, weather-related accidents, pilot error, BASH, or strikes from defensive countermeasures used during training. Under the Proposed Action, contract ADAIR would be required to strictly conform to the flight safety rules implemented at the airport. In addition, the PWS stipulates the following requirements for contract ADAIR:

- Contractor Flight Operations would respond to and follow ATC vectors from approved facilities per FAA and the DOD guidelines specified in DCMA INST 8210-1C, Chapter 6.
- Contract ADAIR would be conducted under positive tactical control. Pilots would be responsible to respond to tactical vectors and instructions by the applicable controlling authority (Ground Controller Intercept, Baron Controllers, Range Control Officer, Joint Terminal Attack Controller, etc.). If positive control is unavailable, mission flights would remain autonomous and adhere to the briefed presentations and Special Instructions.
- Contract ADAIR aircraft would
    - be equipped with applicable communication and navigation capability to operate in the National Airspace Structure under FAA IFR and aircraft operating limitations (if applicable) and International Civil Aviation Organization equipment prerequisites;
    - have at least one type of FAA-approved Navigation System such as a Tactical Air Navigation, Automatic Direction Finder Receiver System, with Automatic Direction Finder indicator; Very High Frequency Omni Directional Range; Global Positioning System/Long Range Navigation;
    - have sufficient precision approach instrumentation (compatible with standard Air Force instrument landing systems) to permit operations down to 300-ft ceilings and 1-statute-mi visibility; and
    - have at least two functional voice radios operating in either the very high frequency/ultrahigh frequency bands, and one must be ultrahigh frequency.

Bird/Wildlife-Aircraft Strike Hazards

Contractor operations would not follow the airport BASH procedures; they follow the PWS-directed Flight Operations Procedures and Quality Management System per the references above. In this case, the contractor's BASH plan would be part of the Quality Management System and be integrated with the select airport's plan. It is expected the contract ADAIR BASH plan would very closely mirror and, in fact, may be an exact copy of the airport's FAA-approved WHMP.

No significant impacts on airspace/flight safety are anticipated to occur under Alternative 1 provided that contractor flight safety rules are followed and all applicable airport, FAA, and DCMA INST 8210-1C guidelines are implemented.

4.3.3 No Action Alternative

Under the No Action Alternative, contract ADAIR would not perform sorties at nearby airspace. Under the No Action Alternative, there would be no change to safety.

4.4 AIR QUALITY

4.4.1 Evaluation Criteria

The CAA Section 176(c), General Conformity, requires federal agencies to demonstrate that their proposed activities would conform to the applicable SIPs for attainment of the NAAQS. General conformity applies to nonattainment and maintenance areas. If the emissions from a federal action proposed in a nonattainment area exceed annual *de minimis* thresholds identified in the rule, a formal conformity determination is required of that action. The thresholds are more restrictive as the severity of the nonattainment status of the region increases.

The overland project areas associated with ISO and special use airspace are in an attainment or unclassified for all NAAQS (40 CFR § 81.334 and § 81.347). Because of this, the General Conformity Rule does not apply in these regions. Although general conformity does not apply, the applicability criteria of the rule are evaluated against project emissions as a significance indicator. Thus, project emissions of PM, CO, SO_x, NO_x, and VOCs were compared against the conformity rule *de minimis* thresholds of 100 tpy. Where the *de minimis* threshold was exceeded, the action was evaluated against the PSD thresholds (250 tpy for criteria pollutants and 100,000 tpy for CO_2e) and against regional/county emission levels. Although PSD and Title V are not applicable to mobile sources, their applicability levels provide a benchmark to compare air emissions against.

In addition, operations in the Warning Areas would occur outside any AQCR. Warning Areas W-72, W-161, and W-177 extend 3 NM from the coastline (State jurisdictional boundary) out past the 12-NM Territorial Sea boundary and the 24-NM Contiguous Zone boundary. Thus, compliance with the NAAQS would not apply in the Warning Areas and general conformity would not apply; however, to assess potential impacts, project emissions are compared against the criteria used for the overland project areas.

The Air Conformity Applicability Model (ACAM) (5.0.13a) was used to provide emissions estimates for contract ADAIR airfield operations, maintenance activities, worker commutes, and flight operations in special use airspace. ACAM was developed by the Air Force (2017); it provides estimated air emissions from proposed federal actions for each specific criterion and precursor pollutant as defined in the NAAQS. Assumptions of the model are discussed in **Appendix C**. ACAM uses the procedures established by the Air Force as provided in *Air Emissions Guide for Air Force Mobile Sources* (2018a) and the *Air Emissions Guide for Air Force Stationary Sources* (2018b). Emission calculations in the stationary guide often reflect the use of methodologies and emission factors published in USEPA's AP-42 (USEPA, 2009). For aircraft, operational modes, including taxi/idle (in and out), takeoff, climb out, approach, and pattern flight that includes touch and go operations, are used as the basis of the emission estimates. By default, ACAM only accounts for emissions occurring at or below 3,000 ft (within the mixing layer). The mixing layer extends from ground level up to the

point at which the vertical mixing of pollutants decreases significantly. The USEPA recommends that a default mixing layer of 3,000 ft be used in aircraft emission calculations (40 CFR § 93.153[c][2]). Based on this, aircraft emissions released above 3,000 ft were not included in analysis for the ROIs.

In nonattainment and maintenance areas, emissions at or above 100 tpy are considered significant, particularly as this threshold triggers full conformity analysis. Emissions below 100 tpy are considered moderate or, if very low, minor. The air quality analysis focused on emissions associated with the airfield operations at the prospective airport and with sorties in the special use airspace. As such, emissions from ACAM were determined separately for the airport ROI and the special use airspace ROIs. In addition, emissions associated with the use flares within the Warning Areas were estimated, using draft emission factors found in AP-42.

The basis for the air emissions calculations performed is listed in **Table 4-16**.

Table 4-16
Basis of Air Emission Calculations

Location	Type of Operation	Number of Sorties per Year	Ground Operation Emission Sources
Kinston Regional Jetport	LTO Cycles	2,720[1]	Auxiliary power unit equipment, AGE, personal vehicle use, aircraft maintenance (solvent use), fuel handling and storage, aircraft trim tests (12 per aircraft)
	TGO Cycles	401[2]	
Warning Areas W-177, W-161, W-72	Sorties @ ≤3,000 ft MSL	99[3,4]	Not Applicable
R-5306A and Core MOA	Sorties @ ≤3,000 ft AGL	49[4]	Not Applicable
Farmville MOA	Sorties @ ≤3,000 ft AGL	197[4]	Not Applicable
R-5314/Phelps MOA	Sorties @ ≤3,000 ft AGL	74[4]	Not Applicable
Echo MOA, Gamecock A MOA, Burner ATCAA with Hatteras, Warning Area W-122 ATCAA/ Pamlico MOAs	All Sorties ≥3,000 ft AGL	Not Applicable - No Analysis[5]	Not Applicable

Notes:
[1] Air quality impacts are assessed for the airfield and special use airspace based on the total annual sorties from the selected airfield.
[2] 5 percent of on-airport daytime sorties (2,671) are expected to include multiple patterns for contractor proficiency. Each of those 5 percent sorties is assumed to include three TGO/low approaches.
[3] Impacts include flare use at and below 3,000 ft.
[4] Estimated time per sortie spent at or below 3,000 ft altitude = 10.2 minutes.
[5] Sorties occur above the atmospheric mixing height. No emissions calculated.

AGE = Aerospace Ground Equipment; AGL= above ground level; ATCAA = Air Traffic Control Assigned Airspace; ft = foot(feet); LTO = Landing and Takeoff; MOA = Military Operations Area; MSL = mean sea level; TGO = Touch and Go

4.4.2 Proposed Action

Under the Proposed Action, no construction emissions are anticipated. Only those emissions associated with the addition of contract ADAIR operations were evaluated as no substantive changes to current operations of the 4 FW are expected as a result of the action.

Analyses were performed for three different emission scenarios to evaluate the risk for different adversarial aircraft that may be utilized by the ADAIR contractor. The three different emission scenarios (identified as High, Medium, and Low) are listed below with the engine type used for the basis for the emission calculations.

- High: A-4K, Engine: J52-P-8B*
- Medium: T-59 Hawk, Engine: TF34-GE-100*
- Low: F-5A/5B, Engine: J-85-GE-13

*Surrogate engine type, reliable criteria emission factors not available for foreign engine types.

4.4.2.1 Alternative 1 – Kinston Regional Jetport

Emissions were estimated for each year of the Proposed Action beginning in November 2020 and ending in October 2030. **Table 4-17** presents total increases in annual operational emissions for the proposed airport ROI and emission scenario. The Low Emission Scenarios are not necessarily lower for all pollutants. Because of its role in ozone formation NO_x is the primary pollutant of concern in many areas and thus the Low Scenario reflects lower emission rates for NO_x; however, the lower NO_x emissions are often at the expense of other pollutants such as higher CO. Other factors such as the number of engines, fuel flow rates, and power mode can cause variations that may result in the Low Scenario having higher emissions for some pollutants when compared to an engine with higher emission factors (pounds pollutant/1,000 pounds fuel burned).

The methodologies, emission factors, and assumptions used for the emission estimates for each of the scenarios and related activities are outlined in **Appendix C**.

The primary pollutants of concern for ozone are NO_x and VOCs. VOCs and NO_x in all three emission scenarios are below the 100 tpy *de minimis* threshold (see **Table 4-17**). For NO_x, the Medium Scenario had the highest emission rate (81.8 tpy) which is safely below the *de minimis* threshold for conformity. Looking at all criteria pollutants, CO had the highest annual emission rate (180 tpy) under the Low Scenario. This is above the *de minimis* threshold for conformity but is well below the PSD threshold for pollutants in attainment. The CO emissions for the Medium Scenario were also higher than the conformity *de minimis* level; however, for all pollutants, the project emissions are only a small fraction of the emissions for Lenoir County as listed in **Table 4-18**.

The analysis results discussed above demonstrate the following for the airfield operations at ISO:

1. The annual emissions of CO for the Medium and Low Scenarios are over the 100 tpy *de minimis* threshold for conformity; however, ISO is in attainment areas for CO; thus, the conformity rule is not applicable.
2. NO_x emission for all emission scenarios are below the 100 tpy *de minimis* threshold for conformity rule applicability.
3. The Proposed Action should not interfere with the airport's ability to maintain compliance with the NAAQS for all the attainment area pollutants (CO, NO_x, PM, SO_x) as the ADAIR-generated emissions are a small percentage of the respective overall county emissions.
4. The Proposed Action should not hamper efforts to maintain NAAQS compliance for the pollutants that contribute to ozone nonattainment (VOCs and NO_x). No conformity analysis is required.

Table 4-17
Contract Adversary Air Emissions – Airport Operations

Scenario	Contract Year(s)	Emissions (tpy)[1,2]								
		VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$	CO_2e	Pb	NH_3
High	2020 (Nov–Dec)	4.83	3.48	7.48	0.36	0.27	0.26	761	0	0.00
	2021 through 2029	29.0	20.9	44.8	2.15	1.62	1.56	4,564	0	0.02
	2030 (Jan–Oct)	24.2	17.4	37.4	1.79	1.35	1.30	3,803	0	0.01
Medium	2020 (Nov–Dec)	9.82	13.52	20.2	0.85	2.72	2.04	1,204	0	0.00
	2021 through 2029	58.9	81.1	121	5.08	16.3	12.2	7,223	0	0.02
	2030 (Jan–Oct)	49.1	67.6	101	4.24	13.6	10.2	6,019	0	0.01
Low	2020 (Nov–Dec)	5.72	2.78	30.0	0.43	0.24	0.23	937	0	0.00
	2021 through 2029	34.3	16.7	180	2.57	1.44	1.40	5,620	0	0.02
	2030 (Jan–Oct)	28.6	13.9	150	2.14	1.20	1.17	4,683	0	0.01

Source: Air Conformity Applicability Model output

Notes:
[1] Represents total per year emissions for 1) flight operations (includes trim tests and auxiliary power unit use), 2) Aerospace Ground Equipment, 3) aircraft maintenance (parts cleaning), 4) New worker commutes, and 5) Jet A storage (fuel for contract ADAIR operation only).
[2] Based on 2,720 landing and takeoff and 401 touch and go cycles per year.

CO = carbon monoxide; CO_2e = carbon dioxide equivalent; NH_3 = ammonia; NO_x = nitrogen oxides; Pb = lead; $PM_{2.5}$ = particulate matter less than 2.5 microns; PM_{10} = particulate matter less than 10 microns; SO_x = sulfur oxides; tpy = ton(s) per year; VOC = volatile organic compound

Table 4-18
Adversary Air Airport-Generated Emission – Percent of County Emission (in tons per year)[1]

CO	NO_X	PM_{10}	$PM_{2.5}$	SO_2	VOC
1.9	4.9	0.9	2.8	11.3	0.6

Notes:
[1] Percentages shown in the table are based upon worst case ADAIR emissions across all three emission scenarios from **Table 4-17** (CO = 180, NO_x = 81, PM_{10} = 16.3, $PM_{2.5}$ = 12.2, SO_2 = 5.08, VOC = 58.09 [tpy]), and the baseline county emissions are listed in **Table 3-11**.

CO = carbon monoxide; NO_x = nitrogen oxides; $PM_{2.5}$ = particulate matter less than 2.5 microns; PM_{10} = particulate matter less than 10 microns; SO_2 = sulfur dioxide; tpy = ton(s) per year; VOC = volatile organic compound

4.4.2.2 Alternative 1 – Airspace

For the special use airspace, the Warning Areas, R-5306A and Core MOA, Farmville MOA, and R-5314/Phelps MOA will include contract ADAIR sorties at or below 3,000 ft AGL, and thus, these regions are included in the air quality analysis. Consistent with the USEPA recommendation regarding mixing height, only those emissions that would occur with the mixing layer (lowest 3,000 ft) were analyzed. Out of the proposed 2,720 sorties, only a small portion would occur at or below 3,000 ft AGL as previously listed in **Table 4-16**. For the special purpose airspace, chaff (if allowed) was not considered to have an air quality impact as it has been determined that chaff material maintains its integrity after ejection and that the use of explosive charge in impulse cartridges results in minimal PM_{10} emissions (Air Force, 1997). Flare emissions

were only determined for the Warning Areas as these were the only areas where flare use would occur at or below 3,000 ft.

The emissions associated with contract ADAIR sorties proposed for the special use airspace were evaluated using ACAM for the High, Medium, and Low Scenarios described previously. Flare emissions for the Warning Areas were based upon the methodologies in AP-42. The flight time in the mixing layer was estimated to be approximately 10.2 minutes per sortie. In addition, it was assumed the time it would take to fly from the prospective airport to and from the special use airspace would occur at an altitude above 3,000 ft AGL, and thus, this portion of the sortie is not included in the analysis. The methodologies, emission factors, and assumptions used for the emission estimates for each of the scenarios are outlined in **Appendix C.**

The emissions estimated for the special use airspace that would result from contract ADAIR sorties are listed in **Table 4-19**. Emissions cover the proposed 10-year period beginning in November 2020 and ending in October 2030. Since the airspace operations would be identical for all alternatives, the results are applicable to sorties flown from the perspective airport. All overland special use airspace proposed for contract ADAIR are located in areas that are in attainment or unclassifiable for all criteria pollutants. As such, the general conformity rule does not apply; however, the rule's 100-tpy *de minimis* threshold was applied as a significance indicator.

As listed in **Table 4-19**, the emissions for all special use airspace for each scenario are quite low. The highest emission rate (3.20 tpy for CO for the Farmville MOA Low Scenario) is more than 20 times less than the *de minimis* threshold for General Conformity Rule applicability and are very small fraction of the airspace baseline emissions listed in **Table 3-11** Based on this analysis alone the additional airspace emissions due to contractor ADAIR are considered *not to be* significant with respect to air quality impacts.

4.4.3 No Action Alternative

The No Action Alternative would not generate any new emissions and would not change emissions from current baseline levels presented in **Section 3.4**. As a result, no impacts would occur to air quality under the No Action Alternative.

4.4.4 Climate Change Considerations

The coastal regions of the Middle Atlantic States, including the Chesapeake Bay, are very vulnerable to the effects of climate change. Thermal expansion caused by warming oceans and the melting of glaciers and ice caps appear responsible for an observed sea level rise in the Chesapeake Bay of about 1 ft. A further rise of more than 1 ft (up to 5.2 ft) is predicted over the next 100 years. This damages fragile ecosystems and contributes to the loss of wetlands. Warmer bay waters themselves lead to unnatural changes in aquatic habitats that negatively impact marine life and fauna (Chesapeake Bay Foundation, 2018). Similarly, rising sea levels are expected to have substantial consequences to North Carolina's coastal and cultural resources. The Coastal Vulnerability Index developed by NOAA and the US Geological Survey ranks the sea-level rise risk with respect to the North Carolina coast as very high. In addition, the frequency of major hurricanes (categories 3 to 5) are expected to increase. This would impact both North Carolina and southeastern Virginia (North Carolina Interagency Leadership Team, 2012).

Annual GHG emissions from the Proposed Action are relatively low. Although Title V and PSD are not applicable to this action, the applicability thresholds for these permitting requirements were compared against projected CO_2e emission levels as an indicator of significance. In addition, projected CO_2e emissions were compared against county and state GHG emission estimates to further assess the significance of contract ADAIR-generated GHG emissions. **Table 4-20** shows this analysis. CO_2e emissions for the overall worst case falls well below the permitting thresholds and accounts for less than 0.003 percent of state CO_2e emissions. This demonstrates that in isolation, additional CO_2e emissions expected as a result of contract ADAIR would have a negligible impact. The relative quantity of GHG emissions from the Proposed Action is expected to be so low that it would be cost-prohibitive to consider mitigation measures.

Table 4-19
Contractor Adversary Air Emissions – Special Use Airspace

Airspace Designation	Scenario	Years	Emissions (tpy)						
			VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$	CO_2e
Warning Areas W-177, W-161, and W-72	High	2020 (Nov–Dec)	0.00	0.06	0.02	0.01	0.00	0.00	19.6
		2021 through 2029	0.02	0.37	0.11	0.04	0.01	0.00	118
		2030 (Jan–Oct)	0.02	0.31	0.09	0.03	0.00	0.00	98.0
	Med	2020 (Nov–Dec)	0.03	0.00	0.10	0.00	0.01	0.01	4.2
		2021 through 2029	0.18	0.02	0.60	0.01	0.07	0.05	25.0
		2030 (Jan–Oct)	0.15	0.02	0.50	0.01	0.06	0.05	20.9
	Low	2020 (Nov–Dec)	0.03	0.01	0.27	0.01	0.00	0.00	20.2
		2021 through 2029	0.15	0.09	1.61	0.04	0.00	0.00	121
		2030 (Jan–Oct)	0.13	0.07	1.34	0.03	0.00	0.00	101
Restricted Area R-5306A and Core MOA	High	2020 (Nov–Dec)	0.00	0.03	0.01	0.00	0.00	0.00	9.7
		2021 through 2029	0.01	0.18	0.05	0.02	0.00	0.00	58.2
		2030 (Jan–Oct)	0.01	0.15	0.05	0.02	0.00	0.00	48.5
	Med	2020 (Nov–Dec)	0.02	0.00	0.05	0.00	0.01	0.00	2.10
		2021 through 2029	0.09	0.01	0.30	0.00	0.03	0.03	12.4
		2030 (Jan–Oct)	0.08	0.01	0.25	0.00	0.03	0.02	10.3
	Low	2020 (Nov–Dec)	0.01	0.01	0.13	0.00	0.00	0.00	10.0
		2021 through 2029	0.07	0.04	0.80	0.02	0.00	0.00	59.9
		2030 (Jan–Oct)	0.06	0.04	0.66	0.02	0.00	0.00	49.9
Farmville MOA	High	2020 (Nov–Dec)	0.01	0.12	0.04	0.01	0.00	0.00	39.0
		2021 through 2029	0.05	0.73	0.22	0.08	0.01	0.01	234
		2030 (Jan–Oct)	0.04	0.61	0.18	0.06	0.01	0.01	195
	Med	2020 (Nov–Dec)	0.06	0.01	0.20	0.00	0.023	0.02	8.3
		2021 through 2029	0.36	0.04	1.20	0.02	0.138	0.11	49.8
		2030 (Jan–Oct)	0.30	0.03	1.00	0.01	0.115	0.09	41.5
	Low	2020 (Nov–Dec)	0.05	0.03	0.53	0.01	0.00	0.00	40.1
		2021 through 2029	0.30	0.17	3.20	0.08	0.00	0.00	241
		2030 (Jan–Oct)	0.25	0.14	2.67	0.07	0.00	0.00	201
Restricted Area R-5314/ Phelps MOA	High	2020 (Nov–Dec)	0.00	0.05	0.01	0.01	0.00	0.00	14.6
		2021 through 2029	0.02	0.27	0.08	0.03	0.00	0.00	88
		2030 (Jan–Oct)	0.02	0.23	0.07	0.02	0.00	0.00	73.2
	Med	2020 (Nov–Dec)	0.02	0.00	0.08	0.00	0.01	0.01	3.1
		2021 through 2029	0.14	0.02	0.45	0.01	0.05	0.04	18.7
		2030 (Jan–Oct)	0.11	0.01	0.38	0.01	0.04	0.03	15.6
	Low	2020 (Nov–Dec)	0.02	0.01	0.20	0.01	0.00	0.00	15.1
		2021 through 2029	0.11	0.06	1.20	0.03	0.00	0.00	90.4
		2030 (Jan–Oct)	0.09	0.05	1.00	0.03	0.00	0.00	75.3

CO = carbon monoxide; CO_2e = carbon dioxide equivalent; NO_x = nitrogen oxides; $PM_{2.5}$ = particulate matter less than 2.5 microns; PM_{10} = particulate matter less than 10 microns; SO_x = sulfur oxides; tpy = ton(s) per year; VOC = volatile organic compound

Table 4-20
Indicators for Carbon Dioxide Emission Impacts

County/ Airport	2014 County CO_2e Emissions (tpy)[1]	Maximum ADAIR Generated CO_2e Emissions (tpy)[2]	ADAIR GHG Emissions - Percent of County CO_2e	2017 State CO_2e Emissions (tpy)[3, 4]	ADAIR GHG Emissions - Percent of State CO_2e	CO_2 Permit Applicability Thresholds (tpy)[5]	
						Title V	PSD New/ Modified Source
Lenoir (ISO)	382,381	7,273	1.9	126,765,650	0.006	100,000	100,000/75,000

Notes:
[1] Source: 2014 National Emission Inventory Data (USEPA, 2019a).
[2] Worst case sum of emissions from airfield operations and special purpose airspace sorties across all emission scenarios.
[3] Source: State Carbon Dioxide Emissions Data (US Energy Information Administration, 2019).
[4] Emissions for the state of North Carolina (2017 data).
[5] Permit thresholds given are for stationary sources only. Permit thresholds shown in the table are used as a benchmark to compare air emissions against when assessing potential impacts.

ADAIR = adversary air; CO_2 = carbon dioxide; CO_2e = carbon dioxide equivalent from Air Conformity Applicability Model; GHG = greenhouse gas; ISO = Kinston Regional Jetport; PSD = Prevention of Significant Deterioration; tpy = ton(s) per year

4.5 BIOLOGICAL RESOURCES

4.5.1 Evaluation Criteria

The level of impact on biological resources is based on the

- importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource;
- proportion of the resource that would be affected relative to its occurrence in the region;
- sensitivity of the resource to the proposed activities; and
- duration of potential ecological ramifications.

The impacts on biological resources are adverse if species or habitats of high concern (i.e., federally and state listed threatened and endangered species, marine mammals, designated critical habitat, and Essential Fish Habitat) are negatively affected over relatively large areas. Impacts are also considered adverse if disturbances cause reductions in population size or distribution of a species of high concern.

As a requirement under the ESA, federal agencies must provide documentation that ensures that agency actions do not adversely affect the existence of any threatened or endangered species. The ESA requires that all federal agencies avoid unauthorized “take” of federally threatened or endangered species or adverse modification of designated critical habitat. The ESA Section 7 consultation process would result in either a concurrence on the Air Force’s determination of “effect, but no adverse effect” on listed species, or a biological opinion with either an Incidental Take Statement that authorizes a specified amount of “take” (or adverse modification of designated critical habitat) or a jeopardy determination. No ESA Section 7 formal consultation is required if the Air Force determines there will be no effect on a threatened or endangered species.

4.5.2 Proposed Action

Under the Proposed Action, there would be no ground-disturbing activities, and all potential impacts on biological resources would be associated with aircraft operations at the civilian airport or in the special use airspace. The aircraft operations associated with the Proposed Action could have impacts on biological resources from aircraft movement, the use of defensive countermeasures, noise, or BASH.

In the Warning Areas, chaff and flares (types similar to RR-188 chaff and M206 flares) are proposed for annual use during the training sortie operations. Potential direct impacts on resources from training activities include the deposition of residual materials, such as plastic, from chaff and flare use, its accumulation in sensitive and protected areas, and the ultimate breakdown of these materials into substrate mediums. Indirect impacts include transportation of these materials to other areas by environmental elements, and

the potential for ingestion by sensitive species within the Warning Areas. Depending on the altitude of release and wind speed and direction, the chaff from a single bundle can be spread over distances ranging from less than 0.25 mi to over 100 mi (Air Force, 1997). The most confined distribution would be from a low-altitude release in calm conditions.

Chaff chemical composition, composition, rate of decomposition, and tendency to leach toxic chemicals under various situations paired with baseline substrate chemistry and conditions are factors that could potentially alter substrate chemistry. A change in chemistry could potentially affect fauna, flora, vegetative cover, substrate stability, the type and quality of habitat, and leaching and runoff potential. Silica (silicon dioxide), aluminum, and stearic acid are major components of chaff with minor quantities of copper, manganese, titanium, vanadium, and zinc in the aluminum chaff coating. All are generally prevalent in the environment, and all but titanium are either found in plants and animals and/or essential for their growth. Silica does not present a concern to chemistry as it is found in silicate minerals, the most common mineral group on Earth. Silica is more stable in acidic environments than alkaline. Aluminum is also very abundant in the earth's crust, forming common minerals like feldspars, micas, and clays. While acidic and extremely alkaline substrates increase the solubility of aluminum, what is left eventually oxidizes to aluminum oxide which is insoluble. Stearic acid is used in conjunction with palmitic acid to produce an anticlumping compound for chaff fibers and both degrade when exposed to light and air (Air Force, 1997).

The primary material in flares is magnesium, which is not highly toxic, and it is highly unlikely organisms would ingest flare materials; however, plastic caps are released with the deployment of both chaff and flares. Some flares utilize impulse cartridges and initiates which contain chromium and sometimes lead. Even though these are hazardous air pollutants under the CAA and have been known to cause health risk in certain avian species, significant impacts on biological resources are not expected because previous studies have indicated that there are no health risks from most flare components (Air Force, 1997), the amount of lead is expected to be very small and dispersed over great distances, and the use of BMPs would avoid the selection of flares containing lead. More significantly, flares have a potential to start fires that can spread, adversely and indirectly affecting many resources. Flare-induced fires depend on the probabilities of flare materials reaching the ground, igniting vegetation, and causing significant damage if fire spreads (Air Force, 1997); however, all use of flares would occur in offshore Warning Areas negating the potential for wildland fires as a result of flare use.

The following BMPs would be implemented as appropriate:

- Comply with Air Force and local procedures.
- Replace impulse cartridges and initiators in future procurements of flares with models that do not contain toxic air pollutants such as chromium and lead.

The potential impacts on biological resources beneath the special use airspace are described in **Section 4.5.2.2**.

4.5.2.1 Alternative 1 – Kinston Regional Jetport

Vegetation

There is very little natural habitat located on ISO; most of the land consists of improved or previously disturbed land, including areas maintained in order to prevent natural vegetation from penetrating approach or departure surfaces or provide habitat for wildlife that could pose safety risks. No ground-disturbing activities are included in the Proposed Action and as such there is no potential to disturb vegetation or habitats on ISO.

Wildlife

There is limited suitable habitat for wildlife on ISO, while the forested and agricultural areas adjacent to the airport likely would support relatively common wildlife species. Wildlife, and especially avian species, utilizing these undeveloped areas for foraging and breeding would normally be sensitive to increased noise impacts from military aircraft. Airfield operations at ISO exceed 20,600 operations annually, and the

proposed increase from contract ADAIR represents only a 30.1 percent increase from current use. Although there is variability in responses across species, many birds and wildlife have the ability to habituate to noise and movement from aircraft (Grubb et al., 2010) and aircraft operations have been ongoing at ISO for decades. As such, the noise and movement from increased aircraft operations is anticipated to have negligible short- and long-term impacts on wildlife, including birds breeding and foraging in nearby relatively undisturbed habitats, under Alternative 1.

Aircraft operations always have the potential for bird and other wildlife strikes. This can occur during takeoff and landing on and near active runways, as well as during flight at altitude. With an increase in air operations associated with contract ADAIR aircraft at ISO, there is an increased risk of BASH; however, ISO maintains a WHMP specifically to improve safety related to wildlife hazards (ISO, 2012b). The purpose of the WHMP is to ensure ISO meets or exceeds all FAA wildlife-related safety regulations while assuring a safe environment for aircraft, crew, and passengers arriving and departing from ISO. As such, with the continued airfield management and risk reduction implementation measures associated with the WHMP discussed in **Section 4.3.2.1**, the potential impacts on birds and other wildlife from contract ADAIR aircraft strikes during air operations at ISO would be minor.

Threatened and Endangered Species

Under this alternative there are no ground-disturbing activities proposed at ISO, and all potential impacts on the federally or state listed species would be associated with aircraft operations in the ROI. Listed plant species, amphibians, and fish identified with the potential to be within the ROI identified in **Section 3.5.2.1** would not be affected by the proposed increase in sorties. There would be no effect to listed species with the potential to be within the ISO ROI from the implementation of the Proposed Action.

Aircraft operations always have the potential for bird and other wildlife strikes. This can occur during takeoff and landing on and near active runways, as well as during flight at altitude. With an increase in air operations associated with contract ADAIR aircraft at ISO, there is an increased risk of BASH; however, contract ADAIR would maintain a BASH prevention program specifically to manage BASH risk and implement measures to greatly reduce the likelihood for BASH incidents. The outcome of the BASH program is both increased safety for pilots and aircraft as well as less incidents of injury or death to birds and other wildlife. As such, with the continued airfield management and risk reduction implementation measures associated with the BASH program, the impacts on birds and other wildlife from contract ADAIR aircraft strikes during air operations at ISO would reduce the potential for impacts on federal and state listed species.

Aircraft operations, however, may impact the red-cockaded woodpecker (RCW; *Melanerpes erythrocephalus*) if it is present on or near ISO, which could include aircraft strikes during takeoff and landing and disturbance due to increased noise and aircraft activities. Optimal habitat for RCW consists of large tracts of open, old pines (80 to 100 years or more), in particular longleaf pine (*Pinus palustris*), with little understory maintained by a frequent fire regime (National Audubon Society, 2020). Other species of pine may also be used. Habitat evaluations were completed in 1992 and 1995 to assess the value of the habitat for RCW on and around ISO as part of the NCGTP analysis that found only marginal habitat and no records of RCW in this area (FAA, 1997). The surveys concluded that suitable habitat is lacking in the ISO area. While there is a small potential for RCW to use the forests surrounding ISO as dispersal habitat and encounter aircraft during training missions, this potential is negligible; therefore, the Proposed Action would have no effect to RCW.

Wetlands

The increase in aircraft operations at ISO from contract ADAIR operations would not impact wetlands as there would be no need to fill or alter wetlands under the Proposed Action.

4.5.2.2 Alternative 1 – Airspace

Vegetation

Proposed training within the special use airspace would not have impacts on vegetation communities or habitat under Alternative 1. Potential impacts on vegetation from countermeasure chaff and flare constituents may include toxicity or accumulation of chemical compounds. Studies have determined that chaff deposition onto soils does not lead to significant increase of concentrations of chaff or flare chemical constituents in soil and have not been found to be toxic to plants or soil fauna (Air Force, 1997).

Wildlife

The Proposed Action operations would typically occur at altitudes above where most bird species would be migrating or foraging. As such, it is highly unlikely that aircraft movement would adversely impact foraging birds or have a risk of BASH under Alternative 1. Migrating birds could have a greater potential of encountering contract ADAIR aircraft during training operations, especially those that migrate at altitudes above 2,000 ft; however, given the large area and high altitude where training would occur, that most contract ADAIR training would during daytime hours while most songbirds migrate at night, and that most migratory birds migrate at altitudes less than 2,000 ft, the likelihood for birds to encounter aircraft during training operations is low; therefore, adverse impacts on birds from aircraft movement is negligible under Alternative 1. Further, given the altitudes that the proposed operations would occur, aircraft movement in the special use airspace would have no impacts on terrestrial or marine mammals under Alternative 1.

Noise modeling for the Proposed Action (see **Section 4.2.2**) indicates that there would be no substantial increase in noise impacts within the special use airspace, and that subsonic and/or supersonic noise levels in the airspace would not change substantially from the baseline conditions; therefore, the negligible change in noise levels as a result of the Proposed Action would have no impact on breeding, foraging, or nesting birds (including bald eagles), terrestrial mammals, marine mammals, or sea turtles in the special use airspace under Alternative 1.

Supersonic flights would not occur in the overland special use airspace. Sonic booms from supersonic flights within the Warning Areas could cause startle impacts on avian and mammal species on or near sea level; however, the sonic boom and postboom rumbling sounds that would be experienced by wildlife do not differ substantially from thunder. Further, the sonic boom events would be highly isolated and rare occurrences in the Warning Areas and occur in areas where supersonic flights currently occur with military training activities. As such, sonic booms from supersonic flights would have no impact on wildlife, including marine mammals and sea turtles in Warning Areas under Alternative 1.

Under the Proposed Action, the use of chaff and flares would increase by 4.6 percent within the Warning Areas. Chaff and flares are not used within the overland special use airspace. Impacts on marine wildlife from the use of chaff and flares would be limited to a startle effect from chaff and flare deployment and inhalation of chaff fibers or flare combustion products. The potential of being struck by debris or a dud flare, given the small amount, is remote. Startle effects from the release of chaff and flares would be minimal relative to the noise of the aircraft. The potential for wildlife to be startled from flare deployment at night when flares would be most visible would be minimal due to the short burn time of the flare and limited number of nighttime operations. It is highly unlikely that during active military training with contract ADAIR aircraft that birds would remain in the area where training is occurring to be adversely impacted by chaff and flares deployment. The use of chaff and flares associated with the Proposed Action would have no impact on wildlife under Alternative 1.

Small residual plastic components of chaff and flares such as end caps and pistons, as well as chaff fibers, would be deposited on the ocean surface during training activities. Some large foraging bird species as well as marine mammals and sea turtles could ingest these constituents if these components remain on the ocean surface or in the water column. The effect of chaff and flare components on federally listed bird species, marine mammals, and sea turtles is discussed under the threatened and endangered species section below. An evaluation of the potential for chaff to be inhaled by humans and large wildlife found that

the fibers are too large to be inhaled into the lungs and chaff material is made of silicon and aluminum that has been shown to have low toxicity (Air Force, 1997).

Fish

Increased aircraft operations in the Warning Areas would have no impact on marine fish. The use of additional chaff and flares would increase the potential for the plastic components to end up in the ocean. While the amount of additional plastic material from chaff and flare use is minor, the size of the components is small and most of the material would fall to the ocean floor, the use of chaff and flares within the Warning Areas may have a minor adverse impact on some fish species. Species that are large enough to ingest plastic pieces and inhabit the small portion of the shallower continental shelf waters that overlaps the boundaries of the Warning Areas may be impacted, although the likelihood of any large fish species encountering plastic caps from chaff and flares is extremely low. The Proposed Action in the special use airspace would have no impact on Essential Fish Habitat.

Threatened and Endangered Species

Under Alternatives 1, 2, and 3, there would be no ground-disturbing activities within the special use airspace and potential impacts on threatened and endangered species would be associated with aircraft operations. Because there would be no ground-disturbing activities, there would be no impacts on federally or state listed plant species, reptiles, amphibians, fish, invertebrates or their habitat within the overland special use airspace. Designated Critical Habitat for piping plover, Atlantic sturgeon, and loggerhead turtles is located beneath several of the overland special use airspace (see **Figure 3-8**); however, since there would be no ground-disturbing activities, the Proposed Action would have no effect to critical habitat beneath this airspace. As previously discussed, the use of defensive countermeasures and supersonic flights would not occur in the overland airspace. In addition, the use of defensive countermeasures and aircraft overflights would not alter the physical or biological features of the loggerhead turtle or North Atlantic right whale designated critical habitat in the Warning Areas. Impacts on other listed species could occur from aircraft operations under the Proposed Action from aircraft movement, noise, and bird and animal aircraft strikes and are discussed below.

There would be no impacts on the federally and state listed birds from the Proposed Action under Alternatives 1. Bird species within the overland special use airspace would primarily be foraging or nesting. Given the large area and high altitude where the majority of contract ADAIR training would occur, and that most ADAIR training would occur during daytime hours, the likelihood for birds to encounter aircraft during training operations is low. In addition, the airspace proposed for use is routinely used by Air Force, Navy, and Marine Corps and contract ADAIR would only increase the total number of sorties in the overland airspace by 713 sorties annually. As such, these species would likely not be startled or at risk from aircraft strikes from aircraft flying at higher altitudes. Aircraft noise in the MOAs would have no impact on bird species as the noise levels would not exceed 45 dB from the Proposed Action. In addition, chaff and flare would not be used and there would be no supersonic operations in the overland special use airspace.

The listed mammals with the potential to occur in the overland special use airspace would potentially only be affected by aircraft overflights if the training activities elicited negative behavioral responses. It is highly unlikely that either aircraft movement or noise, especially at higher altitudes, would elicit a response from mammals. Noise from contract ADAIR aircraft would not exceed 45 dB and would therefore have no impact on the listed mammal species. Aircraft movement would not be visible to mammals unless an individual was at the exact location at the moment in which an aircraft traveling at high speed at a relatively low altitude passed directly overhead. These occurrences with contract ADAIR aircraft would be so rare as to be negligible and may not even generate a startle response if an interaction occurred. As such, the contract ADAIR training in the overland special use airspace would have no effect on listed mammals.

Within the Warning Areas, it is not expected that either aircraft movement or noise emissions, especially at higher altitudes, would elicit a response from marine mammals or sea turtles. Noise from contract ADAIR aircraft would not increase substantially (including from sonic booms) in the Warning Areas and would therefore have no impacts on the listed marine mammal species and sea turtles. Sonic booms from

supersonic aircraft movement could cause a startle response by the listed species when they are present on the surface of the ocean; however, sonic booms would be relatively rare events during contract ADAIR training in the action area, and the sonic boom and postboom rumbling would be similar to what mammal species and sea turtles experience during a thunderstorm; therefore, sonic booms from supersonic aircraft movement is expected to have no impact on listed species. Additionally, for listed bird species, given the large area where the majority of contract ADAIR training would occur, 50,140 square miles, and that most ADAIR training would occur during daytime hours, the likelihood for birds to encounter aircraft during training operations is low.

There is the potential for components of chaff and flares that remain after use to make their way to the surface of the Atlantic Ocean where they could be ingested by marine mammals, sea turtles, birds, and fish. Chaff and flare components, end caps and pistons would be released into the marine environment, where they would persist for long periods and could be ingested by marine fauna while initially floating on the surface and sinking through the water column. Chaff and flare end caps and pistons would eventually sink to the seafloor (US Navy, 2009), which would reduce the likelihood of ingestion by marine fauna at the surface or in the water column but could still be ingested by some sea turtles such as green turtles and loggerhead turtles that forage on the ocean floor; however, with the relatively small amount of additional chaff and flare use over the very large areas of the Atlantic Ocean in the Warning Areas, there is an extremely low chance that marine fauna would encounter these small plastic chaff and flare components. Due to the large size of the Warning Areas (50,140 square miles total) and relatively small increase in the amount of chaff and flare used (approximately 24,000 annual total), this equates to an annual increase in use of about two per square mile.

Bird species could potentially encounter chaff and flare components on the ocean surface while foraging. Some species of seabirds are known to ingest plastic when it is mistaken for prey (Auman et al., 1997; Yamashita et al., 2011; Provencher et al., 2014). Seabirds consuming plastic does not damage the digestive tract, unless consumed in large quantities (Moser and Lee, 1992). The ingestion of plastic such as chaff and flare compression pads or pistons by birds could cause gastrointestinal obstructions or hormonal changes leading to reproductive issues (Provencher et al., 2014). Unless consumed plastic pieces were regurgitated, the chaff and flare compression pads or pistons could cause digestive tract blockages and eventual starvation and could potentially be lethal to birds foraging on the ocean surface that use or migrate through the Warning Areas and feed at the ocean surface such as the Bermuda petrel and roseate tern. In addition, as previously stated, the majority of these chaff and flare plastic components would fall through the water column to the sea floor and would not remain on the ocean surface where a foraging bird would encounter and consume the plastic pieces. As previously discussed, the additional amount of plastic chaff and flare components that would be deposited into the marine environment is minor, and it is unlikely that foraging birds would encounter chaff and flare components while they were floating on the ocean surface. The potential for ingestion of plastic chaff and flare components as a result of the increased use of chaff and flares may affect but is not likely to adversely affect the Bermuda petrel and roseate tern.

The West Indian manatee, blue whale, fin whale, North Atlantic right whale, sei whale, and sperm whale could encounter the chaff and flare components within the offshore waters under the Warning Areas. In the unlikely event the marine mammals encountered and ingested, the small size of chaff components and flare end caps and pistons (i.e., 1.3-in. diameter and 0.13 in. thick) would aid in passing through the digestive tract of marine mammals (US Navy, 2009); therefore, the use of defensive countermeasures may affect but is not likely to adversely affect marine mammals.

Sea turtles, including the green sea turtle, hawksbill sea turtle, Kemp's ridley sea turtle, leatherback sea turtle, and loggerhead sea turtle could also encounter and ingest the end caps of chaff and flares. It is likely that small residual plastic components of chaff and flares would also pass through the digestive tract of mature sea turtles. Small plastic components could however cause digestive problems for sea turtles if ingested. Due to the large size of the Warning Areas that the proposed action intends to use, it is highly unlikely that a sea turtle would encounter chaff and flare components; therefore, the increased use of defensive countermeasures within the Warning Areas during contract ADAIR training may affect but is not likely to adversely affect sea turtles.

Atlantic sturgeon, giant manta ray, and the oceanic white tip shark are found offshore in the marine waters located under the Warning Areas. Due to the dispersion of the chaff and flare components, the chance of Atlantic sturgeon, giant manta ray, and the oceanic white tip shark encountering chaff and flare pistons and caps on the ocean floor while foraging would be highly unlikely. Even if the small chaff and flare plastic components were encountered by these species, there is no evidence that they would be mistaken for a food source and consume; therefore, the use of defensive countermeasures during contract ADAIR training may affect but is not likely to adversely affect the Atlantic sturgeon, giant manta ray, and the oceanic white tip shark.

The range of adult shortnose sturgeons in the Atlantic Ocean is very limited, and the species does not usually move into the Warning Areas. Given the limited range of the shortnose sturgeon in the Atlantic Ocean, the short periods of time that the species spends in saltwater environments, and the distance of the Warning Areas from coastal waters where the shortnose sturgeon is more likely to be found, the shortnose sturgeon would not be present in the Warning Areas; therefore, the shortnose sturgeon would not encounter plastic debris from chaff and flares in the Warning Areas, and the proposed project would have no effect on the shortnose sturgeon.

The Proposed Action may affect but is not likely to adversely affect the Bermuda petrel, roseate tern, West Indian manatee, blue whale, fin whale, North Atlantic right whale, sei whale, sperm whale, the green sea turtle, hawksbill sea turtle, Kemp's ridley sea turtle, leatherback sea turtle, loggerhead sea turtle, Atlantic sturgeon, giant manta ray, and the oceanic white tip shark. The Proposed Action would have no effect on the remaining listed species with the potential to occur below the special use airspace. Letters requesting concurrence with this determination were sent to the USFWS and NMFS. The Air Force received concurrence from the USFWS North Carolina Field Office and the self-certification letter from the Virginia Field Office with the effect determinations for the federally listed species under their respective jurisdictions. Consultation discussions with the NMFS Southeast Regional Office determined that this action is similar enough in scope, location, and effects determination as the consultation completed for the Joint Base Langley-Eustis ADAIR EIAP, for which concurrence was received from the NMFS Greater Atlantic Regional Fisheries Office and does not require additional consultation or response from NMFS. Correspondence with the USFWS and NMFS is included in **Appendix A**.

Wetlands

Overflights would not impact wetlands and there would be no need to fill or alter wetlands beneath overland special use airspace; therefore, there would be no impacts on wetlands beneath special use airspace under Alternative 1.

4.5.3 No Action Alternative

Under the No Action Alternative, the contract ADAIR operations would not occur at ISO, and there would be no training operations associated with contract ADAIR in the special use airspace. As such, there would be no change to biological resources.

4.6 LAND USE

4.6.1 Evaluation Criteria

Potential impacts on land use are based on the level of land use sensitivity in areas potentially affected by the Proposed Action and alternatives as well as compatibility of those actions with existing conditions. In general, a land use impact would be adverse if it met one of the following criteria:

- inconsistency or noncompliance with existing land use plans or policies;
- precluded the viability of existing land use;
- precluded continued use or occupation of an area;

- incompatibility with adjacent land use to the extent that public health or safety is threatened; and
- conflict with planning criteria established to ensure the safety and protection of human life and property.

4.6.2 Proposed Action

The Proposed Action includes contracting an estimated 14 contractor aircraft to fly roughly 2,590 annual sorties in the special use airspace to support the 4 FW and other units at Seymour Johnson AFB. One civilian airport, ISO, is being analyzed as suitable for possible use by a contract ADAIR service provider to support Seymour Johnson AFB. No construction or ground-disturbing activities are proposed. In addition, the Proposed Action includes operations in existing special use airspace (Hatteras/Pamlico MOAS with R-5306 and Core MOA, Echo MOA, Gamecock A MOA, Farmville MOA, R-5314/Phelps MOA, W-122, W-177, W-161, W-72).

4.6.2.1 Alternative 1 – Kinston Regional Jetport

There would be no change to land use patterns, land ownership, land management plans, or special use areas in the ROI as a result of the Proposed Action. As described in **Section 4.3.2.1**, the safety zones (e.g., RPZs) around the airport would not change as a result of the Proposed Action. The approximately 7 ac of existing incompatible land use would remain.

As listed in **Table 4-21**, the area potentially affected by increased noise levels of the Proposed Action would expand. The Proposed Action under the High Noise Scenario at ISO would result in an overall increase of newly exposed area affected by noise levels between the 65- and 80-dBA DNL by approximately 3,048 ac. The amount of land that is zoned as residential may increase by an estimated 79.7 ac within the 65- to 70-dBA DNL contour area; 52.4 ac within the 70- to 75-dBA DNL contour; and 14.5 ac within the 75- to 80-dBA DNL contour, rendering this area potentially incompatible for residential use. In addition, POIs may also experience an increase in noise, which are detailed in **Section 4.2.2.1.** The change in noise in some areas surrounding ISO under the High Noise Scenario would be potentially moderate and long-term and may be incompatible with the land use.

Table 4-21
Increase in Day-Night Average Sound Level Area Potentially Affected on and Surrounding Kinston Regional Jetport

Noise Level (dBA DNL)	Area Within Noise Contour (acres)		
	Low Noise Scenario Increase	Medium Noise Scenario Increase	High Noise Scenario Increase
>65	514	1,306	1,632
>70	222	687	809
>75	84	321	368
>80	70	174	239
>85	33	117	179

The Proposed Action under the Medium Noise Scenario at ISO would result in an overall increase in newly exposed area affected by noise levels between the 65- and 80-dBA DNL by approximately 2,488 ac. The amount of land zoned for residential use may increase by an estimated 56.6 ac within the 65- to 70-dBA DNL contour area; 54.3 ac within the 70- to 75-dBA DNL contour; and 11.4 ac within the 75- to 80-dBA DNL contour, rendering this area potentially incompatible for residential use. In addition, all POIs may also experience an increase in noise, which are detailed in **Section 4.2.2.1**. The change in noise in some areas

surrounding ISO under the Medium Noise Scenario would be potentially moderate and long-term and may be incompatible with the land use.

The Proposed Action under the Low Noise Scenario at ISO would result in an overall increase of newly exposed area affected by noise levels between 65- and 80-dBA DNL would expand by 923 ac. The amount of land zoned for residential use may increase an estimated 28.1 ac within the 65- to 70-dBA DNL contour area; 11.7 ac within the 70- to 75-dBA DNL contour; and 3 ac within the 75- to 80-dBA DNL contour, rendering this area potentially incompatible for residential use. In addition, some POIs may also experience an increase in noise, which are detailed in **Section 4.2.2.1**. The change in noise in some areas surrounding ISO under the Low Noise Scenario would be potentially moderate and long-term and may be incompatible with the land use.

Under the High, Medium, and Low Noise Scenario, the change in the noise environment at ISO represents a substantial increase the potential incompatibility of adjacent land use; therefore, implementing the Proposed Action would result in potentially moderate, long-term impacts on surrounding land use.

4.6.2.2 Alternative 1 – Airspace

There are no major metropolitan areas located beneath the overland special use airspace; therefore, no impacts on land use beneath the airspace would be expected. While sensitive areas such as wildlife refuges or national forests were identified beneath overland airspace, training activities presently occur in over these areas. Contract ADAIR training sorties would increase an estimated 20 percent from current operations. This increase from current training activities could potentially have a negligible impact on sensitive areas beneath the special use airspace. As discussed in **Section 4.2.2.2**, noise levels under the special use airspace would not change appreciably above current levels for any airspace, and therefore, no impacts on recreational uses are anticipated (see Biological Resources, **Section 4.5.2.4**, for information about the effects of sonic booms and noise on wildlife). No land use is associated with the proposed Warning Areas (W-122, W-177, W-161, and W-72) as this airspace is completely over water.

Contract ADAIR aircraft operations proposed in the special use airspace are not expected to impact the coastal zones of either North Carolina or Virginia. Federal consistency determinations were submitted to the state environmental quality agencies and can be found in **Appendix A.**

4.6.3 No Action Alternative

Under the No Action Alternative, there would be no addition of contract ADAIR personnel or aircraft located at the proposed airport. ADAIR operations would not occur in the special use airspace. No changes would occur to existing land use at the airport or under the special use airspace.

4.7 SOCIOECONOMICS – INCOME AND EMPLOYMENT

4.7.1 Evaluation Criteria

Consequences to socioeconomic resources were assessed in terms of the potential impacts on the local economy from proposed contract ADAIR. The level of impacts associated with the proposed contract ADAIR expenditure is assessed in terms of direct impacts on the local economy and related impacts on other socioeconomic resources (e.g., employment). The magnitude of potential impacts can vary greatly, depending on the location of an action. For example, implementation of an action that creates 10 employment positions might be unnoticed in an urban area but might have significant impacts in a rural region. In addition, if potential socioeconomic changes resulting from other factors were to result in substantial shifts in population trends or in adverse impacts on regional spending and earning patterns, they may be considered adverse.

4.7.2 Proposed Action

Under the Proposed Action, the Air Force would contract an estimated 2,590 sorties annually at a civilian airport, which would require an estimated 14 aircraft and 109 contract personnel. All potential impacts on socioeconomics – income and employment would be limited to the communities surrounding the airport. There would be no socioeconomic impacts in the special use airspace as contract ADAIR training in the airspace would not alter the income and employment in these areas.

4.7.2.1 Alternative 1 – Kinston Regional Jetport

The 109 contracted ADAIR maintenance personnel and pilots would represent a very small increase in the total employment associated with ISO, which is responsible for 1,515 jobs in the region. Therefore, no adverse impacts on income and employment would occur from the addition of contract ADAIR personnel at ISO under Alternative 1 regardless of the noise scenario implemented.

It is estimated that the maximum contracted value for ADAIR training would be $30,000 per flight hour (Headquarters ACC Acquisition Management and Integration Center, 2018), though most likely between $8,500 and $15,000 based on technical solution sought. This would therefore potentially increase annual expenditures in the region of up to approximately $39 million to support the 14 contracted fighter aircraft flying 2,590 annual sorties from ISO. These expenditures would be in the form of purchasing fuel, equipment, and materials to support the contract ADAIR sorties as well as the employment of 109 highly skilled contracted personnel (maintainers and pilots). These increased expenditures would boost the economic output of the ISO by approximately 8 percent and provide a long-term, potentially major, beneficial impact on the ROI through increased payroll tax revenue and the purchase of additional equipment, materials, and fuel needed for aircraft operations and maintenance under Alternative 1.

High Noise Scenario

As described in **Section 4.2**, increased noise at sensitive receptors would occur in the Kinston, North Carolina, area near the airport under the High Noise Scenario. All but five of the POIs analyzed would experience an increase in noise greater than a 3-dBA DNL from the additional sorties associated with the contract ADAIR aircraft under the High Noise Scenario; however, the noise levels would not exceed the 65-dBA DNL, which is the threshold for annoyance and would therefore be unlikely to reduce the value of existing residential homes and commercial properties in the Kinston area.

Medium Noise Scenario

Under the Medium Noise Scenario, all POIs analyzed would experience an increase in noise greater than a 3-dBA DNL from additional sorties associated with the contract ADAIR operations; however, the noise levels would not exceed the 65-dBA DNL, which is the threshold for annoyance and would therefore not likely impact the value of existing residential homes and commercial properties in the Kinston area.

Low Noise Scenario

Under the Low Noise Scenario, all but two POIs analyzed would experience an increase in noise greater than a 3-dBA DNL from additional sorties associated with the contract ADAIR operations; however, the noise levels would not exceed the 65-dBA DNL, which is the threshold for annoyance and would therefore not likely impact the value of existing residential homes and commercial properties in the Kinston area.

4.7.3 No Action Alternative

Under the No Action Alternative, the contract ADAIR operations would not occur and no expenditures would occur locally or regionally to support contracted aircraft or sorties. As a result, there would be no change in socioeconomics.

4.8 ENVIRONMENTAL JUSTICE

4.8.1 Evaluation Criteria

Environmental justice analysis applies to potential disproportionate impacts on minority, low-income, and youth populations. Environmental justice issues could occur if an adverse environmental or socioeconomic consequence to the human population fell disproportionately upon minority, low-income, or youth populations. Ethnicity and poverty status were examined and compared to state and national data to determine if these populations could be disproportionately affected by the Proposed Action.

4.8.2 Proposed Action

Under the Proposed Action, the Air Force would contract an estimated 2,590 ADAIR sorties annually at one of civilian airport. The addition of an estimated 14 aircraft and 109 contract personnel and their families, and the associated noise from those aircraft have the potential to cause disproportionate impacts on minorities and children in the community selected for contract ADAIR operations and maintenance. There would be no environmental justice impacts in the special use airspace as contract ADAIR training in the airspace would not substantially alter the noise environment.

4.8.2.1 Alternative 1 – Kinston Regional Jetport

Under the Proposed Action, the increase in the number of personnel in the Kinston, North Carolina, area supporting the contract ADAIR sorties would not result in a disproportionate impact on minorities, low-income populations, and protection of children, because there is adequate housing, community resources, and community services in the region to support the increase in personnel. The 109 additional personnel and their families supporting the contract ADAIR requirement would not disproportionately affect the availability of these resources to minorities, low-income populations, or children under all three noise scenarios for Alternative 1.

High Noise Scenario

The DNL increase under the Alternative 1 High Noise Scenario was modeled to be at or greater than a 3-dBA DNL at selected POIs but would not impact neighborhoods proximate to ISO as noise levels would not exceed the 65-dBA DNL at any of the POIs. Although the percentages of the population that identify as minorities and low income proximate to ISO are substantially higher than those throughout North Carolina and the United States, disproportionate impacts on minority populations or low-income communities would not occur under the High Noise Scenario as the threshold for annoyance due to noise would not be met.

The percentage of the population that is under the age of 18 in Lenoir County is similar to North Carolina and the United States. Further the noise environment would remain below the 65-dBA DNL threshold at all schools and child care facilities proximate to ISO under High Noise Scenario. Therefore, there would be no disproportionate impacts on youth populations.

Medium Noise Scenario

Under the Alternative 1 Medium Noise Scenario, all POIs analyzed would experience an increase in noise greater than a 3-dBA DNL from additional sorties associated with the contract ADAIR operations; however, the noise levels would not exceed the 65-dBA DNL, which is the threshold for annoyance. The percentage of the population that is under the age of 18 in Lenoir County is similar to North Carolina and the United States. Therefore, there would be no disproportionate impacts from contract ADAIR aircraft operations on minority or youth populations in the Kinston area.

Low Noise Scenario

Under the Alternative 1 Low Noise Scenario, all but two POIs analyzed would experience an increase in noise greater than a 3-dBA DNL from additional sorties associated with the contract ADAIR operations;

however, the noise levels would not exceed the 65-dBA DNL, which is the threshold for annoyance. The percentage of the population that is under the age of 18 in Lenoir County is similar to North Carolina and the United States. Therefore, there would be no disproportionate impacts from contract ADAIR aircraft operations on minority or youth populations in the Kinston area.

4.8.3 No Action Alternative

Contract ADAIR operations would not occur to support Seymour Johnson AFB under the No Action Alternative. Therefore, there would be no disproportionate impacts on minority or low-income communities or children from regional expenditures to support contracted aircraft or from the increased training sorties.

4.9 CULTURAL RESOURCES

4.9.1 Evaluation Criteria

Adverse impacts to cultural resources might include physically altering, damaging, or destroying all or part of a resource; altering characteristics of the resource that make it eligible for listing in the NRHP. Those effects can include introducing visual or audible elements that are out of character with the property or its setting; neglecting the resource to the extent that it deteriorates or is destroyed; or the sale, transfer, or lease of the property out of agency ownership (or control) without adequate enforceable restrictions or conditions to ensure preservation of the property's historic significance. For the purposes of this EA, an effect is considered adverse if it alters the integrity of a NRHP-listed or eligible resource or if it has the potential to adversely affect Traditional Cultural Properties and the practices associated with the property.

4.9.2 Proposed Action

Under the Proposed Action, the Air Force would contract an estimated 2,590 sorties annually (using existing airspace) at a civilian airport, which would require an estimated 14 aircraft and 109 contract personnel.

4.9.2.1 Alternative 1 – Kinston Regional Jetport

Under Alternative 1, the CAF would establish contract ADAIR capabilities with an estimated 14 aircraft providing 2,590 annual training sorties for Seymour Johnson AFB operating out of ISO. ISO was established as a US Navy pilot training base during World War II, was activated as Kinston Airfield on 17 October 1951, redesignated Stallings Air Base on 28 June 1953, and conducted flying training and contract flying training until inactivated 27 November 1957 (Manning, 2005). The current terminal was constructed in 1978 and designed to support commercial use. No buildings greater than 50 years old, and associated with military use of the airfield, are known to be extant. There are no historic districts or individual historic structures eligible for inclusion in the NRHP documented at ISO.

No ground disturbance would take place as part of the Proposed Action; therefore, no archaeological resources (surface or subsurface) would be disturbed or otherwise affected.

No historic structures or districts have been identified at ISO. No traditional cultural resources or sacred sites have been identified at ISO. No ground disturbance would take place as part of the Proposed Action; therefore, potential archaeological deposits would not be impacted.

The High, Medium, and Low Noise Scenarios are reported to result in DNL increases from 3-8 dBA at ISO and regional POIs in the vicinity of ISO (e.g., places of worship, schools) (see **Section 4.2** for details). DNL increases of greater than 3 dBA would be clearly noticeable and are classified as potentially significant. The 65-dBA DNL is the noise level below which generally all land uses are compatible with noise from aircraft operations; however, and though there is a potentially significant increase in DNL, POIs for all noise scenarios remain below this 65-dBA threshold. No historic resources are included as POIs, or were specifically modeled for this analysis; however, results from the existing ROIs can be extrapolated broadly to all cultural resources. Furthermore,130 dBA is the threshold under which noise is not believed to impact

components of a structure (for sounds lasting more than 1 second; Wyle Laboratories, Inc., 2008), and all DNLs remain below 85 dBA.

4.9.2.2 Alternative 1 – Airspace

There are 85 historic architectural resources are located beneath the airspace APE listed in the NRHP. Approximately 29 NRHP-listed archaeological sites, including a multicomponent prehistoric village site, a prehistoric pictograph site, several farmsteads and plantations, a confederate breastworks, and several shipwrecks are recorded within the counties below the special use airspace, 14 in Virginia and 15 in North Carolina (NPS, 2019).

Sorties within the Warning Areas would be performed at an altitude over the Atlantic Ocean that would not affect potential submerged resources. Noise (under the High, Medium, or Low Scenarios) would not impact cultural resources and would therefore have no effect, and consequently no impact, to historic properties in the Warning Areas.

The High, Medium, and Low Noise Scenarios for implementing contract ADAIR in the overland special use airspace results in a negligible increase in noise, and therefore would have no effect, and consequently no impact, to architectural resources, cultural resources, or historic properties.

4.9.3 No Action Alternative

This alternative provides a benchmark for assessment, preserving the status quo. Under this alternative, no contract ADAIR would be established at any regional airport in support of Seymour Johnson AFB nor would there be contract ADAIR training in any of the special use airspace proposed for use. As such, there would be no change to cultural resources.

4.10 Hazardous Materials and Wastes, and Toxic Substances

4.10.1 Evaluation Criteria

Impacts on HAZMAT management would be considered adverse if the federal action resulted in noncompliance with applicable federal, state, and local regulations, or increased the amounts generated or procured beyond a selected airport's waste management procedures and capacities.

4.10.2 Proposed Action

Under the Proposed Action, maintenance and operations of 14 contracted ADAIR aircraft could contribute to the volume of HAZMAT stored and used at the civilian airport and the amount of hazardous wastes generated. An emergency fuel dump could occur in the special use airspace; however, due to the infrequent nature of emergency fuel dumps as well as in-place safety precautions, these emergency procedures are not likely to have adverse effects.

4.10.2.1 Alternative 1 – Kinston Regional Jetport

Hazardous Materials and Wastes

The quantity of HAZMAT such as oil, Jet A fuel, hydrazine, hydraulic fluid, solvents, sealants, and antifreeze would increase with the operations and maintenance of contract ADAIR aircraft at ISO. HAZMAT required for the contract ADAIR aircraft and used by contract personnel would be procured, controlled, and tracked by Delta private jets and the selected private contractor. Only HAZMAT needed for operations and maintenance at the smallest quantities would be used and all of the HAZMAT used for contract ADAIR at ISO would be properly tracked and remain compliant with federal, state, and local regulations; therefore, there would be a minor impact from the increased HAZMAT use to support the contract ADAIR sorties at ISO.

The quantity of hazardous wastes generated (e.g., used petroleum products) would increase as a result of the contract ADAIR operations at ISO; however, all hazardous waste generated as a result of contract ADAIR aircraft operations and maintenance would be properly handled, stored, and disposed of following federal, state, and local regulations. Further, the ISO's *Spill Prevention Control and Countermeasures Plan* (ISO, 2012a) would reduce the likelihood of spills and provide rapid response to any discharges of oil or hazardous substances. As such, there would be no impact from the storage and disposal of hazardous waste in support of the contract ADAIR sorties at ISO.

Asbestos-Containing Materials and Lead-Based Paint

Existing facilities at ISO would be used to support contract ADAIR operations. It is not anticipated that any construction or renovation would be required that could disturb ACM and LBP and there would be no impacts from ACM and LBP.

Radon

There is a low potential for radon to pose a health hazard at ISO. Further, no new construction is proposed. As such, no impact from radon is anticipated.

Polychlorinated Biphenyls

Existing facilities at ISO would be used to support contract ADAIR operations. It is not anticipated that any construction or renovation would be required that could disturb PCB-containing materials (e.g., fluorescent lighting fixtures). Therefore, there would be no impacts from PCB.

4.10.3 No Action Alternative

Under the No Action Alternative, the contract ADAIR operations would not occur at ISO. As such, no increased quantity of HAZMAT would be used, and no increased quantity of hazardous wastes would be generated. No buildings to support contract ADAIR personnel would be used; therefore, there would be no potential disturbance of ACM, LBP, or PCBs in any of the airport buildings. As a result, there would be no direct or indirect impact on any HAZMAT or hazardous or special wastes under the No Action Alternative.

4.11 INFRASTRUCTURE, TRANSPORTATION, AND UTILITIES

4.11.1 Evaluation Criteria

Impacts on infrastructure from the Proposed Action are evaluated for their potential to disrupt or improve existing levels of service in the ROI, generate additional requirements for energy or water consumption, and impact resources such as sanitary sewer systems and waste management.

The Proposed Action would result in transportation impacts if it resulted in a substantial increase in traffic generation that would cause a decrease in the level of service, a substantial increase in the use of the connecting street systems or mass transit, or if on-site parking demand would not be met by projected supply.

The Proposed Action would result in an adverse impact on utilities or services if the project required more than the existing infrastructure could provide or required services in conflict with adopted plans and policies for the area.

4.11.2 Proposed Action

Under the Proposed Action, an estimated 109 contract personnel (maintainers and pilots) would utilize available facilities and the transportation network in and around the civilian airport to support an estimated 2,590 contracted sorties annually. No new construction or infrastructure changes would occur under the

Proposed Action; the airport proposed for use is assumed to have existing facilities adequate to support the Proposed Action.

4.11.2.1 Alternative 1 – Kinston Regional Jetport

ISO includes a runway with associated facilities that is sufficient to meet the needs of the proposed contract ADAIR operations. The facility includes an existing FBO to provide all associated major maintenance services for jet aircraft, and there is sufficient aircraft parking and surfaces to support contractor operations. The facilities, transportation network, and communication infrastructure can support the proposed operations, and the site is fully serviced with gas, electric, water/wastewater, and solid waste management utilities. The additional vehicular traffic associated with contract personnel is not anticipated to cause impacts on local traffic or the transportation network surrounding the airport.

The impacts on the existing infrastructure and utility service at ISO are anticipated to be negligible. Accordingly, the direct, long-term, adverse impact on the area transportation network from the additional contract ADAIR personnel associated with the Proposed Action would be minor.

4.11.3 No Action Alternative

Under the No Action Alternative, contract ADAIR operations would not be established for Seymour Johnson AFB. As a result, there would be no change to infrastructure, transportation, or utility services.

This page intentionally left blank

CHAPTER 5 CUMULATIVE IMPACTS AND OTHER ENVIRONMENTAL CONSIDERATIONS

This section includes an analysis of the potential cumulative impacts by considering past, present, and reasonably foreseeable future actions; potential unavoidable adverse impacts; the relationship between short-term uses of resources and long-term productivity; and irreversible and irretrievable commitment of resources.

5.1 CUMULATIVE EFFECTS

The CEQ regulations stipulate that the cumulative effects analysis considers the potential environmental consequences resulting from "the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions" (40 CFR § 1508.7). In addition, CEQ published guidance for addressing and analyzing cumulative impacts under NEPA. CEQ's publication, *Considering Cumulative Effects Under the National Environmental Policy Act* (January 1997), provides additional guidance for conducting an effective and informative cumulative impacts analysis.

This section identifies and evaluates past, present, and reasonably foreseeable future projects that could cumulatively affect environmental resources in conjunction with the Proposed Action. The ROI for the cumulative effects analysis is the same as defined for each resource in **Chapter 3**. Actions listed in **Table 5-1** would not interact with all resources; therefore, resources that potentially could result in a cumulative effect with the addition of the Proposed Action and alternatives are noted in these tables.

Assessing cumulative effects begins with defining the scope of other actions and their potential interrelationship with the Proposed Action or alternatives. Other activities or projects that coincide with the location and timetable of the Proposed Action and other actions are evaluated. Actions not identified in **Chapter 2** as part of the Proposed Action or alternatives but that could be considered as actions connected in time or space (40 CFR § 1508.25) may include projects that affect areas on or near the proposed regional airport.

An effort has been made to identify actions that are being considered or are in the planning phase at this time. To the extent that details regarding such actions exist and the actions have a potential to interact with the Proposed Action or alternatives, these actions are included in this cumulative analysis. This approach enables decision makers to have the most current information available in order that they can evaluate the potential environmental consequences of the Proposed Action.

5.2 PAST, PRESENT, AND REASONABLY FORESEEABLE ACTIONS

Past, present, and reasonably foreseeable actions at the proposed regional airport as well as in the region were considered. Recent past and ongoing aviation operations at ISO were considered as part of the baseline or existing condition in the ROI. Each project summarized in **Table 5-1** was reviewed to determine the implication of each action with the Proposed Action. Potential overlap of the affected area and project timing were considered.

Table 5-1
Past, Present, and Reasonably Foreseeable Projects at Kinston Regional Jetport and in the Special Use Airspace Proposed for Use

Scheduled Project	Project Summary	Implementation Date	Relevance to Proposed Action	Resource Potentially Affected
Alternative 1 – Kinston Regional Jetport				
Past Actions				
North Carolina Global TransPark Authority, North Carolina Global TransPark Environmental Impact Statement	Development of a transportation, manufacturing, and commercial facilities complex, expanding the existing Kinston Regional Jetport from 1,255 to 2,191 acres and would include aviation improvements and upgrades	Record of Decision, 1997	Location of the contract ADAIR training	Air Quality; Land Use; Socioeconomics – Income and Employment; Infrastructure, Transportation, and Utilities
North Carolina Global TransPark Master Planning and Environmental Study (Environmental Assessment)	Development of the North Carolina Global TransPark that includes an 11,500-ft runway, associated taxiways and facilities and land use planning for incremental development of adjacent manufacturing, distribution, and defense-related industrial park facilities	Early 2010s	Location of contract ADAIR training	Air Quality; Land Use; Land Use; Socioeconomics – Income and Employment; Infrastructure, Transportation, and Utilities
Present Actions				
US Highway 70 Broadband Fiber Optic Project	Installation of broadband fiber optic along US Highway 70 from Interstate 40 to Port of Morehead City	Construction scheduled for 2020; Complete: 2029	Construction overlap with contract ADAIR implementation	Air Quality
North Carolina State Road 148 to North Carolina State Roads 58 and 11 Multilane Project	Construction of a multilane facility from North Carolina State Road 148 (C.F. Harvey Parkway) to North Carolina State Roads 58 and 11	Construction currently underway	Potential construction overlap with contract ADAIR implementation	Air Quality

Table 5-1
Past, Present, and Reasonably Foreseeable Projects at Kinston Regional Jetport and in the Special Use Airspace Proposed for Use

Scheduled Project	Project Summary	Implementation Date	Relevance to Proposed Action	Resource Potentially Affected
Future Actions				
Kinston Bypass Project	US Highway 70 (future Interstate-42) – construction of the Kinston Bypass, North Carolina State Road 148 (Harvey Parkway) to US Highway 70 East of North Carolina State Road 58	Construction scheduled for 2023	Construction overlap with contract ADAIR implementation	Noise, Air Quality, Infrastructure, Transportation, and Utilities
Carey Road Extension Project	Construction of a multilane extension from State Road 1569 (Carey Road Extension) State Road 1572 to US Highway 258.	Construction scheduled for 2024	Construction overlap with contract ADAIR implementation	Noise, Air Quality, Infrastructure, Transportation, and Utilities
US Highway 258 from Browntown Road to C.F. Harvey Parkway Widening	US Highway 258 widening for multiple lanes from Browntown Road (State Road 1101) to C.F. Harvey Parkway (State Road 2010) (C.F. Harvey Parkway)	Construction scheduled for 2025	Construction overlap with contract ADAIR implementation	Air Quality, Infrastructure, Transportation, and Utilities
Aircraft Solutions, USA aircraft recycling project	Aircraft recycling project at North Carolina Global TransPark, construction of a large hangar system and paint shop; project should bring an estimated 475 jobs	Unknown at this time – announcement made 19 December 2019	At the same location as contract ADAIR implementation; construction overlap	Noise; Air Quality; Socioeconomics – Income and Employment; Hazardous Materials; Infrastructure, Transportation, and Utilities
Alternative 1– Airspace				
Future Actions				
Combat Air Force ADAIR, Joint Base Langley-Eustis EA	The Proposed Action includes contracted adversary air training, including 4,000 sorties and 109 personnel to conduct training operations in Warning Areas W-386, W-122, and W-72.	FONSI – 30 September 2019	Implementation overlap with Seymour Johnson ADAIR Proposed Action	Airspace Management and Use

Table 5-1
Past, Present, and Reasonably Foreseeable Projects at Kinston Regional Jetport and in the Special Use Airspace Proposed for Use

Scheduled Project	Project Summary	Implementation Date	Relevance to Proposed Action	Resource Potentially Affected
Fifth Generation Fighter Training Optimization EIS	Project involves permanent beddown of the F-22 FTU at Langley AFB. This EIS includes analysis of moving the F-22 FTU and T-38 (displaced from Tyndall AFB due to Hurricane Michael) currently at Eglin AFB, Florida, to Langley AFB, Virginia, and bedding down a second F-35A FTU squadron at Eglin AFB.	Public Scoping May 2019	Beddown implementation could occur within the same timeframe as contract ADAIR implementation.	Airspace Management and Use, Noise, Air Quality

Notes:
ADAIR = adversary air; AFB = Air Force Base; EA= Environmental Assessment; EIS = Environmental Impact Statement; FONSI = Finding of No Significant Impact; ft = foot(feet); FTU = formal training unit; mi = mile(s); US = United States

5.3 CUMULATIVE EFFECTS ANALYSIS

The following analysis considers how projects listed in **Table 5-1** could cumulatively result in potential environmental consequences with the Proposed Action and alternatives.

5.3.1 Airspace Management and Use

There would be no modifications to the existing airspace under the Proposed Action; however, with the additional demand for the same airspace from the Proposed ADAIR-Langley project and the 5th Generation Optimization EIS project, the potential for cumulative impacts on airspace management and use can be expected. As airspace demand in the region increases, the Air Force and US Navy, in conjunction with other managing agencies, will continue coordination to reduce potential impacts. Cumulative effects on airspace management and use from ADAIR operations when added to past, present, and reasonably foreseeable future actions are expected to be negligible.

5.3.2 Noise

The Proposed Action would result in long-term, highly noticeable impacts on noise under all noise scenarios at ISO. Several roadway construction projects are proposed during the same period as the Proposed Action at ISO; however, since this construction noise is localized to the construction site, it would be short-term. The Proposed Action, when added to past, present, and reasonably foreseeable future actions at ISO, would result in long-term, moderate cumulative effects on all POIs as well as an increase in the amount of noise in areas surrounding the airport.

The addition of contract ADAIR aircraft and future proposed actions could increase the number of sonic booms in the Warning Areas; however, this increase is expected to be negligible in the proposed ADAIR airspace compared to what currently exists; therefore, no cumulative effect on noise is expected in the airspace.

5.3.3 Safety

The Proposed Action, in addition to past, present, and reasonably foreseeable future actions at ISO would follow existing safety procedures and policies for ground and flight operations. Safety zones would not change under contract ADAIR. Contract personnel would be trained and required to follow safety procedures in accordance with established aircraft flight manuals as implemented by the contract. Contractor operations would and could pose an increased risk to flight, ground, and explosive safety; however, through compliance with the FAA and the DOD guidelines specified in DCMA INST 8210-1C, Chapter 6, and the contract ADAIR BASH Plan/FAA WHMP, the cumulative impact would be minimized. As such, no cumulative effects on flight, ground and explosive safety are expected with implementation of the Proposed Action in addition with the additional projects identified.

5.3.4 Air Quality

The Proposed Action, in addition to past, present, and reasonably foreseeable future actions at ISO, would result in less than significant cumulative impacts on air quality. With the addition of ongoing construction projects in the area, PM_{10} emissions could increase; however, these increases would be short in duration and the incremental impact on air quality would be negligible.

ADAIR training activities would occur at times below the mixing height (3,000 ft AGL) (see **Section 4.4.1**) in the Warning Areas, R-5306A and Core MOA, Farmville MOA, and R-5314/Phelps MOA; however, the duration would be short (approximately 10.2 minutes per sortie), and of the 2,720 sorties, only a small portion would occur at or below 3,000 ft AGL; therefore, impacts on air quality would not be significant. Overall, no incremental change to air quality is expected when adding the Proposed Action to past, present, and reasonably foreseeable future actions; therefore, cumulative effects on air quality in the special use airspace is expected to be less than significant.

5.3.5 Biological Resources

The Proposed Action, in addition to past, present, and reasonably foreseeable future actions on and off of ISO would result in less than significant cumulative impacts on biological resources. There are no projected impacts on threatened and endangered species including the RCW at ISO. When added to past, present, and reasonably foreseeable future action, the Proposed Action at ISO may result in an increased risk of aircraft bird and other wildlife strikes. Compliance with the contract ADAIR BASH Plan/FAA WHMP would reduce the potential cumulative risk of additional sortie operations associated with aircraft bird and other wildlife conflicts. The increased use of chaff and flares, in combination with the deposition of plastic and other debris in the proposed Warning Areas over the Atlantic Ocean, would have the potential for cumulative impacts on avian and marine species; however, the volume and size of plastic components from chaff and flares are very small over a large area. Cumulatively, the deposition of plastic components may affect but is not likely to adversely affect federally listed species occurring in the marine environment; therefore, there would be no significant cumulative effects on biological resources.

5.3.6 Land Use

The Proposed Action, in addition to past, present, and reasonably foreseeable future actions on and off ISO is expected to alter the noise environment, resulting in potential incompatibility with the surrounding land uses. The amount of area potentially affected by increased noise levels would increase rendering some areas potentially incompatible for residential use.

5.3.7 Socioeconomics – Income and Employment

The Proposed Action, as well as past, present, and reasonably foreseeable future actions on and off ISO, would not result in an adverse cumulative impact on the region's employment. Construction projects at the airport would result in a cumulative beneficial impact as local sales and payroll taxes would increase. The Proposed Action would increase annual expenditures in the local economy by up to approximately $39 million. This, along with other proposed projects at this public airport and by local governments, would create an economic boost to the region and represents a long-term, major, beneficial cumulative impact on the local economy.

5.3.8 Environmental Justice and Protection of Children

For ISO, on and off the airport, increased noise is not expected to have a disproportionate cumulative impact on minority and low-income populations or children.

5.3.9 Cultural Resources

The Proposed Action, as well as past, present, and reasonably foreseeable future actions on and off ISO is not anticipated to result in incremental cumulative impacts on cultural resources, archaeological resources, historic resources, or Native American Traditional Cultural Properties.

5.3.10 Hazardous Materials and Wastes and Toxic Substances

The Proposed Action, as well as past, present, and reasonably foreseeable future actions on and off ISO is not anticipated to result in significant cumulative impacts on the management of hazardous materials and wastes and toxic substances. Storage and quantity of jet fuels, solvents, oil, and other HAZMAT supporting contract ADAIR operations would increase in addition to past, present, and foreseeable future projects; however, this increase would result in a minor cumulative effect. The proposed contract ADAIR project, in addition to other proposed projects, would require compliance to hazardous waste management procedures in accordance with federal, state, and local regulations; therefore, no cumulative impacts on the storage and disposal of hazardous waste is expected. The addition of the proposed contract ADAIR project would not require any modifications to existing structures at this time nor pose any risks from ACM,

LBP, or PCB disturbance. No significant adverse cumulative impacts on hazardous materials and wastes and toxic substances are expected.

5.3.11 Infrastructure, Transportation, and Utilities

The Proposed Action, as well as past, present, and reasonably foreseeable future projects on and off ISO is not expected to result in adverse cumulative impacts on infrastructure, transportation, or utilities. Facilities, utilities, and transportation networks are adequate to support the Proposed Action in addition to the present and future projects. With the construction of future improvements to transportation networks in the vicinity of the airport, there is the potential for a minor beneficial cumulative impact on transportation. Construction of new fiber optic lines near ISO would result in a negligible beneficial cumulative impact on communication in this region.

5.4 Relationship between Short-Term Uses and Long-Term Productivity

CEQ regulations (§ 1502.16) specify that analysis must address "…the relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity." Attention should be given to impacts that narrow the range of beneficial uses of the environment in the long term or pose a long-term risk to human health or safety. This section evaluates the short-term benefits of the proposed project compared to the long-term productivity derived from not pursuing the proposed or alternative actions.

Short-term effects on the environment are generally defined as a direct consequence of a project in its immediate vicinity. For example, short-term effects could include localized disruptions from routine maintenance activities. Environmental commitments and BMPs in place for each project should reduce potential impacts or disruptions. Under the Proposed Action, these short-term uses would have a negligible cumulative effect.

The Proposed Action involves providing dedicated contract ADAIR sorties to employ adversary tactics within existing airspace. There would be no short-term effects on the airspace used by contract ADAIR activities and therefore no adverse impact on the long-term productivity and future use of the special use airspace proposed for contract ADAIR use. The Proposed Action also includes elements affecting the civilian airport such as ADAIR aircraft, facilities, maintenance, and personnel. Under the Proposed Action, at this time, it is not known if new construction would be required. No negative effects are expected from the Proposed Action short-term use or long-term productivity.

5.5 Irreversible and Irretrievable Commitment of Resources

Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that the uses of these resources have on future generations. Irreversible effects result primarily from the use or destruction of a specific resource (e.g., energy and minerals) that cannot be replaced within a reasonable time frame. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action.

The Proposed Action would use existing airspace to conduct contract ADAIR activities and is not expected to result in a significant irreversible and irretrievable commitment of airspace resources. The Proposed Action represents an increase of 30.1 percent in the number of operations at ISO. As such, flight operations and training would increase the consumption of additional fuel; and thereby, increasing the irreversible and irretrievable commitment of fuels. The addition of 109 contract personnel to support the Proposed Action also would create additional fuel consumption from daily commutes to and from the selected airport. Consumption of fuel associated with the Proposed Action, in addition to the total use of available fuels, is expected to result in a negligible decrease to the overall supply of regional petroleum resources. Additionally, use of training ordnance (chaff and flares) in the special use airspace would result in only a 6 percent increased commitment to chemicals and other ordnance materials; however, this increase is expected to be a negligible demand in relation to the overall supply of chemicals and ordnance materials. No significant irreversible or irretrievable commitment of resources is anticipated from implementing the Proposed Action.

This page intentionally left blank

CHAPTER 6 LIST OF PREPARERS AND CONTRIBUTORS

The following individuals assisted in the preparation of this EA:

Dean Alford, PG
Vernadero Group, Inc.
Senior Geologist
M.S. Geology/Geochemistry
B.S. Geology
Years of Experience: 32
Contribution: Hazardous Materials and Wastes

Anna Banda
Versar, Inc.
Geoscientist/Copy Editor
M.S. Geology
B.S. Geology
Years of Experience: 13
Contribution: Editing, Report Production, Intergovernmental/Interagency Coordination for Environmental Planning, Notice of Availability

Brian Bishop
Versar, Inc.
Environmental Scientist
M.S. Environmental Science
B.S. Biology
Years of Experience: 19
Contribution: DOPAA Development, Land Use, Biological Resources

Kevin Bradley
KBR
Engineering Manager
B.S. Aerospace Engineering
M.S. Aerospace Engineering
Years of Experience: 25 years
Contribution: Noise

Mackenzie Caldwell Rohm
Versar, Inc.
M.A. Anthropology/Archaeology
B.A. Anthropology/Archaeology/Sociology
Years of Experience: 18
Contribution: Cultural Resources

Rahul Chettri
Versar, Inc.
Senior Air Quality Engineer
M.S. Environmental Studies
B.S. Economics
Years of Experience: 37
Contribution: Air Quality

Brett Feulner
Dewberry Engineers, Inc.
Senior Environmental Scientist
B.S. Forest Management
Years of Experience: 16
Contribution: Geographic Information Systems/ Cartography, Biological Resources

Steven Harvey
Dewberry Engineers, Inc.
Senior Associate
Ph.D. Chemical Engineering
M.S. Civil Engineering
B.S. Mining Engineering
Years of Experience: 35
Contribution: Program Management

Chris Hobbs
KBR
Senior Acoustician
M.S. Physics
Years of Experience: 22
Contribution: Noise

Radhika Narayanan
Versar, Inc.
M.S. Environmental Science
B.S. Chemistry
Years of Experience: 29
Contribution: Air Quality

Thomas Phelan
KBR
Director, Air Vehicle Operation Unit
B.S. Aeronautical Engineering
M.S. Aeronautical Engineering
Years of experience: 41 (Navy and Contractor)
Contribution: Airspace and Safety

Peggy Roberts
Versar, Inc.
Senior NEPA Project Manager
M.S. Organizational Leadership/Project Management
M.S. Public Communications & Technology
B.A. Journalism/Public Relations
Years of Experience: 27 years
Contribution: Cumulative Impacts, Land Use

Tim Sletten
Versar, Inc.
Senior Environmental Scientist
B.S. Meteorology
Years of Experience: 35
Contribution: Air Quality

Beth Smyre
Dewberry Engineers, Inc.
Associate, Senior Planner
M.S. Coastal Engineering
B.S. Civil Engineering
B.A. Multidisciplinary Studies
Years of Experience: 19
Contribution: Program Management, Quality Control

Christa Stumpf
Versar, Inc.
Program Manager, NEPA Planner
M.S. Forest Resource and Land Use Planning
B.S. Wildland Management
Years of Experience: 25
Contribution: Project Management, QA/QC

Eric Webb
Vernadero Group, Inc.
Vice President and Technical Services Director
Ph.D. Oceanography and Coastal Sciences
M.S. Biology
B.S. Biology
Years of Experience: 25
Contribution: Socioeconomics, Environmental Justice, Hazardous Materials and Waste and Toxic Substances

Government Contributors

The following individuals contributed to this EA:

Contributor	Organization/Affiliation
Grace Keesling	AFCEC/CZN
Mike Ackerman	AFCEC/CZN
John Saghera	ACC/A3TO
Joshua Hudson	ACC/A3TO
Sarah Amthor	ACC AFIMSC DET 8/IS
George Duda	ACC/A8BA
Donald Mattner	ACC A589/A8BG
Brent Cartagena	ACC/A8BA
Rob Anderson	ACC AMIC/PMSA
Wanda Gooden	ACC AMIC/PMSA
Joshua Hudson	ACC AMIC/PMSA
Steven Allen	ACC AMIC/PMSA
Kevin Stiens	ACC AQC MGMT INTEG CE/DRJ
Major Pat Millot	ACC AFLOA/JACE-FSC
Tom Bucci	AFLOA/JACE-FSC
Cathryn Pesenti	Seymour Johnson AFB

This page intentionally left blank

CHAPTER 7 REFERENCES

Air Force. 1997. *Environmental Effects of Self-Protection Chaff and Flares Final Report*. Prepared for Headquarters ACC, Langley Air Force Base, Virginia. August.

Air Force. 2017. ACAM - U.S. Air Force Air Conformity Applicability Model -Quick Start Guide Version 5.0. Prepared for AFCEC, San Antonio, Texas by Solutio Environmental, Inc. July.

Air Force. 2018a. *Air Emissions Guide for Air Force Mobile Sources, Methods for Estimating Emissions of Air Pollutants for Mobile Sources at U.S. Air Force Installations*. Prepared for AFCEC, San Antonio, Texas by Solutio Environmental, Inc. September.

Air Force. 2018b. *Air Emissions Guide for Air Force Stationary Sources, Methods for Estimating Emissions of Air Pollutants for Stationary Sources at U.S. Air Force Installations*. Prepared for AFCEC, San Antonio, Texas by Solutio Environmental, Inc. September 2017.

American National Standards Institute, Inc. 1988. *Quantities and Procedures for Description and Measurement of Environmental Sound: Part 1, ANSI S12.9-1988*.

Auman, H. J., J. P. Ludwig, J. P. Giesy, and T. Colborn. 1997. *Plastic Ingestion by Laysan Albatross Chicks on Sand Island, Midway Atoll, in 1994 and 1995*. In G. Robinson and R. Gales (Eds.), Albatross Biology and Conservation, pp. 239–244. Surrey Beatty and Sons, Chipping Norton.

Berglund, B., and T. Lindvall, eds. 1995. *Community Noise, Jannes Snabbtryck, Stockholm, Sweden*.

Blanton, D. B., and S. G. Margolin. 1994. *An Assessment of Virginia's Underwater Cultural Resources.* Virginia Department of Historic Resources, Survey and Planning Report Series No. 3, College of William and Mary.

Chesapeake Bay Foundation. 2018. *Climate Change*. <http://www.cbf.org/issues/climate-change/>. Accessed 21 January 2020.

climaTemps. 2019. *Kinston, NC Climate & Temperature*. <http://www.kinston.climatemps.com>. Accessed 19 December 2019.

Commission for Environmental Cooperation. 1997. *Ecological Regions of North America: Toward a Common Perspective*. Montreal, Quebec, Canada. 71 pp.

Commission for Environmental Cooperation. 2011. *North American Terrestrial Ecoregions—Level III.* Montreal, Quebec, Canada.

Czech, J. J., and K. J. Plotkin. 1998. *NMAP 7.0 User's Manual*. Wyle Research Report WR 98-13. Wyle Laboratories, Inc. November.

Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*. Wetlands Research Program Technical Report Y-87-1. US Army Corps of Engineers Waterways Experiment Station. January.

FAA. 1997. *Final Environmental Impact Statement: Initial Development of the North Carolina Global TransPark*. July.

FAA. 2012. *Memorandum – Interim Guidance on Land Uses Within a Runway Protection Zone*. 27 September.

FAA. 2019. *Aviation Environmental Design Tool (AEDT) Version 3b User Guide*. Washington, DC: Office of Environment and Energy. September.

Griffith, G. E., J. M. Omernik, and J. A. Comstock. 2002a. *Ecoregions of North Carolina*. Project Report to North Carolina Department of Environment and Natural Resources. August.

Griffith, G. E., J. M. Omernik, J. A. Comstock, M. P. Schafale, W. H. McNab, D. R. Lenat, T. F. MacPherson, J. B. Glover, and V. B. Shelburne. 2002b. *Ecoregions of North Carolina and South Carolina, (color poster with map, descriptive text, summary tables, and photographs): Reston, Virginia, U.S. Geological Survey (map scale 1:1,500,000)*.

Grubb, T. Y, D. K. Delaney, W. W. Bowerman, and M. R. Weirda. 2010. *Golden Eagle Indifference to Heli-skiing and Military Helicopters in Northern Utah*. Journal of Wildlife Management 74:1275–1285.

Harris, C. M. 1979. *Handbook of Noise Control*. McGraw-Hill Book Co.

Headquarters ACC Acquisition Management and Integration Center. 2018. *Memorandum for CAF ADAIR (Solicitation No. FA4890-17-R-0007) – Maximum Price Per Flying Hour*. Provided to CAF ADAIR Interested Parties. 02 April.

Holland, J. H. 2012. *Atlantic Outer Continental Shelf Shipwreck Database, An Updated Inventory and Distribution Analysis.* Prepared by Jeffrey L. Holland, Senior Historian, TRC.

ISO. 2012a. *Spill Prevention Control & Countermeasure Plan*. Delta Private Jets – Kinston Fueling Facility. Prepared by The Lynch Group, Inc. February.

ISO. 2012b. *Wildlife Hazard Management Plan, CFR title 14 FAR Part 139.337.* In cooperation with U.S. Department of Agriculture, animal and Plant Health Inspection Service, Wildlife Services. October.

ISO. 2013. *Kinston Regional Jetport, Class I Airport, Airport Emergency Plan*. Draft.

Lenoir County. 2016. *Solid Waste Management Plan*.

Lewis, J. D. 2019. *A History of Kinston, North Carolina, The Known Towns/Villages of North Carolina*. <https://www.carolana.com/NC/Towns/Kinston_NC.html>. Accessed December 2019.

Lucas, M. J., and Calamia, P. T. 1997. *Military Operating Area and Range Noise Model MR_NMAP User's Manual*. Wyle Research Report WR 94-12-R. Wyle Laboratories Inc. March.

Manning, Thomas A. 2005. *History of Air Education and Training Command, 1942-2002.* Office of History and Research, Headquarters, AETC, Randolph AFB, Texas ASIN: B000NYX3PC.

Moser, M. L., and D. S. Lee. 1992. *A Fourteen-Year Survey of Plastic Ingestion by Western North Atlantic Seabirds*. Colonial Waterbirds 15(1):83–94.

NASA. 2017. *NASA Armstrong Fact Sheet: Sonic Booms*. <https://www.nasa.gov/centers/armstrong/news/FactSheets/FS-016-DFRC.html>. Accessed 10 October 2018.

National Audubon Society. 2020. *Guide to North American Birds*. <https://www.audubon.org/field-guide/bird/red-cockaded-woodpecker>. Accessed February 2020.

NCDEQ. 2020. *North Carolina Department of Environmental Quality Laserfiche WebLink Document Center*. <https://edocs.deq.nc.gov/WasteManagement/Welcome.aspx?cr=1>. Accessed March 2020.

NCDOT. 2015. *North Carolina Airport System Plan Update Technical Report*. Division of Aviation. December.

NCDOT. 2016. *C.F. Harvey Parkway Extension (STIP No. R-5703) Environmental Assessment*. June.

NCDOT. 2019. *North Carolina the State of Aviation; What Aviation Means to our Economy*. Division of Aviation. January.

NCGTP. 2017. *NCGTPA Kinston Regional Jetport Factsheet*. 23 January.

NCGTP. 2019. *Putting the World Within Your Reach*. <https://www.ncgtp.com/Pages/default.aspx#/>. Accessed 22 December 2019.

North Carolina Natural Heritage Program. 2019. *Natural Heritage Data Explorer*. <https://ncnhde.natureserve.org/>. Accessed December 2019

NCSHPO UAB. no date. *About the Underwater Archaeology Branch.* <https://archaeology.ncdcr.gov/underwater-archaeology-branch/about>. Accessed December 2019.

North Carolina Wildlife Resources Commission. 2015. *North Carolina Wildlife Action Plan*. Raleigh, North Carolina <http://www.ncwildlife.org/plan.aspx.> Accessed December 2019.

NOAA. 2020a. *National Oceanic and Atmospheric Administration Fisheries, Greater Atlantic Region ESA Section 7 Mapper*. <https://noaa.maps.arcgis.com/apps/webappviewer/index.html?id=1bc332edc5204e03b250ac11f9914a27>. Accessed April 2020.

NOAA. 2020b. *National Oceanic and Atmospheric Administration Fisheries, Threatened and Endangered Species and Critical Habitats Under NOAA Fisheries Jurisdiction*. <https://www.fisheries.noaa.gov/southeast/consultations/southeast-region>. Accessed April 2020.

NOAA. no date. *Wrecks and Obstructions Database.* <https://nauticalcharts.noaa.gov/data/wrecks-and-obstructions.html>. Accessed December 2019.

North Carolina Climate Office. 2019. *NC Climate Synopsis.* <https://climate.ncsu.edu/climate/synopsis>. Accessed 19 December 2019.

North Carolina Environmental Education. 2019. *North Carolina River Basins*. <https://ncdenr.maps.arcgis.com/apps/PublicInformation/index.html?appid=f82f583438e74bf29adcc76247381eee>. Accessed December 2019.

North Carolina Interagency Leadership Team. 2012. *Climate Ready North Carolina - Building a Resilient Future.*

North Carolina Wetland Functional Assessment Team. 2016. *N.C. Wetland Assessment Method (NC WAM) User Manual*. Version 5. February.

NPS. 2002. *How to Apply the National Register Criteria for Evaluation*. National Register Bulletin 15. Washington, DC, US Department of the Interior, National Park Service, Interagency Resources Division. <https://www.nps.gov/nr/publications/bulletins/nrb15/nrb15_4.htm>, accessed February 2018.

NPS. 2017. *Physiological Provinces.* <https://www.nps.gov/subjects/geology/physiographic-provinces.htm>. Accessed December 2019.

NPS. 2019. *National Register Database and Research*. <https://www.nps.gov/subjects/nationalregister/database-research.htm>. Accessed December 2019.

NPS. no date. *National Register of Historic Places (NRHP) Data Download.* <https://www.nps.gov/subjects/nationalregister/data-downloads.htm>. Accessed December 2019.

PBS&J. 2010. *North Carolina Global TransPark Master Properties Maps*. December.

Plotkin, K. J. 1993. *Sonic Boom Focal Zones from Tactical Aircraft Maneuvers, Journal of Aircraft.* Volume 30, Number 1. January–February.

Plotkin, K. J. 2002. *Computer Models for Sonic Boom Analysis: PCBoom4, CABoom, BooMap, CORBoom*. Wyle Laboratories Research Report WR 02-11. June.

Provencher, J., A. Bond, A. Hedd, W. Montevecchi, S. Muzaffar, S. Courchesne, H. Gilchrist, S. Jamieson, F. Merkel, K. Falk, J. Durinck, and M. Mallory. 2014. *Prevalence of Marine Debris in Marine Birds from the North Atlantic*. Marine Pollution Bulletin 84:411–417.

Schultz, T. J. 1978. *Synthesis of Social Surveys on Noise Annoyance*. Journal of the Acoustical Society of America 64(2):377–405. August.

South Carolina Institute of Archaeology and Anthropology. no date. *Maritime Research Division (MRD)*. <https://artsandsciences.sc.edu/sciaa/division-maritime-research>. Accessed December 2019.

Stusnick, E., K. A. Bradley, J. A. Molino, and G. DeMiranda. 1992. *The Effect of Onset Rate on Aircraft Noise Annoyance, Volume 2: Rented Home Experiment*. Wyle Laboratories Research Report WR 92-3. March.

The Heritage Foundation. 2015. *2016 Index of U.S. Military Strength: Assessing America's Ability to Provide for the Common Defense*. Davis Institute for National Security and Foreign Policy.

US Bureau of Labor Statistics. 2020a. *Labor Force Data by County, 2018 Annual Averages*.

US Bureau of Labor Statistics. 2020b. *Local Area Unemployment Statistics, 2018 Annual Averages*.

US Census Bureau. 2020. *U.S. Census Bureau QuickFacts for the United States*. <https://www.census.gov/quickfacts/fact/table/US/PST045218>. Accessed January 2020.

US Climate Data. 2019. *Climate Data for Kinston, North Carolina*. <https://www.usclimatedata.com/climate/kinston/north-carolina/united-states/usnc0359>. Accessed 19 December 2019.

US Department of Housing and Urban Development. 2017. *Tribal Directory Assessment Tool (TDAT).* Community Planning and Development, Office of Environment and Energy, Environmental Planning Division. <https://egis.hud.gov/tdat>. Accessed December 2019.

US Energy Information Administration. 2018. *Energy-related Carbon Dioxide Emissions by State, 2000-2015*. US Department of Energy, Washington, DC. January.

US Navy. 2009. *Virginia Capes Range Complex Final Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS).* Prepared by the US Fleet Forces. March.

US Navy. 2018. *Atlantic Fleet Training and Testing Draft Environmental Impact Statement/Overseas Environmental Impact Statement*. September.

US Surgeon General. 2005. S*urgeon General Releases National Health Advisory on Radon*. United States Department of Health and Human Services. January 2005.

USEPA. 1978. *Protective Noise Levels*. Office of Noise Abatement and Control, Washington, D.C. USEPA Report 550/9-79-100. November.

USEPA. 2009. *AP 42, Fifth Edition Compilation of Air Pollutant Emissions Factors, Volume 1: Stationary Point and Area Sources.* Chapter 15: Ordnance Detonation. July.

USEPA. 2019a. *2014 National Emissions Inventory (NEI) Data.* <https://www.epa.gov/air-emissions-inventories/2014-national-emissions-inventory-nei-data>. Accessed 18 December 2019.

USEPA. 2019b. *EPA Map of Radon Zones*. EPA 402/F19/004. June.

USEPA. 2020. *Learn about Polychlorinated Biphenyls (PCBs).* <https://www.epa.gov/pcbs/learn-about-polychlorinated-biphenyls-pcbs>. Accessed January 2020.

USFWS. 2019. *Southeastern Wildlife Species Profiles*. <https://www.fws.gov/southeast/wildlife/>. Accessed December 2019.

USFWS. 2020. *Information and Planning and Information Planning and Consultation*. <https://ecos.fws.gov/ipac>. Accessed January 2020.

Virginia Department of Game and Inland Fisheries. 2018. *Threatened, Endangered, and Special Concern Species*. <https://www.dgif.virginia.gov/wildlife/>. Accessed December 2019

Venable, J. 2016. *Fighter Pilots Aren't Flying Enough to Hone the Skills of Full-Spectrum War. Defense One*. 21 November. <http://www.defenseone.com/ideas/2016/11/fighter-pilots-arent-flying-enough-hone-skills-full-spectrum-war/133328/>. Accessed 16 March 2018.

Virginia Fish and Wildlife Information Service. 2019. *VaFWIS Search Report*: *Known or Likely to Occur Within a 3-Mile Radius Around Point Newport News Park / Newport News City*. Virginia Department of Game and Inland Fisheries. <https://vafwis.dgif.virginia.gov/fwis/?Menu=Home>. Accessed January 2020.

Wasmer, F., and F. Maunsell. 2006a. *BaseOps 7.3 User's Guide*. Wasmer Consulting.

Wasmer, F., and F. Maunsell. 2006b. *NMPlot 4.955 User's Guide*. Wasmer Consulting.

Woods, A. J., J. M. Omernik, and D.D. Brown. 1999. *Ecoregions of Delaware, Pennsylvania, Virginia, and West Virginia.* July.

Wyle Laboratories, Inc. 2008. *Noise Basics and the Effect of Aviation Noise on the Environment*.

Yamashita, R., H. Takada, M. A. Fukuwaka, and Y. Watanuki. 2011. *Physical and Chemical Effects of Ingested Plastic Debris on Short-Tailed Shearwaters, Puffinus tenuirostris, in the North Pacific Ocean*. Marine Pollution Bulletin 62(12):2845–2849.

This page intentionally left blank

APPENDICES

This page intentionally left blank

APPENDIX A

INTERAGENCY AND INTERGOVERNMENTAL COORDINATION AND CONSULTATIONS

This page intentionally left blank

Table of Contents

Page

State Historic Preservation Office Consultation A-5

Mailing List A-7
Coordination Letters A-9
Responses A-19

United States Fish and Wildlife Service and National Marine Fisheries Service Consultation A-25

Mailing List A-27
Coordination Letters A-29
Responses A-61

General A-101

Mailing List A-103
Coordination Letters A-107
Responses A-121

Government-to-Government Consultation A-173

Mailing List A-175
Coordination Letters A-177
Responses A-211

Coastal Zone Management Act Federal Consistency Determination A-217

Draft Environmental Assessment Notices of Availability A-239

This page intentionally left blank

Appendix A-1

State Historic Preservation Office Consultation

This page intentionally left blank

Mailing List

Renee Gledhill-Earley
SHPO, Division of Historical Resources
4617 Mail Service Center
Raleigh, NC 27699-4617

Marc Holma
SHPO, Department of Historic Resources
2801 Kensington Avenue
Richmond, VA 23221

This page intentionally left blank

Coordination Letters

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

11 February 2020

Mr. Dennis G. Goodson, P.E.
Deputy Base Engineer
4th Civil Engineer Squadron
1095 Peterson Avenue
Seymour Johnson Air Force Base, NC 27531-2355

Ms. Renee Gledhill-Earley
NC State Historic Preservation Office
4617 Mail Service Center
Raleigh, NC 27699-4617

Dear Ms. Gledhill-Earley:

The United States Air Force (Air Force) and Headquarters Air Combat Command have proposed to provide Combat Air Forces contract adversary air (ADAIR) support for Seymour Johnson Air Force Base (AFB) located in North Carolina. ADAIR will address shortfalls in combat readiness and provide the necessary capability and capacity to employ adversary tactics across the training spectrum from basic fighter maneuvers to higher-end, advanced combat training missions. In accordance with the National Environmental Policy Act (NEPA) of 1969, the Council of Environmental Quality regulations, and Air Force NEPA regulations, Seymour Johnson AFB is in the process of preparing an Environmental Assessment to assess the potential environmental impacts of contract ADAIR support for Seymour Johnson AFB.

Pursuant to 36 CFR Sections 800.4(a) and (b), we request your assistance defining the Area of Potential Effects and information on any historic properties located therein that may be affected by our undertaking. Attached are location maps for your review. Your comments will help us develop the scope of our environmental review.

The Proposed Action is to contract the support of approximately 2,590 ADAIR sorties annually using 14 contractor-owned and contractor-operated aircraft. Contract ADAIR would support Seymour Johnson AFB training operating out of one of three potential regional airports: Kinston Regional Jetport (ISO), Fayetteville Regional Airport (FAY), and Newport News-Williamsburg International Airport (PHF). Aircraft would depart from airport runways, transit from the airport to military special use airspace, perform ADAIR training, transit back, and land at the airport. Training activities would use existing special use airspace near Seymour Johnson AFB (see attachment). Operations and maintenance facilities would be contracted by the service provider at the civilian airport to support the ADAIR mission.

To ensure the Air Force has sufficient time to consider your input in the preparation of the Draft EA, and for compliance with Section 106 of the National Historic Preservation Act, please provide comments or request for additional information to Ms. Cathryn Pesenti at 4 CES/CEIEA, 1095 Peterson Avenue, Seymour Johnson AFB, North Carolina 27531 or by electronic mail to cathryn.pesenti@us.af.mil. We request your comments within 30 days of receipt of this letter to ensure we can address them during the environmental impact analysis process. Thank you in advance for your assistance.

DENNIS G. GOODSON, P.E.

Attachment:
Special Use Airspace proposed for use by contract ADAIR training

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

11 February 2020

Mr. Dennis G. Goodson, P.E.
Deputy Base Engineer
4th Civil Engineer Squadron
1095 Peterson Avenue
Seymour Johnson Air Force Base, NC 27531-2355

Mr. Marc Holma
VA Department of Historic Resources
2801 Kensington Avenue
Richmond, VA 23221

Dear Mr. Holma:

The United States Air Force (Air Force) and Headquarters Air Combat Command have proposed to provide Combat Air Forces contract adversary air (ADAIR) support for Seymour Johnson Air Force Base (AFB) located in North Carolina. ADAIR will address shortfalls in combat readiness and provide the necessary capability and capacity to employ adversary tactics across the training spectrum from basic fighter maneuvers to higher-end, advanced combat training missions. In accordance with the National Environmental Policy Act (NEPA) of 1969, the Council of Environmental Quality regulations, and Air Force NEPA regulations, Seymour Johnson AFB is in the process of preparing an Environmental Assessment to assess the potential environmental impacts of contract ADAIR support for Seymour Johnson AFB.

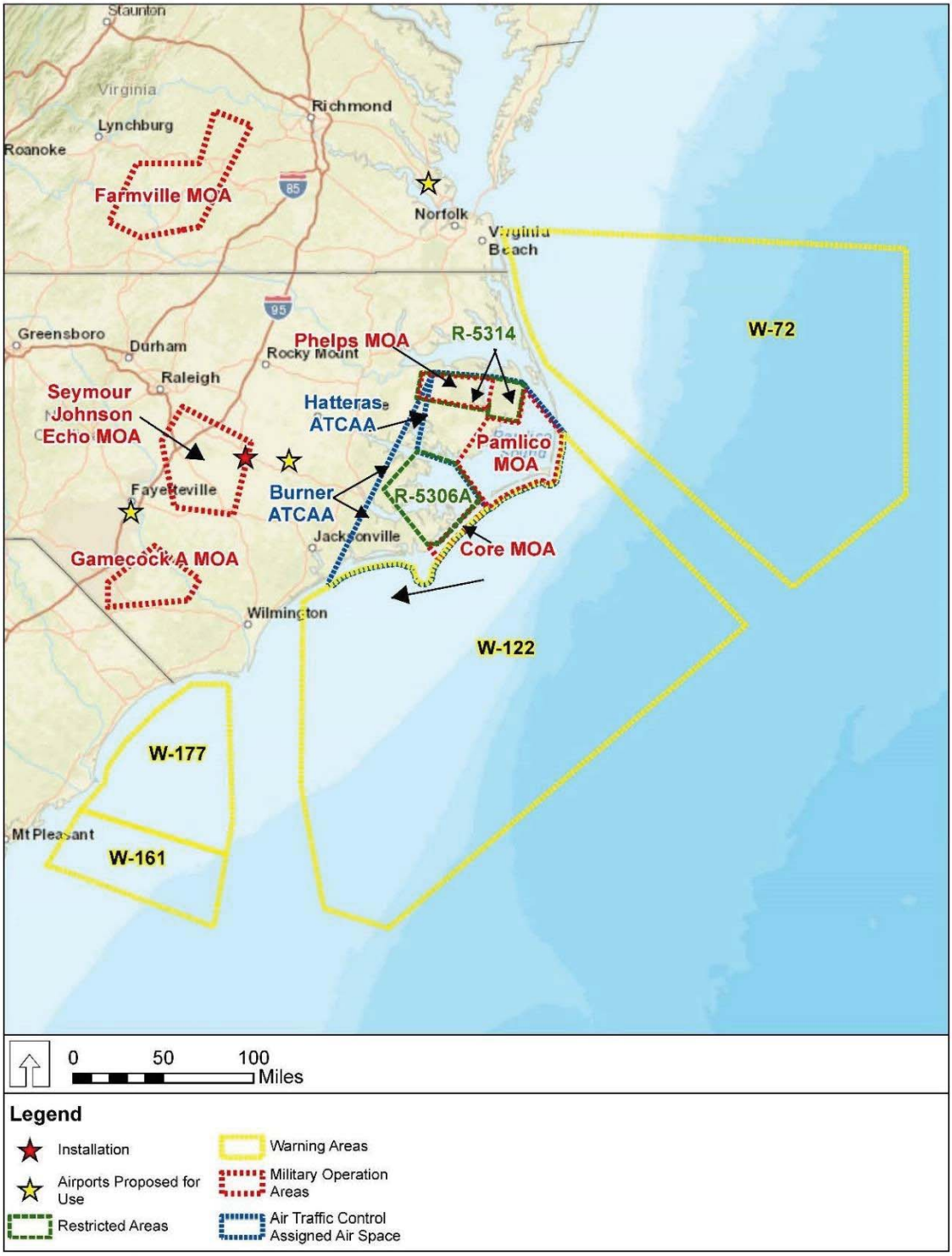
Pursuant to 36 CFR Sections 800.4(a) and (b), we request your assistance defining the Area of Potential Effects and information on any historic properties located therein that may be affected by our undertaking. Attached are location maps for your review. Your comments will help us develop the scope of our environmental review.

The Proposed Action is to contract the support of approximately 2,590 ADAIR sorties annually using 14 contractor-owned and contractor-operated aircraft. Contract ADAIR would support Seymour Johnson AFB training operating out of one of three potential regional airports: Kinston Regional Jetport (ISO), Fayetteville Regional Airport (FAY), and Newport News-Williamsburg International Airport (PHF). Aircraft would depart from airport runways, transit from the airport to military special use airspace, perform ADAIR training, transit back, and land at the airport. Training activities would use existing special use airspace near Seymour Johnson AFB (see attachment). Operations and maintenance facilities would be contracted by the service provider at the civilian airport to support the ADAIR mission.

To ensure the Air Force has sufficient time to consider your input in the preparation of the Draft EA, and for compliance with Section 106 of the National Historic Preservation Act, please provide comments or request for additional information to Ms. Cathryn Pesenti at 4 CES/CEIEA, 1095 Peterson Avenue, Seymour Johnson AFB, North Carolina 27531 or by electronic mail to cathryn.pesenti@us.af.mil. We request your comments within 30 days of receipt of this letter to ensure we can address them during the environmental impact analysis process. Thank you in advance for your assistance.

DENNIS G. GOODSON, P.E.

Attachment:
Special Use Airspace proposed for use by contract ADAIR training



Special Use Airspace proposed for use by contract ADAIR training

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

27 April 2020

Mr. Dennis G. Goodson, P.E.
Deputy Base Engineer
4th Civil Engineer Squadron
1095 Peterson Avenue
Seymour Johnson Air Force Base, NC 27531-2355

Ms. Renee Gledhill-Earley
NC State Historic Preservation Office
109 East Jones Street
Raleigh, NC 27601

Dear Ms. Gledhill-Early:

In February, I sent you a letter briefly describing the Air Force's proposal to establish an adversary air (ADAIR) operation in support of Seymour Johnson Air Force Base (AFB), North Carolina. Now, per 36 Code of Federal Regulations § 800.11(e), I would like to provide documentation of our finding of *No Adverse Effect* and respectfully request your concurrence with this determination.

The Proposed Action is to contract the support of approximately 2,590 ADAIR sorties annually using 14 contractor-owned and contractor-operated aircraft. Contract ADAIR would support Seymour Johnson AFB training operating out of Kinston Regional Jetport (ISO) in North Carolina. Aircraft would depart from airport runways, transit from the airport to military special use airspace, perform ADAIR training, transit back, and land at the airport. Training activities would use existing special use airspace near Seymour Johnson AFB. Operations and maintenance facilities would be contracted by the service provider at the civilian airport to support the ADAIR mission. No new construction or ground disturbance is included as part of the current Proposed Action.

ISO was established as a United States Navy pilot training base during World War II and conducted flying training and contract flying training until inactivated in 1957. The current terminal was constructed in 1978 and designed to support commercial use. No buildings greater than 50 years old, and associated with military use of the airfield, are known to be extant.

The buildings being proposed for use as part of contract ADAIR are modern. The High, Medium, and Low Noise Scenarios modeled for this Environmental Assessment (EA) are reported to result in Day-Night Average Sound Level (DNL) increases ranging from 3 to 8 A-weighted decibels (dBA). DNL increases of greater than 3 dBA would be clearly noticeable; however, the 65-dBA DNL is the noise level below which generally all land uses are considered compatible with noise from aircraft operations, and all noise scenarios remain below this threshold. No ground disturbance would take place as part of the Proposed Action, and current data indicate no known traditional cultural properties are associated with ISO.

There are 85 National Register of Historic Places–listed historic architectural resources located beneath the proposed existing special use airspace, including a multicomponent prehistoric village site, a prehistoric pictograph site, several farmsteads and plantations, a confederate breastworks, and several shipwrecks. The High, Medium, and Low Noise Scenarios modeled for implementing contract ADAIR in the overland special use airspace would result in a negligible increase in noise, and therefore would have no effect, and consequently no impact, to architectural resources, cultural resources, or historic properties. Sorties flown in special use airspace over the Atlantic Ocean would be performed at an altitude that would not affect potential submerged resources.

The Air Force therefore requests written concurrence with its finding of *No Adverse Effect* regarding the Proposed Action to support Seymour Johnson AFB, North Carolina. To ensure the Air Force has sufficient time to consider your input in the preparation of the EA, and for compliance with Section 106 of the National Historic Preservation Act, please provide comments or requests for additional information within 30 days of receipt of this letter. The Draft EA and the Proposed Finding of No Significant Impact (FONSI) are available at https://www.seymourjohnson.af.mil/Home/SJAFB-Environmental-Management/. Please provide comments on the Draft EA and Proposed FONSI or requests for additional information to Cathryn Pesenti at 4 CES/CEIEA, 1095 Peterson Avenue, Seymour Johnson AFB, North Carolina 27531, by electronic mail to cathryn.pesenti@us.af.mil, or by phone at (919) 722-7455.

The Air Force is aware of the potential impact of the ongoing coronavirus (COVID-19) pandemic on the usual methods of access to information and ability to communicate, such as the mass closure of local public libraries and challenges with the sufficiency of an increasingly overburdened internet. The Air Force seeks to implement appropriate additional measures to ensure that all interested stakeholders have the opportunity to participate fully in this EA process.

Accordingly, please do not hesitate to contact us directly at the email address or telephone number provided above; we are available to discuss and help resolve issues involving access to the Draft EA and Proposed FONSI or the ability to comment. Thank you in advance for your consideration.

GOODSON.DENNIS.G.1229806528 Digitally signed by GOODSON.DENNIS.G.1229806528 Date: 2020.04.27 14:50:39 -04'00'

DENNIS G. GOODSON, P.E.

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

27 April 2020

Mr. Dennis G. Goodson, P.E.
Deputy Base Engineer
4th Civil Engineer Squadron
1095 Peterson Avenue
Seymour Johnson Air Force Base, NC 27531-2355

Mr. Marc Holma
VA Department of Historic Resources
2801 Kensington Avenue
Richmond, VA 23221

Dear Mr. Holma:

On 12 February, you received a letter directly from me briefly describing the Air Force's proposal to establish an adversary air (ADAIR) operation in support of Seymour Johnson Air Force Base (AFB), North Carolina. In this letter, pursuant to 36 CFR Sections 800.4(a) and (b), we requested your assistance defining the Area of Potential Effects and information on any historic properties located therein that may be affected by our undertaking. Your office was also made aware of this proposal through the Virginia Department of Environmental Quality, Office of Environmental Impact Review, which coordinates the Commonwealth's response to environmental documents for proposed state and federal projects

Now, per 36 Code of Federal Regulations § 800.11(e), I would like to provide documentation of our finding of *No Adverse Effect* and respectfully request your concurrence with this determination.

The Proposed Action is to contract the support of approximately 2,590 ADAIR sorties annually using 14 contractor-owned and contractor-operated aircraft. Contract ADAIR would support Seymour Johnson AFB training operating out of one of Kinston Regional Jetport (ISO) in North Carolina. Aircraft would depart from airport runways, transit from the airport to military special use airspace, perform ADAIR training, transit back, and land at the airport. Training activities would use existing special use airspace near Seymour Johnson AFB. Operations and maintenance facilities would be contracted by the service provider at the civilian airport to support the ADAIR mission. No new construction or ground disturbance is included as part of the current Proposed Action.

There are 85 National Register of Historic Places–listed historic architectural resources located beneath the proposed existing special use airspace, including a multicomponent prehistoric village site, a prehistoric pictograph site, several farmsteads and plantations, a confederate breastworks, and several shipwrecks. The High, Medium, and Low Noise Scenarios modeled for implementing

contract ADAIR in the overland special use airspace would result in a negligible increase in noise, and therefore would have no effect, and consequently no impact, to architectural resources, cultural resources, or historic properties. Sorties flown in special use airspace over the Atlantic Ocean would be performed at an altitude that would not affect potential submerged resources.

The Air Force therefore requests written concurrence with its finding of *No Adverse Effect* regarding the Proposed Action to support Seymour Johnson AFB. To ensure the Air Force has sufficient time to consider your input in the preparation of the Environmental Assessment (EA), and for compliance with Section 106 of the National Historic Preservation Act, please provide comments or requests for additional information within 30 days of receipt of this letter.

The Draft EA and the Proposed Finding of No Significant Impact (FONSI) are available at https://www.seymourjohnson.af.mil/Home/SJAFB-Environmental-Management/. Please provide comments on the Draft EA and Proposed FONSI or requests for additional information within 30 days of receipt of this letter to Cathryn Pesenti at 4 CES/CEIEA, 1095 Peterson Avenue, Seymour Johnson AFB, North Carolina 27531, by electronic mail to cathryn.pesenti@us.af.mil, or by phone at (919) 722-7455.

The Air Force is aware of the potential impact of the ongoing coronavirus (COVID-19) pandemic on the usual methods of access to information and ability to communicate, such as the mass closure of local public libraries and challenges with the sufficiency of an increasingly overburdened internet. The Air Force seeks to implement appropriate additional measures to ensure that all interested stakeholders have the opportunity to participate fully in this EA process. Accordingly, please do not hesitate to contact us directly at the email address or telephone number provided above; we are available to discuss and help resolve issues involving access to the Draft EA and Proposed FONSI or the ability to comment. Thank you in advance for your consideration.

GOODSON.DENNIS.G.1229806528 Digitally signed by GOODSON.DENNIS.G.1229806528 Date: 2020.04.27 14:51:22 -04'00'

DENNIS G. GOODSON, P.E.

This page intentionally left blank

Responses

Multi

Received: 02/21/2020
Historic Preservation Office

(I)

NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

COUNTY: WAYNE

G07: MILITARY ACTIVITES (TRAINING, FLIGHT ROUTES, BASE EXPANSIONS

STATE NUMBER: 20-E-0000-0172
DATE RECEIVED: 02/13/2020
AGENCY RESPONSE: 03/11/2020
REVIEW CLOSED: 03/16/2020

MS RENEE GLEDHILL-EARLEY
CLEARINGHOUSE COORDINATOR
DEPT OF NATURAL & CULTURAL RESOURCE
STATE HISTORIC PRESERVATION OFFICE
MSC 4617 - ARCHIVES BUILDING
RALEIGH NC

ER 20-0351

Due: 03/02/2020

A- (NC) DJC 2/25/2020

Due: 03/05/2020

S- See comment KBH 3/10/20

REVIEW DISTRIBUTION

DEPT OF ENVIR. QUALITY - COASTAL MG
DEPT OF ENVIRONMENTAL QUALITY
DEPT OF NATURAL & CULTURAL RESOURCE
DEPT OF TRANSPORTATION
DNCR - NATURAL HERITAGE PROGRAM
DPS - DIV OF EMERGENCY MANAGEMENT
EASTERN CAROLINA COUNCIL

PROJECT INFORMATION

APPLICANT: Dept. of the Air Force
TYPE: National Environmental Policy Act Scoping

DESC: Proposed project is for the Combat Air Forces Contract Adversary Air Support for Seymour Johnson Air Force Base.

The attached project has been submitted to the N. C. State Clearinghouse for intergovernmental review. Please review and submit your response by the above indicated date to 1301 Mail Service Center, Raleigh NC 27699-1301.

If additional review time is needed, please contact this office at (919)807-2425.

AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED: ☐ NO COMMENT ☒ COMMENTS ATTACHED

SIGNED BY: RGledhill-Earley DATE: 3-12-20

FEB 2 4 2020

North Carolina Department of Natural and Cultural Resources
State Historic Preservation Office
Ramona M. Bartos, Administrator

Governor Roy Cooper
Secretary Susi H. Hamilton

Office of Archives and History
Deputy Secretary Kevin Cherry

March 12, 2020

Dennis Goodson
c/o Cathryn Pesenti
4th Civil Engineer Squadron
1095 Peterson Avenue
Seymour Johnson Aire Force Base, NC 27531

Cathryn.pesenti@us.af.mil

Re: Assess Environmental Impacts of Contract ADAIR Support, Seymour-Johnson Air Force Base, Multi County, ER 20-0351

Dear Mr. Goodson:

Thank you for your letter of February 12, 2020, regarding the above-referenced undertaking. We have reviewed your submittal and offer the following comments. This information was also provided to us by the North Carolina State Clearinghouse, under project number 20-E-0000-0172.

It is unlikely that the proposed undertaking will adversely affect historic properties near the Kinston and Fayetteville airports. When drafting the Environmental Assessment, please provide maps that show the 65 DNL noise contours at each airport. This will provide enough information to assess sound impacts to historic properties within the immediate vicinity of the airports.

There are no known archaeological sites within the proposed project area. Based on our knowledge of the area, it is unlikely that any archaeological resources that may be eligible for inclusion in the National Register of Historic Places will be affected by the project. We, therefore, recommend that no archaeological investigation be conducted in connection with this project.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at [redacted] or environmental.review@ncdcr.gov. In all future communication concerning this project, please cite the above referenced tracking number.
Sincerely,

Renee Gledhill-Earley

for Ramona Bartos, Deputy
State Historic Preservation Officer

Location: 109 East Jones Street, Raleigh NC 27601 Mailing Address: 4617 Mail Service Center, Raleigh NC 27699-4617 Telephone/Fax: (919) 807-6570/807-6599

COMMONWEALTH of VIRGINIA

Department of Historic Resources

Matt Strickler
Secretary of Natural Resources

2801 Kensington Avenue, Richmond, Virginia 23221

Julie V. Langan
Director

Tel: (804) 367-2323
Fax: (804) 367-2391
www.dhr.virginia.gov

8 April 2020

Mr. Dennis Goodson
Department of the Air Force
4th Civil Engineering Squadron
1095 Peterson Avenue
Seymour Johnson Air Force Base, NC 27531

Re: Combat Adversary Air at Newport News-Williamsburg International Airport
City of Newport News and York County, Virginia
DHR File No. 2020-0260; DEQ Project No. 20-042F

Dear Mr. Goodson

Through the Virginia Department of Environmental Quality (DEQ) we were made aware of the above referenced project.

We want to remind you that the Department of the Air Force, as a federal agency, must consider the effects of its actions on historic properties listed in or eligible for the National Register of Historic Places and provide the Advisory Council on Historic Preservation the opportunity to comment in accordance with Sections 106 of the National Historic Preservation Act, as amended, and its implementing regulation 36 CFR 800. The Section 106 review process begins when the federal agency provides a description of the undertaking and its Area of Potential Effect (APE) to the State Historic Preservation Officer (SHPO), which in Virginia is the Department of Historic Resources (DHR). For this reason, we request that you consult with us directly on this undertaking. While 36 CFR 800.8 allows federal agencies to coordinate Section 106 compliance with the National Environmental Policy Act (NEPA), the agency must inform the applicable SHPO early in the process that it intends to do so. The agency must also take care that the environmental documentation prepared under NEPA does present information about historic properties and potential effects to such resources at a level of detail that allows the SHPO and other consulting parties to comment.

We look forward to working with you on this project. If you have any questions concerning our comments, please contact me at [redacted]

Sincerely,

Marc Holma, Architectural Historian
Review and Compliance Division

C: Mr. John Fisher, DEQ

Administrative Services
10 Courthouse Ave.
Petersburg, VA 23803
Tel: (804) 862-6408
Fax: (804) 862-6196

Eastern Region Office
2801 Kensington Avenue
Richmond, VA 23221
Tel: (804) 367-2323
Fax: (804) 367-2391

Western Region Office
962 Kime Lane
Salem, VA 24153
Tel: (540) 387-5443
Fax: (540) 387-5446

Northern Region Office
5357 Main Street
PO Box 519
Stephens City, VA 22655
Tel: (540) 868-7029
Fax: (540) 868-7033

COMMONWEALTH of VIRGINIA

Department of Historic Resources

Matt Strickler
Secretary of Natural Resources

2801 Kensington Avenue, Richmond, Virginia 23221

Julie V. Langan
Director

Tel: (804) 367-2323
Fax: (804) 367-2391
www.dhr.virginia.gov

MEMORANDUM

DATE: 19 May 2020

DHR File # 2020-0260
DEQ File # 20-042F

TO: Mr. Dennis G. Goodson
Air Force

FROM: Marc E. Holma, Architectural Historian [redacted]
Office of Review and Compliance

PROJECT: Combat Adversary Air at Newport News-Williamsburg International Airport
City of Newport News and York County, Virginia

____ This project will have an effect on historic resources. Based on the information provided, the effect will not be adverse.

____ This project will have an adverse effect on historic properties. Further consultation with DHR is needed under Section 106 of the NHPA.

____ Additional information is needed before we will be able to determine the effect of the project on historic resources. **Please see below.**

__X__ No further identification efforts are warranted. No historic properties will be affected by the project. Should unidentified historic properties be discovered during implementation of the project, please notify DHR.

____ We have previously reviewed this project. Attached is a copy of our correspondence.

____ Other (Please see comments below)

COMMENTS: **C: Mr. John Fisher, DEQ**

Administrative Services
10 Courthouse Ave.
Petersburg, VA 23803
Tel: (804) 862-6408
Fax: (804) 862-6196

Eastern Region Office
2801 Kensington Avenue
Richmond, VA 23221
Tel: (804) 367-2323
Fax: (804) 367-2391

Western Region Office
962 Kime Lane
Salem, VA 24153
Tel: (540) 387-5443
Fax: (540) 387-5446

Northern Region Office
5357 Main Street
PO Box 519
Stephens City, VA 22655
Tel: (540) 868-7029
Fax: (540) 868-7033

North Carolina Department of Natural and Cultural Resources
State Historic Preservation Office
Ramona M. Bartos, Administrator

Governor Roy Cooper
Secretary Susi H. Hamilton

Office of Archives and History
Deputy Secretary Kevin Cherry

June 17, 2020

Dennis Goodson
c/o Cathryn Pesenti [redacted]
Fourth Civil Engineer Squadron
1095 Peterson Avenue
Seymour Johnson Aire Force Base, NC 27531

Re: Assess Environmental Impacts of Contract ADAIR Support, Seymour-Johnson Air Force Base, Multi County, ER 20-0351

Dear Mr. Goodson:

Thank you for your letter of April 27, 2020, transmitting additional information regarding the above-referenced undertaking. We have also received the Draft Environmental Assessment information provided to us by the North Carolina State Clearinghouse, under project number 20-E-0000-0172. We apologize for the delay in our response and any inconvenience it may have caused.

We note that, per your letter, all noise scenarios will remain below the 65-dBA DNL threshold. We also note that the draft Environmental Assessment incorporates the results of noise scenario modeling, which includes data and maps. We concur that the proposed undertaking will have no adverse effect on historic properties.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at [redacted] or environmental.review@ncdcr.gov. In all future communication concerning this project, please cite the above referenced tracking number.

Sincerely,

Renee Gledhill-Earley

for Ramona Bartos, Deputy
State Historic Preservation Officer

cc: Crystal Best, State Clearinghouse [redacted]

Location: 109 East Jones Street, Raleigh NC 27601 **Mailing Address**: 4617 Mail Service Center, Raleigh NC 27699-4617 **Telephone/Fax**: (919) 807-6570/807-6599

This page intentionally left blank

Appendix A-2

United States Fish and Wildlife Service and National Marine Fisheries Service Consultation

This page intentionally left blank

Mailing List

Pete Benjamin
USFWS Ecological Services
551 Pylon Drive, #F
Raleigh, NC 27606

Sarah Nystrom
USFWS Ecological Services
6669 Short Lane
Gloucester, VA 23061

David Bernhart
Division Director (Acting) Administrator
NOAA, Southeast Regional Fisheries Office
263 13th Avenue South
St. Petersburg, FL 33701

Julie Crocker
Acting Assistant Regional Administrator
NOAA, Greater Atlantic Regional Fisheries Office
55 Great Republic Drive
Gloucester, MA 01930

Cathy Tortorici
Division Chief
NOAA, Office of Protected Resources
1315 East-West Highway, 13th Floor
Silver Spring, MD 20910

This page intentionally left blank

Coordination Letters

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

FEB 0 4 2020

Mr. Dennis G. Goodson, P.E.
Deputy Base Engineer
4th Civil Engineer Squadron
1095 Peterson Avenue
Seymour Johnson Air Force Base, NC 27531-2355

Mr. Pete Benjamin
US Fish and Wildlife Service
Raleigh Ecological Services Office
P.O. Box 33726
Raleigh, NC 27636-3726

Dear Mr. Benjamin:

This letter is being sent in accordance with United States Air Force (Air Force) requirements for Interagency and Intergovernmental Coordination for Environmental Planning. The Air Force and Headquarters Air Combat Command have proposed to provide Combat Air Forces contract adversary air (ADAIR) support for Seymour Johnson Air Force Base (AFB), North Carolina, to address shortfalls in combat readiness. This will provide the capability and capacity to employ adversary tactics from basic fighter maneuvers to higher-end, advanced combat training missions. In accordance with the National Environmental Policy Act (NEPA) of 1969, the Council of Environmental Quality regulations, and the Air Force NEPA regulations, Seymour Johnson AFB is in the process of preparing an Environmental Assessment to assess the potential environmental impacts of contract ADAIR support for Seymour Johnson AFB.

The Proposed Action is to contract the support of approximately 2,590 ADAIR sorties annually using 14 contractor-owned and contractor-operated aircraft. Contract ADAIR would support Seymour Johnson AFB training operating out of one of three potential regional airports: Kinston Regional Jetport (ISO), Fayetteville Regional Airport (FAY), and Newport News-Williamsburg International Airport (PHF). Aircraft would depart from airport runways, transit from the airport to military special use airspace, perform ADAIR training, transit back, and land at the airport. Training activities would use existing special use airspace near Seymour Johnson AFB that overlie North Carolina, Virginia, as well as the Atlantic Ocean off the coasts of Virginia, North Carolina, and South Carolina (see attachment). Operations and maintenance facilities would be contracted by the service provider at the civilian airport to support the ADAIR mission.

Pursuant to Section 7 of the Endangered Species Act, we request additional information on listed, proposed, and candidate species of designated or proposed critical habitats may be in the

action area. This information and your comments on the Proposed Action will help us develop the scope of our environmental review.

Please forward your written comments or requested for additional information to Ms. Cathryn Pesenti at 4 CES/CEIEA, 1095 Peterson Avenue, Seymour Johnson AFB, North Carolina 27531 or by electronic mail to cathryn.pesenti@us.af.mil. We request your comments within 30 days of receipt of this letter to ensure we can address them during the environmental impact analysis process. Thank you in advance for your assistance.

DENNIS G. GOODSON, P.E.

Attachment:
Special Use Airspace proposed for use by contract ADAIR training

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

FEB 0 4 2020

Mr. Dennis G. Goodson, P.E.
Deputy Base Engineer
4th Civil Engineer Squadron
1095 Peterson Avenue
Seymour Johnson Air Force Base, NC 27531-2355

Ms. Sarah Nystrom
US Fish and Wildlife Service
Virginia Field Office
6669 Short Lane
Gloucester, VA 23061

Dear Ms. Nystrom:

This letter is being sent in accordance with United States Air Force (Air Force) requirements for Interagency and Intergovernmental Coordination for Environmental Planning. The Air Force and Headquarters Air Combat Command have proposed to provide Combat Air Forces contract adversary air (ADAIR) support for Seymour Johnson Air Force Base (AFB), North Carolina, to address shortfalls in combat readiness. This will provide the capability and capacity to employ adversary tactics from basic fighter maneuvers to higher-end, advanced combat training missions. In accordance with the National Environmental Policy Act (NEPA) of 1969, the Council of Environmental Quality regulations, and the Air Force NEPA regulations, Seymour Johnson AFB is in the process of preparing an Environmental Assessment to assess the potential environmental impacts of contract ADAIR support for Seymour Johnson AFB.

The Proposed Action is to contract the support of approximately 2,590 ADAIR sorties annually using 14 contractor-owned and contractor-operated aircraft. Contract ADAIR would support Seymour Johnson AFB training operating out of one of three potential regional airports: Kinston Regional Jetport (ISO), Fayetteville Regional Airport (FAY), and Newport News-Williamsburg International Airport (PHF). Aircraft would depart from airport runways, transit from the airport to military special use airspace, perform ADAIR training, transit back, and land at the airport. Training activities would use existing special use airspace near Seymour Johnson AFB that overlie North Carolina, Virginia, as well as the Atlantic Ocean off the coasts of Virginia, North Carolina, and South Carolina (see attachment). Operations and maintenance facilities would be contracted by the service provider at the civilian airport to support the ADAIR mission.

Pursuant to Section 7 of the Endangered Species Act, we request additional information on listed, proposed, and candidate species of designated or proposed critical habitats may be in the

action area. This information and your comments on the Proposed Action will help us develop the scope of our environmental review.

Please forward your written comments or requested for additional information to Ms. Cathryn Pesenti at 4 CES/CEIEA, 1095 Peterson Avenue, Seymour Johnson AFB, North Carolina 27531 or by electronic mail to cathryn.pesenti@us.af.mil. We request your comments within 30 days of receipt of this letter to ensure we can address them during the environmental impact analysis process. Thank you in advance for your assistance.

DENNIS G. GOODSON, P.E.

Attachment:
Special Use Airspace proposed for use by contract ADAIR training

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

FEB 0 4 2020

Mr. Dennis G. Goodson, P.E.
Deputy Base Engineer
4th Civil Engineer Squadron
1095 Peterson Avenue
Seymour Johnson Air Force Base, NC 27531-2355

Ms. Julie Crocker
NOAA Fisheries (NMFS)
Greater Atlantic Regional Fisheries Office
55 Great Republic Drive
Gloucester, MA 01930

Dear Ms. Crocker:

This letter is being sent in accordance with United States Air Force (Air Force) requirements for Interagency and Intergovernmental Coordination for Environmental Planning. The Air Force and Headquarters Air Combat Command have proposed to provide Combat Air Forces contract adversary air (ADAIR) support for Seymour Johnson Air Force Base (AFB), North Carolina, to address shortfalls in combat readiness. This will provide the capability and capacity to employ adversary tactics from basic fighter maneuvers to higher-end, advanced combat training missions. In accordance with the National Environmental Policy Act (NEPA) of 1969, the Council of Environmental Quality regulations, and the Air Force NEPA regulations, Seymour Johnson AFB is in the process of preparing an Environmental Assessment to assess the potential environmental impacts of contract ADAIR support for Seymour Johnson AFB.

The Proposed Action is to contract the support of approximately 2,590 ADAIR sorties annually using 14 contractor-owned and contractor-operated aircraft. Contract ADAIR would support Seymour Johnson AFB training operating out of one of three potential regional airports: Kinston Regional Jetport (ISO), Fayetteville Regional Airport (FAY), and Newport News-Williamsburg International Airport (PHF). Aircraft would depart from airport runways, transit from the airport to military special use airspace, perform ADAIR training, transit back, and land at the airport. Training activities would use existing special use airspace near Seymour Johnson AFB that overlie North Carolina, Virginia, as well as the Atlantic Ocean off the coasts of Virginia, North Carolina, and South Carolina (see attachment). Operations and maintenance facilities would be contracted by the service provider at the civilian airport to support the ADAIR mission.

Pursuant to Section 7 of the Endangered Species Act, the Marine Mammal Protection Act, and the Magnuson-Stevens Fishery Conservation and Management Act, we request any additional information you may have with regard to the potential effects of the Proposed Action on protected resources or sensitive marine habitats. Further we request additional information on listed,

proposed, and candidate species or designated or proposed critical habitats may be in the action area. This information and your comments on the Proposed Action will help us develop the scope of our environmental review.

Please forward your written comments or requested for additional information to Ms. Cathryn Pesenti at 4 CES/CEIEA, 1095 Peterson Ave., Seymour Johnson AFB, North Carolina 27531 or by electronic mail to cathryn.pesenti@us.af.mil. We request your comments within 30 days of receipt of this letter to ensure we can address them during the environmental impact analysis process. Thank you in advance for your assistance.

DENNIS G. GOODSON, P.E.

Attachment:
Special Use Airspace proposed for use by contract ADAIR training

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

FEB 0 4 2020

Mr. Dennis G. Goodson, P.E.
Deputy Base Engineer
4th Civil Engineer Squadron
1095 Peterson Avenue
Seymour Johnson Air Force Base, NC 27531-2355

Mr. David Bernhart
NOAA Fisheries (NMFS)
Southeast Regional Fisheries Office
263 13th Avenue South
St. Petersburg, FL 33701

Dear Mr. Bernhart:

This letter is being sent in accordance with United States Air Force (Air Force) requirements for Interagency and Intergovernmental Coordination for Environmental Planning. The Air Force and Headquarters Air Combat Command have proposed to provide Combat Air Forces contract adversary air (ADAIR) support for Seymour Johnson Air Force Base (AFB), North Carolina, to address shortfalls in combat readiness. This will provide the capability and capacity to employ adversary tactics from basic fighter maneuvers to higher-end, advanced combat training missions. In accordance with the National Environmental Policy Act (NEPA) of 1969, the Council of Environmental Quality regulations, and the Air Force NEPA regulations, Seymour Johnson AFB is in the process of preparing an Environmental Assessment to assess the potential environmental impacts of contract ADAIR support for Seymour Johnson AFB.

The Proposed Action is to contract the support of approximately 2,590 ADAIR sorties annually using 14 contractor-owned and contractor-operated aircraft. Contract ADAIR would support Seymour Johnson AFB training operating out of one of three potential regional airports: Kinston Regional Jetport (ISO), Fayetteville Regional Airport (FAY), and Newport News-Williamsburg International Airport (PHF). Aircraft would depart from airport runways, transit from the airport to military special use airspace, perform ADAIR training, transit back, and land at the airport. Training activities would use existing special use airspace near Seymour Johnson AFB that overlie North Carolina, Virginia, as well as the Atlantic Ocean off the coasts of Virginia, North Carolina, and South Carolina (see attachment). Operations and maintenance facilities would be contracted by the service provider at the civilian airport to support the ADAIR mission.

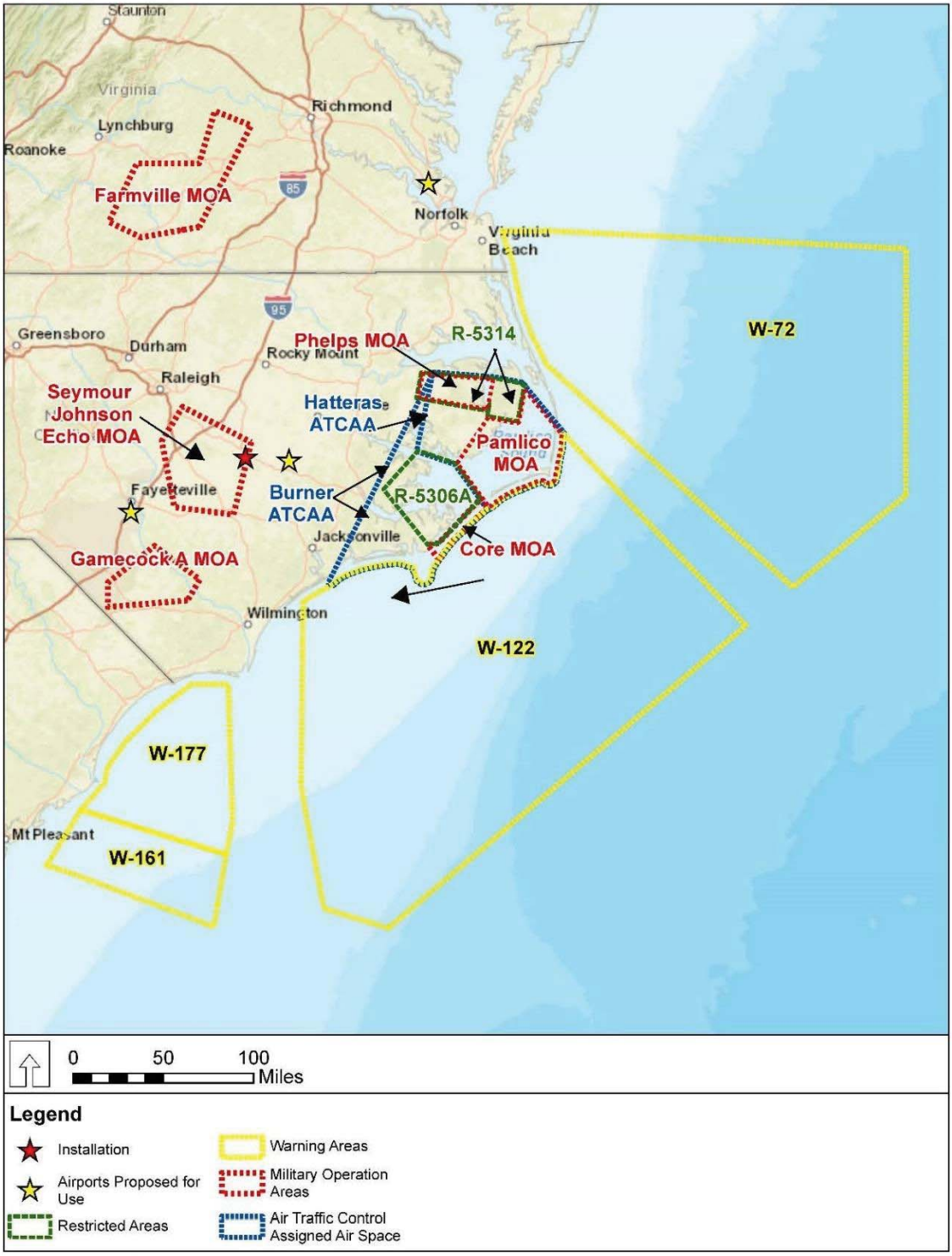
Pursuant to Section 7 of the Endangered Species Act, the Marine Mammal Protection Act, and the Magnuson-Stevens Fishery Conservation and Management Act, we request any additional information you may have with regard to the potential effects of the Proposed Action on protected resources or sensitive marine habitats. Further we request additional information on listed,

proposed, and candidate species or designated or proposed critical habitats may be in the action area. This information and your comments on the Proposed Action will help us develop the scope of our environmental review.

Please forward your written comments or requested for additional information to Ms. Cathryn Pesenti at 4 CES/CEIEA, 1095 Peterson Ave., Seymour Johnson AFB, North Carolina 27531 or by electronic mail to cathryn.pesenti@us.af.mil. We request your comments within 30 days of receipt of this letter to ensure we can address them during the environmental impact analysis process. Thank you in advance for your assistance.

DENNIS G. GOODSON, P.E.

Attachment:
Special Use Airspace proposed for use by contract ADAIR training



Special Use Airspace proposed for use by contract ADAIR training

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

27 April 2020

Mr. Dennis G. Goodson, P.E.
Deputy Base Engineer
4th Civil Engineer Squadron
1095 Peterson Avenue
Seymour Johnson Air Force Base, NC 27531-2355

Mr. Pete Benjamin
US Fish and Wildlife Service
Raleigh Ecological Services Office
P.O. Box 33726
Raleigh, NC 27636-3726

Dear Mr. Benjamin:

The United States Air Force (Air Force) has prepared a Draft Environmental Assessment (EA) and Proposed Finding of No Significant Impact (FONSI) evaluating the potential environmental impacts associated with the proposed Combat Air Forces contract adversary air (ADAIR) support for Seymour Johnson Air Force Base (AFB), North Carolina. The Draft EA was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations implementing NEPA, and the Air Force NEPA regulations. In addition, we have provided the Air Force's effect determinations for the federally listed species and designated critical habitat for review and concurrence by the United States Fish and Wildlife Service (USFWS).

The Proposed Action is to contract the support of approximately 2,590 ADAIR sorties annually using 14 contractor-owned and contractor-operated aircraft. Contract ADAIR would support training for the 4th Fighter Wing (4 FW) at Seymour Johnson AFB in Goldsboro, North Carolina by operating out of Kinston Regional Jetport (ISO). Aircraft would depart from the airport runway, transit from the airport to military special use airspace, perform ADAIR training, transit back, and land at the selected airport. Training activities would use existing special use airspace near Seymour Johnson AFB (see Figure 1 in the Enclosure). Operations and maintenance facilities would be contracted by the service provider at ISO to support the ADAIR mission. There are no construction activities associated with the Proposed Action.

Special use airspace includes Military Operations Areas (MOAs), Air Traffic Control Assigned Airspaces (ATCAAs), and Warning Areas which provide airspace for military aircraft training and serve to warn nonparticipating pilots of potential danger. The primary operational airspace that would be used by contract ADAIR aircraft would be offshore Warning Area W-122 located about 60 miles southeast of Seymour Johnson AFB over the Atlantic Ocean, as well as Warning Areas W-161/177/72 (Enclosure). The overland special use airspace available for use by ADAIR missions include Seymour Johnson Echo, Gamecock A, Farmville, Phelps, Pamlico, and Core MOAs; Burner and Hatteras ATCAAs; and Restricted Areas R-5306A and R-5314.

As summarized in the Enclosure, for the Proposed Action that would occur at ISO and within the overland special use airspace, we have made no effect determinations for listed amphibians; birds, with the exception of the Bermuda petrel (*Pterodroma cahow*) and roseate tern (*Sterna dougallii dougallii*); fish; mammals, with the exception of the West Indian manatee (*Trichechus manatus*); mollusks; plants; and reptiles with the potential to occur within the regions of influence. We have made a may affect, not likely to adversely affect determination for the Bermuda petrel, roseate tern, and West Indian manatee. While there may be impacts to sea turtles in the Warning Areas, the impacts and the effect determination will be coordinated with the National Marine Fisheries Service, Office of Protected Species in a separate correspondence. Moreover, we have determined there would be no impact

to designated critical habitat located within the overland special use airspace proposed for use. The Enclosure provides a summary of the effects determination for the federally listed species and critical habitat. Additional detail can be found in in Sections 3.6 and 4.5 of the Draft EA.

The Draft EA and the Proposed FONSI are available at https://www.seymourjohnson.af.mil/Home/SJAFB-Environmental-Management/. Moreover, I seek your concurrence that formal consultation under Section 7 under the Endangered Species Act is not necessary due to the lack of potential to impact federally listed species from implementation of the Proposed Action.

If, after review of the Draft EA and Proposed FONSI, you have additional information regarding the potential impacts of the Proposed Action on the environment of which we are unaware, we would appreciate receiving such information for inclusion and consideration during the NEPA process. We request your concurrence on the above referenced biological conclusions and, if applicable, comments on the Draft EA and Proposed FONSI within 30 days of receipt of this memorandum to Cathryn Pesenti at 4 CES/CEIEA, 1095 Peterson Avenue, Seymour Johnson AFB, North Carolina 27531, by electronic mail to cathryn.pesenti@us.af.mil, or by phone at (919) 722-7455.

The Air Force is aware of the potential impact of the ongoing coronavirus (COVID-19) pandemic on the usual methods of access to information and ability to communicate, such as the mass closure of local public libraries and challenges with the sufficiency of an increasingly overburdened internet. The Air Force seeks to implement appropriate additional measures to ensure that all interested stakeholders have the opportunity to participate fully in this EA process. Accordingly, please do not hesitate to contact us directly at the email address or telephone number provided above; we are available to discuss and help resolve issues involving access to the Draft EA and Proposed FONSI or the ability to comment. Thank you in advance for your consideration.

GOODSON.DENNIS.G.1229806528 Digitally signed by GOODSON.DENNIS.G.1229806528 Date: 2020.04.27 14:46:46 -04'00'

DENNIS G. GOODSON, P.E.

Enclosure: Federally Listed Species and Effect Determination Summary

Enclosure. Federally Listed Species and Effect Determination Summary

A list of federal and state listed species that could potentially occur in the Kinston Regional Jetport (ISO) region of influence (ROI), as well as in the overland special use airspace ROIs was obtained from the United States Fish and Wildlife (USFWS) Information for Planning and Consultation website (USFWS, 2020) and the North Carolina Natural Heritage Program (NCNHP, 2019). Since surveys for threatened and endangered species on ISO was limited, the species identified were based on their occurrence within the county or have been documented near the airport but do not necessarily indicate their presence on airport property. Thirty-one species were identified and include one amphibian, seven birds, one fish, three mammals, four mollusks, nine plants, and six reptiles. **Table 1** includes the list of federally listed species that were identified with the potential to be within the airport and airspace ROIs. A description of the existing conditions, to include habitat descriptions for the ISO and special use airspace ROIs are found in Section 3.6 of the Draft EA. There is designated critical habitat for the piping plover (*Charadrius melodus*) and the loggerhead sea turtle (*Caretta caretta*) within the Burner Air Traffic Control Assigned Airspace (ATCAA)/Hatteras ATCAA/Pamlico Military Operations Area (MOA), the Restricted Area R-5306A and Core MOA, and the R-5314/Phelps MOA (**Figure 1**).

Effect Determination for Airport Region of Influence

Under the Proposed Action, there are no ground-disturbing activities proposed at ISO, and all potential impacts on the federally listed species would be associated with aircraft operations within the ROIs. As such, we have made a no effect determination for listed plant species, amphibians, reptiles, mollusks, and fish identified with the potential to be within the airport ROI.

The species with the potential to be impacted by noise and visual disturbance associated with increased air operations at ISO would be to the red-cockaded woodpecker (RCW; *Melanerpes erythrocephalus*). Below, we provide a brief description of the potential impacts and our effects determination; additional description is in Section 4.5 of the Draft EA.

Aircraft operations may impact the RCW, which could include aircraft strikes during takeoff and landing and disturbance due to increased noise and aircraft activities; however, at ISO, RCW habitat near the airport is considered marginal, and there are no records of RCW sightings. While there is a small potential for RCW to use the forests surrounding the airport as dispersal habitat and encounter aircraft during training missions, this potential is low. Aircraft operations always have the potential for bird strikes that can occur during takeoff and landing on and near active runways, as well as during flight at altitude. With an increase in air operations associated with contract ADAIR aircraft, there is an increased risk of aircraft strikes; however, contract ADAIR would maintain a Bird/Wildlife Aircraft Strike Hazard (BASH) prevention program specifically to manage BASH risk and implement measures to greatly reduce the likelihood for BASH incidents. The continued airfield management and risk reduction implementation measures associated with the BASH program would reduce the potential for contract ADAIR aircraft strikes. As such, we have made a no effect determination for the RCW at ISO.

Effect Determination for Special Use Airspace Region of Influence

Special use airspace includes MOAs, ATCAAs, and Warning Areas which provide airspace for military aircraft training and serve to warn nonparticipating pilots of potential danger. The primary operational airspace that would be used by contract ADAIR aircraft would be the offshore Warning Area W-122 located about 60 miles southeast of Seymour Johnson AFB over the Atlantic Ocean, as well as Warning Areas W-161/177/72 (**Figure 1**). The overland special use airspace available for use by ADAIR missions include Seymour Johnson Echo, Gamecock A, Farmville, Phelps, Pamlico, and Core MOAs; Burner and Hatteras ATCAAs; Restricted Areas R-5306A and R-5314.

There would be no ground-disturbing activities within the overland special use airspace ROIs, and all potential impacts on threatened and endangered species would be associated with aircraft operations. Because there would be no ground-disturbing activities and chaff and flare would only be used in the Warning Areas, there would be no impacts on federally listed plant species, amphibians, fish, invertebrates, reptiles, or their habitats within the overland special use airspace. As such, we have made a no effect determination for these species in the overland special use airspace ROIs. In addition, while designated critical habitat for piping plover and loggerhead turtles is located beneath several of the

overland special use airspace (**Figure 1**), there would be no ground-disturbing activities; therefore, we have made a no effect determination for designated critical habitat.

The potential impacts on listed birds associated with aircraft operations include aircraft movement, noise, aircraft strikes, and the use of countermeasure chaff and flare. These impacts are summarized below, and greater detail is provided in Section 4.5 of the Draft EA. Bird species within the overland special use airspace would primarily be foraging or nesting. Given the large area and high altitude where the majority of contract ADAIR training would occur, and that most ADAIR training would occur during daytime hours, the likelihood for birds to encounter aircraft during training operations is low. Military air operations training already occurs within the overland special use airspace, and contract ADAIR would only increase the total number of sorties in the proposed North Carolina overland airspace by 516 sorties annually; therefore, these species would likely not be startled by a slight increase in the number of sorties. In addition, aircraft noise in the overland special use airspace would not exceed 45 decibels (dB) as a result of the Proposed Action and as such would have no impact on bird species. Moreover, chaff and flare would not be used in the overland special use airspace, nor would there be supersonic operations in these areas. We have made a no effect determination for the RCW, eastern black rail (*Laterallus jamaicensis* ssp. *jamaicensis*), piping plover, red knot (*Calidris canutus rufa*), and wood stork (*Mycteria americana*).

Within the Warning Areas, the Bermuda petrel (*Pterodroma cahow*) and roseate tern could potentially encounter chaff and flare components on the ocean surface while foraging. Some species of seabirds are known to ingest plastic when it is mistaken for prey (Auman et al., 1997; Yamashita et al., 2011; Provencher et al., 2014) that may be harmful. Unless consumed plastic pieces were regurgitated, the chaff and flare compression pads or pistons could cause digestive tract blockages, eventual starvation, and potentially death. Most chaff and flare plastic components are expected to fall through the water column to the sea floor and would not remain on the ocean surface where a foraging bird would encounter and consume the plastic pieces. In addition, the chaff and flare would also be used over a large area (50,140 square miles), and therefore, it is highly unlikely that foraging birds would encounter chaff and flare components floating on the ocean surface, so the potential for ingestion of plastic chaff and flare components as a result of the increased use of chaff and flares is negligible. We determined the Proposed Action may affect, not likely to adversely affect the Bermuda petrel and roseate tern.

The listed mammals with the potential to occur in the overland special use airspace would potentially only be affected by aircraft overflights if the training activities elicited negative behavioral responses. It is highly unlikely that either aircraft movement or noise, especially at higher altitudes, would elicit a response from mammals. As previously discussed, military air operations currently occur in all the proposed overland special use airspace, and the additional number of operations is small. Furthermore, since noise from contract ADAIR aircraft would not exceed 45 dB, there would be no impact on the listed mammal species from aircraft operations. While chaff and flare would be used in the Warning Areas and the expended plastic components are expected to fall through the water column, the West Indian manatee (*Trichechus manatus*) could encounter components while grazing on the sea floor. In the unlikely event the manatee encountered and ingested these components, due to the small size of end caps and pistons (i.e., 1.3-inch [in.] diameter and 0.13 in. thick), they would likely pass through the digestive tract of marine mammals (US Navy, 2009). We have made a no effect determination for northern long-eared bat (*Myotis septentrionalis*) and red wolf (*Canis rufus*) and a may affect, not likely to adversely affect determination for the West Indian manatee.

As discussed above, noise from contract ADAIR aircraft would not increase substantially, and as there would be a minimal increase in the number of aircraft operations within the special use airspace, the Proposed Action would not impact nesting sea turtles. We have made a no effect determination for sea turtles from the Proposed Action within the overland special use airspace. Sea turtles in the Warning Areas could ingest chaff and flare components which may have negative impacts, the potential impacts and the effect determination for sea turtles within Warning Areas will be coordinated with the appropriate National Marine Fisheries Service regional office in a separate correspondence.

Table 2 provides the effects determination for all listed species with the potential to occur within the airport and overland special use airspace ROIs.

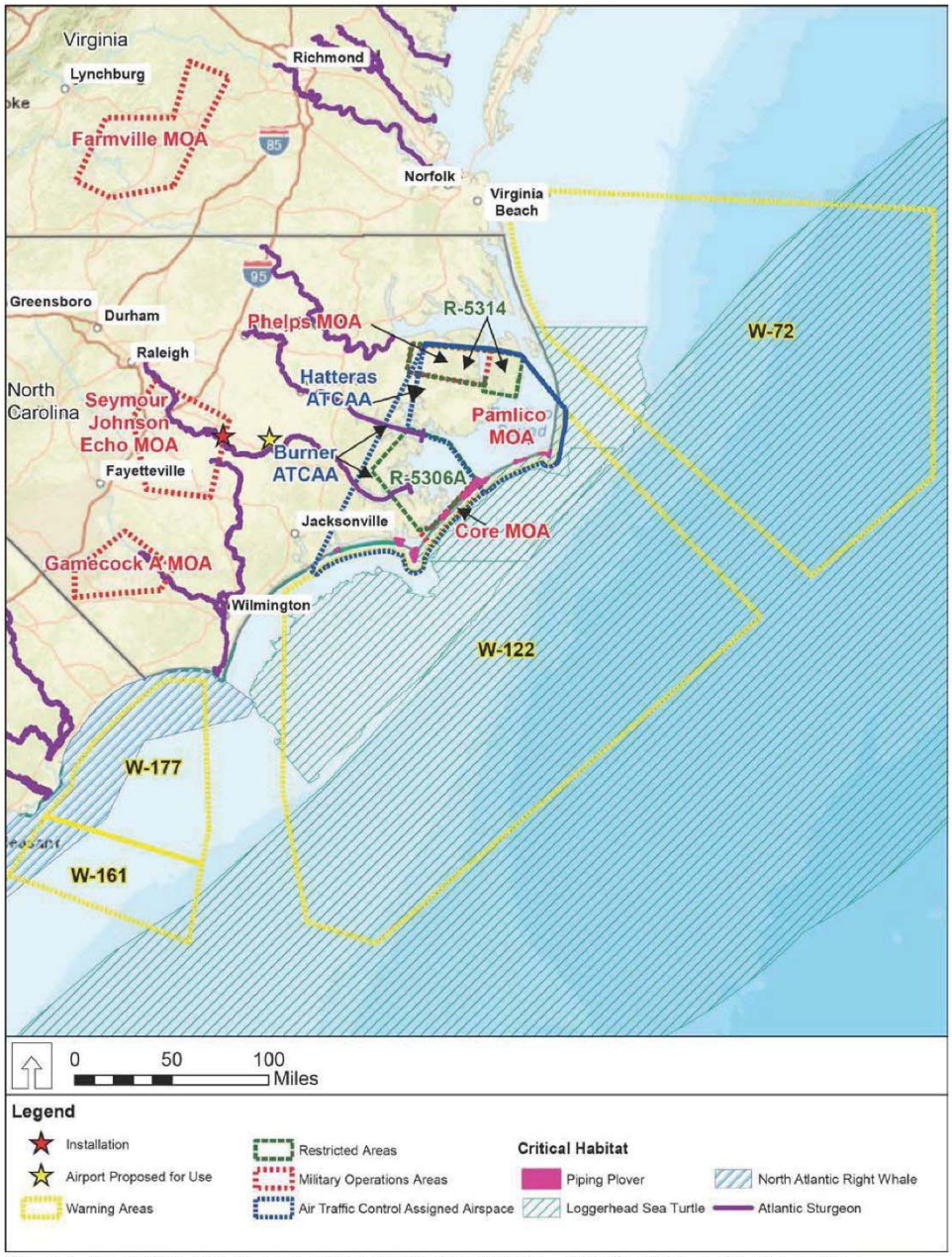


Figure 1. Special Use Airspace and Designated Critical Habitat within the Regions of Influence from Proposed Contract Adversary Air Operations to Support Seymour Johnson Air Force Base.

Table 1. Federally Listed Species with the Potential to be Located within the Regions of Influence from Proposed Contract Adversary Air Operations to Support Seymour Johnson Air Force Base

Species	Scientific Name	Federal Status	ISO	Burner ATCAA/ Hatteras ATCAA/Pamlico MOA	R-5306A/ Core MOA	R-5314/ Phelps MOA	Seymour Johnson Echo MOA	Gamecock A MOA	Warning Area W-72	Warning Area W-122	Warning Area W-177	Warning Area W-161
Amphibians												
Neuse River Waterdog	*Necturus lewisi*	P-T	X				X[2]					
Birds												
Bermuda petrel	*Pterodroma cahow*	E							X	X		
Eastern Black Rail	*Laterallus jamaicensis* ssp. *Jamaicensis*	P-T		X	X	X			X	X	X	X
Piping Plover	*Charadrius melodus*	T		X[2]	X[2]	X[2]			X	X	X	X
Red Knot	*Calidris canutus rufa*	T		X	X	X			X	X	X	X
Red-cockaded Woodpecker	*Picoides borealis*	E	X	X	X	X	X	X				
Roseate Tern	*Sterna dougallii dougallii*	E		X[1]	X[1]	X[1]			X	X	X	X
Wood Stork	*Mycteria americana*	T					X	X				
Fish												
Carolina madtom	*Noturus furiosus*	P-E	X	X			X					
Mammals												
Northern Long - eared bat	*Myotis septentrionalis*	T		X	X	X		X				
Red wolf	*Canis rufus*	EX		X	X	X						
West Indian Manatee	*Trichechus manatus*	T		X	X	X						
Mollusk												
Atlantic Pigtoe	*Fusconaia masoni*	P-T					X	X				
Dwarf wedgemussel	*Alasmidonta heterodon*	E					X					
Tar River Spinymussel	*Parvaspina steinstansana*	E					X					
Yellow Lance	*Elliptio lanceolata*	T					X					
Plants												
American Chaffseed	*Schwalbea americana*	E						X				
Canby's Dropwort	*Oxypolis canbyi*	E						X				
Cooley's Meadowrue	*Thalictrum cooleyi*	E			X			X				
Golden sedge	*Carex lutea*	E			X							

4

Species	Scientific Name	Federal Status	ISO	Burner ATCAA/ Hatteras ATCAA/Pamlico MOA	R-5306A/ Core MOA	R-5314/ Phelps MOA	Seymour Johnson Echo MOA	Gamecock A MOA	Warning Area W-72	Warning Area W-122	Warning Area W-177	Warning Area W-161
Plants												
Michaux's sumac	*Rhus michauxii*	E					X	X				
Pondberry	*Lindera melissifolia*	E			X		X	X				
Rough-leaved Loosestrife	*Lysimachia asperulifolia*	E		X	X		X	X				
Seabeach Amaranth	*Amaranthus pumilus*	T		X	X	X						
Sensitive Joint-vetch	*Aeschynomene virginica*	T	X	X	X	X						
Reptiles												
American alligator	*Alligator mississipiensis*	T-(SA)	X	X	X	X	X					
Green Sea Turtle	*Chelonia mydas*	T		X	X	X						
Hawksbill Sea Turtle	*Eretmochelys imbricata imbricata*	E		X	X	X						
Kemp's Ridley Sea Turtle	*Lepidochelys kempii*	E		X	X	X						
Leatherback Sea Turtle	*Dermochelys coriacea*	E		X	X	X						
Loggerhead Sea Turtle	*Caretta caretta*	T		X[2]	X	X						

Notes:
[1] All recorded occurrences in the county are either extirpated, have not been found in recent surveys, or have not been surveyed recently enough to be confident they are still present.
[2] Designated critical habitat for the listed species is also located within the special use airspace.

ATCAA – Air Traffic Control Assigned Airspaces; E – Endangered; EX – Experimental Population; ISO – Kinston Regional Jetport; MOA – Military Operations Area; P = Proposed; R = Restricted Area; SA=Similar Appearance; T = Threatened; W = Warning Area

Table 2. Effects Determination for Federally Listed Species with the Potential to be Located within the Regions of Influence from Proposed Contract Adversary Air Operations to Support Seymour Johnson Air Force Base

Species	Scientific Name	Federal Status	Effects Determination
Neuse River waterdog	*Necturus lewisi*	P-T	NE
Bermuda petrel	*Pterodroma cahow*	E	NLAA
Eastern black rail	*Laterallus jamaicensis* ssp. *Jamaicensis*	P-T	NE
Piping plover	*Charadrius melodus*	T	NE
Red knot	*Calidris canutus rufa*	T	NE
Red-cockaded woodpecker	*Picoides borealis*	E	NE
Roseate tern	*Sterna dougallii dougallii*	E	NLAA
Wood stork	*Mycteria americana*	T	NE
Carolina madtom	*Noturus furiosus*	P-E	NE
Northern long -eared bat	*Myotis septentrionalis*	T	NE
Red wolf	*Canis rufus*	EX	NE
West Indian mantee	*Trichechus manatus*	T	NLAA
Atlantic pigtoe	*Fusconaia masoni*	P-T	NE
Dwarf wedgemussel	*Alasmidonta heterodon*	E	NE
Tar river spinymussel	*Parvaspina steinstansana*	E	NE
Yellow lance	*Elliptio lanceolata*	T	NE
American chaffseed	*Schwalbea americana*	E	NE
Canby's dropwort	*Oxypolis canbyi*	E	NE
Cooley's meadowrue	*Thalictrum cooleyi*	E	NE
Golden sedge	*Carex lutea*	E	NE
Michaux's sumac	*Rhus michauxii*	E	NE
Pondberry	*Lindera melissifolia*	E	NE
Rough-leaved loosestrife	*Lysimachia asperulifolia*	E	NE
Seabeach amaranth	*Amaranthus pumilus*	T	NE
Sensitive joint-vetch	*Aeschynomene virginica*	T	NE
American alligator	*Alligator mississipiensis*	T-(SA)	NE
Green sea turtle	*Chelonia mydas*	T	NE
Hawksbill sea turtle	*Eretmochelys imbricata imbricata*	E	NE
Kemp's ridley sea turtle	*Lepidochelys kempii*	E	NE
Leatherback sea turtle	*Dermochelys coriacea*	E	NE
Loggerhead sea turtle	*Caretta caretta*	T	NE

E = Endangered; EX = Experimental Population; P = Proposed; R = Restricted Area; SA=Similar Appearance; T = Threatened; W = Warning Area

References

Auman, H. J., J. P. Ludwig, J. P. Giesy, and T. Colborn. 1997. *Plastic Ingestion by Laysan Albatross Chicks on Sand Island, Midway Atoll, in 1994 and 1995*. In G. Robinson and R. Gales (Eds.), Albatross Biology and Conservation, pp. 239–244. Surrey Beatty and Sons, Chipping Norton.

NCNHP. 2019. *Natural Heritage Data Explorer*. <https://ncnhde.natureserve.org/>. Accessed December 2019.

Provencher, J., A. Bond, A. Hedd, W. Montevecchi, S. Muzaffar, S. Courchesne, H. Gilchrist, S. Jamieson, F. Merkel, K. Falk, J. Durinck, and M. Mallory. 2014. *Prevalence of Marine Debris in Marine Birds from the North Atlantic*. Marine Pollution Bulletin 84:411–417.

USFWS. 2020. *Information and Planning and Information Planning and Consultation*. <https://ecos.fws.gov/ipac>. Accessed January 2020.

US Navy. 2009. *Virginia Capes Range Complex Final Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS)*. Prepared by the US Fleet Forces. March.

Yamashita, R., H. Takada, M. A. Fukuwaka, and Y. Watanuki. 2011. *Physical and Chemical Effects of Ingested Plastic Debris on Short-Tailed Shearwaters, Puffinus tenuirostris, in the North Pacific Ocean*. Marine Pollution Bulletin 62(12):2845–2849.

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

27 April 2020

Mr. Dennis G. Goodson, P.E.
Deputy Base Engineer
4th Civil Engineer Squadron
1095 Peterson Avenue
Seymour Johnson Air Force Base, NC 27531-2355

Ms. Sarah Nystrom
US Fish and Wildlife Service
Virginia Field Office
6669 Short Lane
Gloucester, VA 23061

Dear Ms. Nystrom:

The United States Air Force (Air Force) has prepared a Draft Environmental Assessment (EA) and Proposed Finding of No Significant Impact (FONSI) evaluating the potential environmental impacts associated with the proposed Combat Air Forces contract adversary air (ADAIR) support for Seymour Johnson Air Force Base (AFB), North Carolina. The Draft EA was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations implementing NEPA, and the Air Force NEPA regulations. In addition, we have provided the Air Force's effect determinations for the federally listed species and designated critical habitat for review and concurrence by the United States Fish and Wildlife Service (USFWS).

The Proposed Action is to contract the support of approximately 2,590 ADAIR sorties annually using 14 contractor-owned and contractor-operated aircraft. Contract ADAIR would support training for the 4th Fighter Wing (4 FW) at Seymour Johnson AFB in Goldsboro, North Carolina by operating out of one of Kinston Regional Jetport (ISO. Aircraft would depart from the airport runway, transit from the airport to military special use airspace, perform ADAIR training, transit back, and land at the selected airport. Training activities would use existing special use airspace near Seymour Johnson AFB (see Figure 1 in the Enclosure). Operations and maintenance facilities would be contracted by the service provider at ISO to support the ADAIR mission. There are no construction activities associated with the Proposed Action.

Special use airspace includes Military Operations Areas (MOAs), Air Traffic Control Assigned Airspaces (ATCAAs), and Warning Areas which provide airspace for military aircraft training and serve to warn nonparticipating pilots of potential danger. The primary operational airspace that would be used by contract ADAIR aircraft would be offshore Warning Area W-122 located about 60 miles southeast of Seymour Johnson AFB over the Atlantic Ocean, as well as Warning Areas W-161/177/72 (Enclosure). The overland special use airspace available for use by ADAIR missions include Seymour Johnson Echo, Gamecock A, Farmville, Phelps, Pamlico, and Core MOAs; Burner and Hatteras ATCAAs; and Restricted Areas R-5306A and R-5314.

As summarized in the Enclosure, for the Proposed Action in the Farmville MOA region of influence (ROI), we have made no effect determinations for fish, mammals, mollusks, and plants with the potential to occur within the ROI. Within the Warning Area W-72 ROI, we have made a no effect determination for listed birds, with the exception of the Bermuda petrel (*Pterodroma cahow*) and roseate tern (*Sterna dougallii dougallii*) for which we have made a may affect, not likely to adversely affect determination. While there may be impacts to sea turtles and the Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) in the Warning Area, the impacts and the effect determination will be coordinated with the appropriate National Marine Fisheries Service, Office of Protected Species in a separate correspondence. No critical habitat was identified within or near ROIs in Virginia. The Enclosure provides a summary of the effects determinations for the federally listed species and critical habitat. Additional detail can be found in Sections 3.6 and 4.5 of the Draft EA.

The Draft EA and the Proposed FONSI are available at https://www.seymourjohnson.af.mil/Home/SJAFB-Environmental-Management/. Moreover, I seek your concurrence that formal consultation under Section 7 under the Endangered Species Act is not necessary due to lack of potential to impact federally listed species from implementation of the Proposed Action.

If, after review of the Draft EA and Proposed FONSI, you have additional information regarding the potential impacts of the Proposed Action on the environment of which we are unaware, we would appreciate receiving such information for inclusion and consideration during the NEPA process. We request your concurrence on the above referenced biological conclusions and, if applicable, comments on the Draft EA and Proposed FONSI within 30 days of receipt of this memorandum to Cathryn Pesenti at 4 CES/CEIEA, 1095 Peterson Avenue, Seymour Johnson AFB, North Carolina 27531, by electronic mail to cathryn.pesenti@us.af.mil, or by phone at (919) 722-7455.

The Air Force is aware of the potential impact of the ongoing coronavirus (COVID-19) pandemic on the usual methods of access to information and ability to communicate, such as the mass closure of local public libraries and challenges with the sufficiency of an increasingly overburdened internet. The Air Force seeks to implement appropriate additional measures to ensure that all interested stakeholders have the opportunity to participate fully in this EA process. Accordingly, please do not hesitate to contact us directly at the email address or telephone number provided above; we are available to discuss and help resolve issues involving access to the Draft EA and Proposed FONSI or the ability to comment. Thank you in advance for your consideration.

GOODSON.DENNIS.G.1229806528 Digitally signed by GOODSON.DENNIS.G.1229806528 Date: 2020.04.27 14:47:27 -04'00'

DENNIS G. GOODSON, P.E.

Enclosure: Federally Listed Species and Effect Determination Summary

Enclosure. Federally Listed Species and Effect Determination Summary

A list of federal listed species that could potentially occur in the Farmville Military Operations Area (MOA) ROI, was obtained from the United States Fish and Wildlife (USFWS) Information for Planning and Consultation website (USFWS, 2020) and the Virginia Department of Game and Inland Fisheries (VDGIF, 2018). **Figure 1** shows the locations of the special use airspace. Within the Farmville MOA ROI, six species were identified and include one fish, two mammals, two mollusks, and one plant. Also included in the analysis are five listed birds that may forage in or migrate through Warning Area W-72. **Table 1** includes the list of federally listed species that were identified with the potential to be within the ROIs. A description of the existing conditions, to include habitat descriptions special use airspace ROIs, are found in Section 3.6 of the Draft EA.

Effect Determination

There would be no ground-disturbing activities within the special use airspace ROI, and all potential impacts on threatened and endangered species would be associated with aircraft operations. Because there would be no ground-disturbing activities and chaff and flare would only be used in the offshore Warning Areas, there would be no impacts on federally listed fish, mollusks, or plant species or their habitat within the Farmville MOA. As such, we have made a no effect determination for these species as a result of aircraft operations in the overland special use airspace ROI.

The species with the potential to be impacted by noise and visual disturbance associated with increased air operations within the Farmville MOA would be the northern long-eared bat (*Myotis septentrionalis*) and gray bat (*Myotis grisescens*). Below we provide a brief description of the potential impacts and our effect determinations; additional descriptions are in Section 4.5 of the Draft EA.

Under the Proposed Action, no tree clearing would occur. While the increased number of sorties under the Proposed Action may increase the potential for impact of the northern long-eared bat, any take that may occur as a result of the Proposed Action is not prohibited under the Section 4(d) rule of the ESA adopted for this species as specified in 50 CFR §17.40(o)[1]. The listed bats with the potential to occur in the overland special use airspace would potentially only be affected by aircraft overflights if the training activities elicited negative behavioral responses. It is highly unlikely that either aircraft movement or noise, especially at higher altitudes, would elicit a response from bats. As previously discussed, military air operations currently occur in the Farmville MOA, and the additional number of operations is estimated to be small, about 197 annually. Noise from contract ADAIR aircraft would not exceed 45 decibels (dB) and would therefore have no impact on the listed bat species. Aircraft movement would likely not be visible to bats unless an individual was at the exact location at the moment in which an aircraft traveling at high speed at a relatively low altitude passed directly overhead. These occurrences with contract ADAIR aircraft would be so rare as to be negligible and may not even generate a startle response if an interaction occurred. We have made a no effect determination for northern long-eared bat and gray bat.

The potential impacts on listed birds associated with aircraft operations would occur in the Warning Areas and include aircraft movement, noise, aircraft strikes, and the use of countermeasure chaff and flare. These impacts are summarized below, and greater detail is provided in Section 4.5 of the Draft EA. Bird species within Warning Areas would primarily be foraging or migrating. Given the large area and high altitude where the majority of contract ADAIR training would occur, and that most ADAIR training would occur during daytime hours, the likelihood for birds to encounter aircraft during training operations is low. Warning Area W-72 is already heavily used by the Air Force, Navy, and Marine Corps for air operations training, and contract ADAIR would only increase the total number of sorties by 20 sorties annually; therefore, these species would likely not be impacted by a slight increase in the number of sorties. In addition, aircraft noise in the overland special use airspace would not exceed 45 dB as a result of the Proposed Action and as such would have no impact on migrating bird species. We have made a no effect determination for eastern black rail (*Laterallus jamaicensis* ssp. *jamaicensis*), piping plover (*Charadrius melodus*), and red knot (*Calidris canutus rufa*).

Within the Warning Areas, the Bermuda petrel (*Pterodroma cahow*) and roseate tern (*Sterna dougallii dougallii*) could potentially encounter chaff and flare components on the ocean surface while foraging. Some species of seabirds

[1] United States Fish and Wildlife Service, Virginia Ecological Services Field Office, Gloucester, Virginia, Consultation Code: 05E2VA00-2020-TA-1933, Event Code: 05E2VA00-2020-E-05274, Verification Letter to Brett Feulner, Senior Environmental Scientist, Dewberry Engineers, Inc., Raleigh, North Carolina, 7 February 2020.

are known to ingest plastic when it is mistaken for prey (Auman et al., 1997; Yamashita et al., 2011; Provencher et al., 2014) that may be harmful. Unless consumed plastic pieces were regurgitated, the chaff and flare compression pads or pistons could cause digestive tract blockages, eventual starvation, and potentially death. Most chaff and flare plastic components are expected to fall through the water column to the sea floor and would not remain on the ocean surface where a foraging bird would encounter and consume the plastic pieces. In addition, the chaff and flare would also be used over a large area (50,140 square miles), and therefore, it is highly unlikely that foraging birds would encounter chaff and flare components floating on the ocean surface, so the potential for ingestion of plastic chaff and flare components as a result of the increased use of chaff and flares is negligible. We have made a may affect, not likely to adversely affect determination for the Bermuda petrel and roseate tern.

In Warning Area W-72, sea turtles and sturgeon could ingest chaff and flare components that may have negative impacts. The potential impacts and the effect determination for sea turtles and sturgeon within the Warning Areas will be coordinated with the appropriate National Marine Fisheries Service regional office in a separate correspondence.

Table 1. Federally Listed Species with the Potential to be Located within the Regions of Influence from Proposed Contract Adversary Air Operations to Support Seymour Johnson Air Force Base

Species	Scientific Name	Federal Status	Farmville MOA	Warning Area W-72	Effects Determination
Birds					
Bermuda petrel	*Pterodroma cahow*	E		X	NLAA
Eastern Black Rail	*Laterallus jamaicensis* ssp. *Jamaicensis*	P-T		X	NE
Piping Plover	*Charadrius melodus*	T		X	NE
Red Knot	*Calidris canutus rufa*	T		X	NE
Roseate Tern	*Sterna dougallii dougallii*	E		X	NLAA
Fish					
Roanoke Log Perch	*Percina rex*	E	X		NE
Mammals					
Gray Bat	*Myotis grisescens*	E	X		NE
Northern Long-eared Bat	*Myotis septentrionalis*	T	X		NE
Mollusks					
Atlantic Pigtoe	*Fusconaia masoni*	P-T	X		NE
Yellow Lance	*Elliptio lanceolata*	T	X		NE
Plants					
Harperella	*Ptilimnium nodosum*	E	X		NE

E = Endangered; MOA = Military Operations Area; P = Proposed; T = Threatened

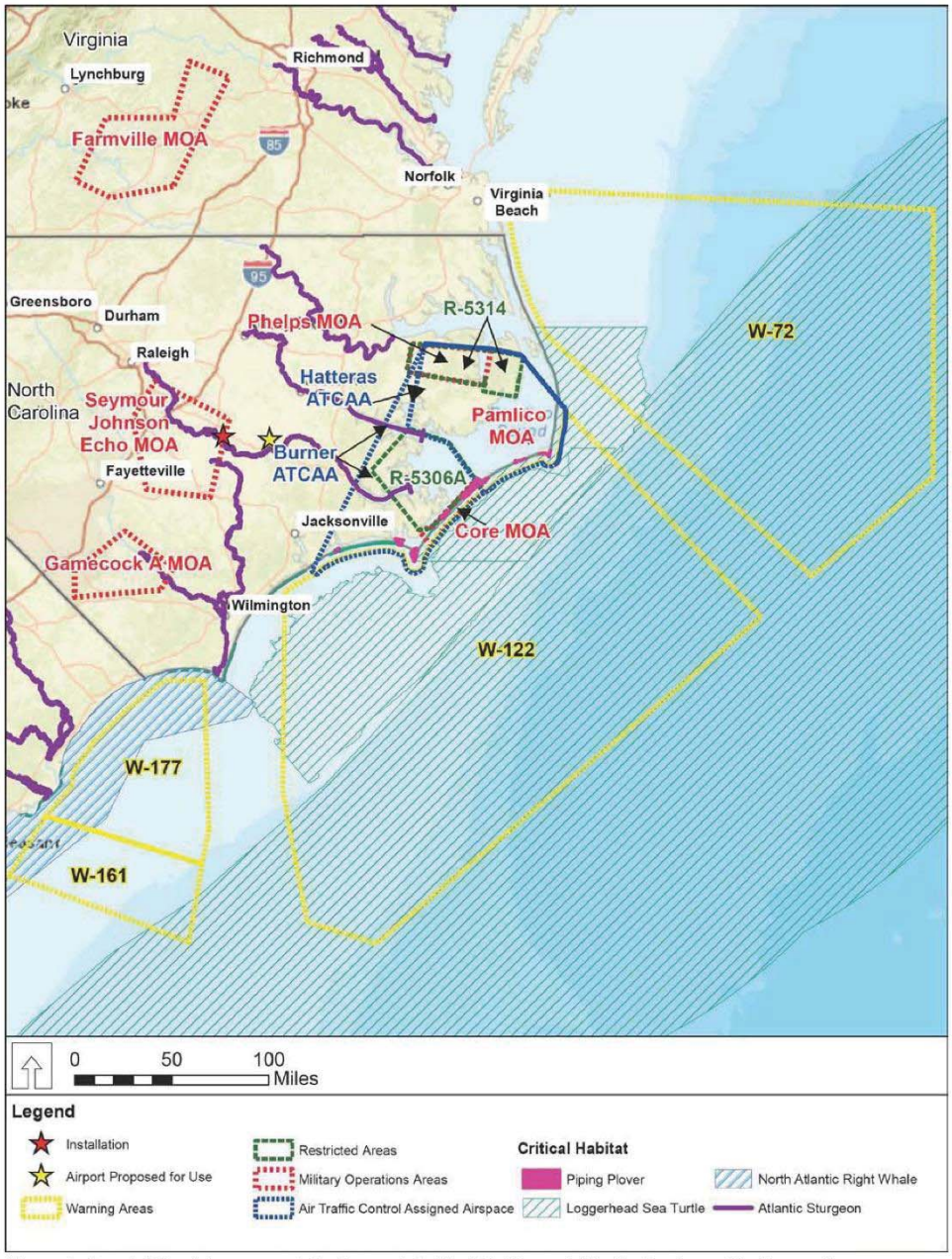


Figure 1. Special Use Airspace and Designated Critical Habitat within the Regions of Influence from Proposed Contract Adversary Air Operations to Support Seymour Johnson Air Force Base.

References

Auman, H. J., J. P. Ludwig, J. P. Giesy, and T. Colborn. 1997. *Plastic Ingestion by Laysan Albatross Chicks on Sand Island, Midway Atoll, in 1994 and 1995*. In G. Robinson and R. Gales (Eds.), Albatross Biology and Conservation, pp. 239–244. Surrey Beatty and Sons, Chipping Norton.

Provencher, J., A. Bond, A. Hedd, W. Montevecchi, S. Muzaffar, S. Courchesne, H. Gilchrist, S. Jamieson, F. Merkel, K. Falk, J. Durinck, and M. Mallory. 2014. *Prevalence of Marine Debris in Marine Birds from the North Atlantic*. Marine Pollution Bulletin 84:411–417.

USFWS. 2020. *Information and Planning and Information Planning and Consultation*. <https://ecos.fws.gov/ipac>. Accessed January 2020.

VDGIF. 2018. *Threatened, Endangered, and Special Concern Species*. <https://www.dgif.virginia.gov/wildlife/>. Accessed December 2019.

Yamashita, R., H. Takada, M. A. Fukuwaka, and Y. Watanuki. 2011. *Physical and Chemical Effects of Ingested Plastic Debris on Short-Tailed Shearwaters, Puffinus tenuirostris, in the North Pacific Ocean*. Marine Pollution Bulletin 62(12):2845–2849.

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

27 April 2020

Mr. Dennis G. Goodson, P.E.
Deputy Base Engineer
4th Civil Engineer Squadron
1095 Peterson Avenue
Seymour Johnson Air Force Base, NC 27531-2355

Ms. Cathy Tortorici
Office of Protected Resources
1315 East-West Highway
13th Floor
Silver Spring, MD, 20910

Dear Ms. Tortorici:

The United States Air Force (Air Force) has prepared a Draft Environmental Assessment (EA) and Proposed Finding of No Significant Impact (FONSI) evaluating the potential environmental impacts associated with the proposed Combat Air Forces contract adversary air (ADAIR) support for Seymour Johnson Air Force Base (AFB), North Carolina. The Draft EA was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations implementing NEPA, and the Air Force NEPA regulations. In addition, we have provided the Air Force's effects determinations for the federally listed species and designated critical habitat for review and concurrence by the National Marine Fisheries Service (NMFS), Office of Protected Resources Endangered Species Act (ESA) Interagency Cooperation Division. Because the Proposed Action would span both the Southeast Region and Greater Atlantic Region, we are requesting coordination from the Office of Protected Resources ESA Interagency Cooperation Division.

The Proposed Action is to contract the support of approximately 2,590 ADAIR sorties annually using 14 contractor-owned and contractor-operated aircraft. Contract ADAIR would support training for the 4th Fighter Wing at Seymour Johnson AFB in Goldsboro, North Carolina, by operating out of Kinston Regional Jetport (ISO), Kinston, North Carolina. Aircraft would depart from the airport runway, transit from the airport to military special use airspace, perform ADAIR training, transit back, and land at the selected airport. Training activities would use existing special use airspace near Seymour Johnson AFB. Operations and maintenance facilities would be contracted by the service provider at ISO to support the ADAIR mission. There are no construction activities associated with the Proposed Action.

Special use airspace includes Military Operations Areas (MOAs), Air Traffic Control Assigned Airspaces (ATCAAs), and Warning Areas which provide airspace for military aircraft training and serve to warn nonparticipating pilots of potential danger. The primary operational airspace that would be used by contract ADAIR aircraft would be the offshore Warning Area W-122 located about 60 miles southeast of Seymour Johnson AFB over the Atlantic Ocean, as well as Warning Areas W-161/177/72. The attachment contains a map of the special use airspace. The overland special use airspace available for use by ADAIR missions include the Burner ATCAA/Hatteras ATCAA/Pamlico MOA; R-5306A/Core MOA; and R-5314/Phelps MOA. Federal listed species under the jurisdiction of NMFS Southeast Region could potentially occur in Warning Areas W-122/161/177/72 and the nearshore areas of the Burner ATCAA/Hatteras ATCAA/Pamlico MOA; R-5306A/Core MOA; and R-5314/Phelps MOA. The federal listed species under jurisdiction of the NMFS Greater Atlantic Region could occur within Warning Area W-72.

As summarized in the attachment, for the Proposed Action, we have made a may affect, not likely to affect determination for listed marine mammals, sea turtles, and fish, with the exception of the short nose sturgeon (*Acipenser brevirostrum*). We have made a no effect determination for the short nose sturgeon. Moreover, we have determined

there would be no impact to designated critical habitat for Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*), loggerhead sea turtle (*Caretta caretta*), or North Atlantic right whale (*Eubalaena glacialis*). The attachment provides a summary of the effects determinations for the federally listed species and critical habitat. Additional detail can be found in Sections 3.6 and 4.5 of the Draft EA. In addition, the potential impacts and the effect determination for nesting sea turtles will be coordinated with the appropriate US Fish and Wildlife Service field office in a separate correspondence.

The Draft EA and the Proposed FONSI are available at https://www.seymourjohnson.af.mil/Home/SJAFB-Environmental-Management/. Moreover, I seek your concurrence that formal consultation under Section 7 under the Endangered Species Act is not necessary due to lack of potential to impact federally listed species from implementation of the Proposed Action.

If, after review of the Draft EA and Proposed FONSI, you have additional information regarding impacts of the Proposed Action on the environment of which we are unaware, we would appreciate receiving such information for inclusion and consideration during the NEPA process. We request your concurrence on the above referenced biological conclusions and, if applicable, comments on the Draft EA and Proposed FONSI within 30 days of receipt of this memorandum to Cathryn Pesenti at 4 CES/CEIEA, 1095 Peterson Avenue, Seymour Johnson AFB, North Carolina 27531, by electronic mail to cathryn.pesenti@us.af.mil, or by phone at (919) 722-7455.

The Air Force is aware of the potential impact of the ongoing coronavirus (COVID-19) pandemic on the usual methods of access to information and ability to communicate, such as the mass closure of local public libraries and challenges with the sufficiency of an increasingly overburdened internet. The Air Force seeks to implement appropriate additional measures to ensure that all interested stakeholders have the opportunity to participate fully in this EA process. Accordingly, please do not hesitate to contact us directly at the email address or telephone number provided above; we are available to discuss and help resolve issues involving access to the Draft EA and Proposed FONSI or the ability to comment. Thank you in advance for your consideration.

GOODSON.DENNIS.G.1229806528 Digitally signed by GOODSON.DENNIS.G.1229806528 Date: 2020.04.27 14:45:53 -04'00'

DENNIS G. GOODSON, P.E.

Attachment:
Federally Listed Species and Effects Determination Summary

cc:
NOAA Fisheries (NMFS), Greater Atlantic Regional Fisheries Office
NOAA Fisheries (NMFS), Southeast Regional Fisheries Office

Attachment. Federally Listed Species and Effects Determination Summary

Special use airspace includes Military Operations Areas (MOAs), Air Traffic Control Assigned Airspaces (ATCAAs), and Warning Areas which provide airspace for military aircraft training and serve to warn nonparticipating pilots of potential danger. The primary operational airspace that would be used by contract adversary air (ADAIR) aircraft would be the offshore Warning Area W-122 located about 60 miles southeast of Seymour Johnson Air Force Base (AFB) over the Atlantic Ocean, as well as Warning Areas W-161/177/72 (**Figure 1**). The overland special use airspace available for use by ADAIR missions include Seymour Johnson Echo, Gamecock A, Farmville, Phelps, Pamlico and Core MOAs; Burner and Hatteras ATCAAs; and Restricted Areas R-5306A and R-5314. The federal listed marine species that could potentially be impacted by the Proposed Action occur in the offshore Warning Areas W-122/161/177/72 and in the nearshore, Pamlico Sound, and rivers beneath the Burner ATCAA/Hatteras ATCAA/Pamlico MOA; R-5306A/Core MOA; and R-5314/Phelps MOA airspace (**Table 1**).

A list of federal listed species that could potentially occur beneath Warning Areas W-122/161/177/72 and the Burner ATCAA/Hatteras ATCAA/Pamlico MOA; R-5306A/Core MOA; and R-5314/Phelps MOA special use airspace was obtained from the National Oceanic and Atmospheric Administration (NOAA) Fisheries, Southeast Region website (NOAA, 2020a) and Greater Atlantic Region website (NOAA, 2020b). **Figure 1** shows the locations of the special use airspace ROIs. Fourteen listed species were identified in the special use airspace ROIs and include four fish, five marine mammals, and five sea turtles within the Warning Areas and two fish and five sea turtles in the nearshore, Pamlico Sound, and rivers beneath the Burner ATCAA/Hatteras ATCAA/Pamlico MOA; R-5306A/Core MOA; and R-5314/Phelps MOA airspace. **Table 1** includes the list of federally listed species that were identified with the potential to be within the ROIs and the effects determinations. There is designated critical habitat for the Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus),* loggerhead sea turtle (*Caretta caretta*), and North Atlantic right whale (*Eubalaena glacialis*) within the special use airspace ROIs (**Figure 1**). A description of the existing conditions for the special use airspace are found in Section 3.6, and the detailed analysis is found in Section 4.5 of the Draft EA.

There would be no ground-disturbing activities associated with the Proposed Action in special use airspace, and all potential impacts on threatened and endangered species would be associated with aircraft operations. Because there would be no ground-disturbing activities and chaff and flare would only be used in the Warning Areas, there would be no impacts on federally listed fish, marine mammals, reptiles, or their habitats within the Burner ATCAA/Hatteras ATCAA/Pamlico MOA; R-5306A/Core MOA; and R-5314/Phelps MOA airspace above the nearshore, Pamlico Sound and rivers. Likewise, the designated critical habitat for Atlantic sturgeon and loggerhead turtles beneath this airspace would not be impacted from the Proposed Action.

It is not expected that either aircraft movement or noise emissions, especially at higher altitudes, would elicit a response from marine mammals or sea turtles. Noise from contract ADAIR aircraft would not increase substantially (including from sonic booms) in the Warning Areas and would therefore have no impacts on the listed marine mammal species and sea turtles. Sonic booms from supersonic aircraft movement could cause a startle response by the listed species when they are present on the surface of the ocean; however, sonic booms would be relatively rare events during contract ADAIR training in the action area, and the sonic boom and postboom rumbling would be similar to what mammal species and sea turtles experience during a thunderstorm; therefore, sonic booms from supersonic aircraft movement is expected to have no impact on listed species.

Potential direct impacts on resources from training activities include the deposition of residual materials, such as plastic, from chaff and flare use, its accumulation in sensitive and protected areas, and the ultimate breakdown of these materials into substrate mediums. Indirect impacts include transportation of these materials to other areas by environmental elements and the potential for ingestion by sensitive species within the Warning Areas. The chemical constituents of flares and chaff fibers are not expected to have any direct or indirect impacts on listed species or designated critical habitat. Chaff and flare components consisting of end caps and pistons would be released into the marine environment, where they would persist for long periods and could be ingested by marine fauna while initially floating on the surface and sinking through the water column. Chaff and flare end caps and pistons would eventually sink to the seafloor (US Navy, 2009), which would reduce the likelihood of ingestion by marine fauna at the surface or in the water column.

1

In the event listed marine mammals encounter and ingest chaff and flare components within the Warning Areas, the small size of chaff and flare end caps and pistons (i.e., 1.3-inch [in.] diameter and 0.13 in. thick) would aid in passing through their digestive tract (US Navy, 2009). Similarly, sea turtles could also encounter and ingest the end caps of chaff and flares. While it is likely that the small components would pass through the digestive tract of mature sea turtles, these components could cause digestive problems for sea turtles if ingested. There is also the potential for listed fish to encounter chaff and flare components on the ocean floor while foraging, though there is no evidence that they would be mistaken for a food source and consumed. Due to the large size of the Warning Areas (50,140 square miles total) and relatively small increase in the amount of chaff and flare used (approximately 24,000 total annually), which equates to an increase of about two used per square mile annually. As such, it is unlikely that listed marine species would encounter expended chaff and flare plastic components. Since chaff and flare would only be used in the Warning Areas, there would be no potential impacts to listed species within the special use airspace over the nearshore, Pamlico Sound, and rivers. In addition, the use of defensive countermeasures and aircraft overflights would not alter the physical or biological features of the loggerhead turtle or North Atlantic right whale designated critical habitat in the Warning Areas.

The range of adult shortnose sturgeons (*Acipenser brevirostrum*) in the Atlantic Ocean is very limited, and the species does not usually move into the Warning Areas. Given the limited range of the shortnose sturgeon in the Atlantic Ocean, the short periods of time that the species spends in saltwater environments, and the distance of the Warning Areas from coastal waters where the shortnose sturgeon is more likely to be found, the shortnose sturgeon would not be present in the Warning Areas; therefore, the shortnose sturgeon would not encounter plastic debris from chaff and flares in the Warning Areas, and the proposed project would have no effect on the shortnose sturgeon.

Due to the factors discussed above and the analysis in the Draft EA, we have made a may affect, not likely to adversely affect determination for listed marine mammals, sea turtles, and fish, with the exception of the shortnose sturgeon. We have made a no effect determination for the shortnose sturgeon. **Table 1** lists the specific species determination. We have also determined there would be no effect to Atlantic sturgeon, loggerhead sea turtle, or North Atlantic right whale designated critical habitat located within the ROIs. The potential impacts and the effects determination for nesting sea turtles will be coordinated with the appropriate US Fish and Wildlife Service Field Services Office in separate correspondence.

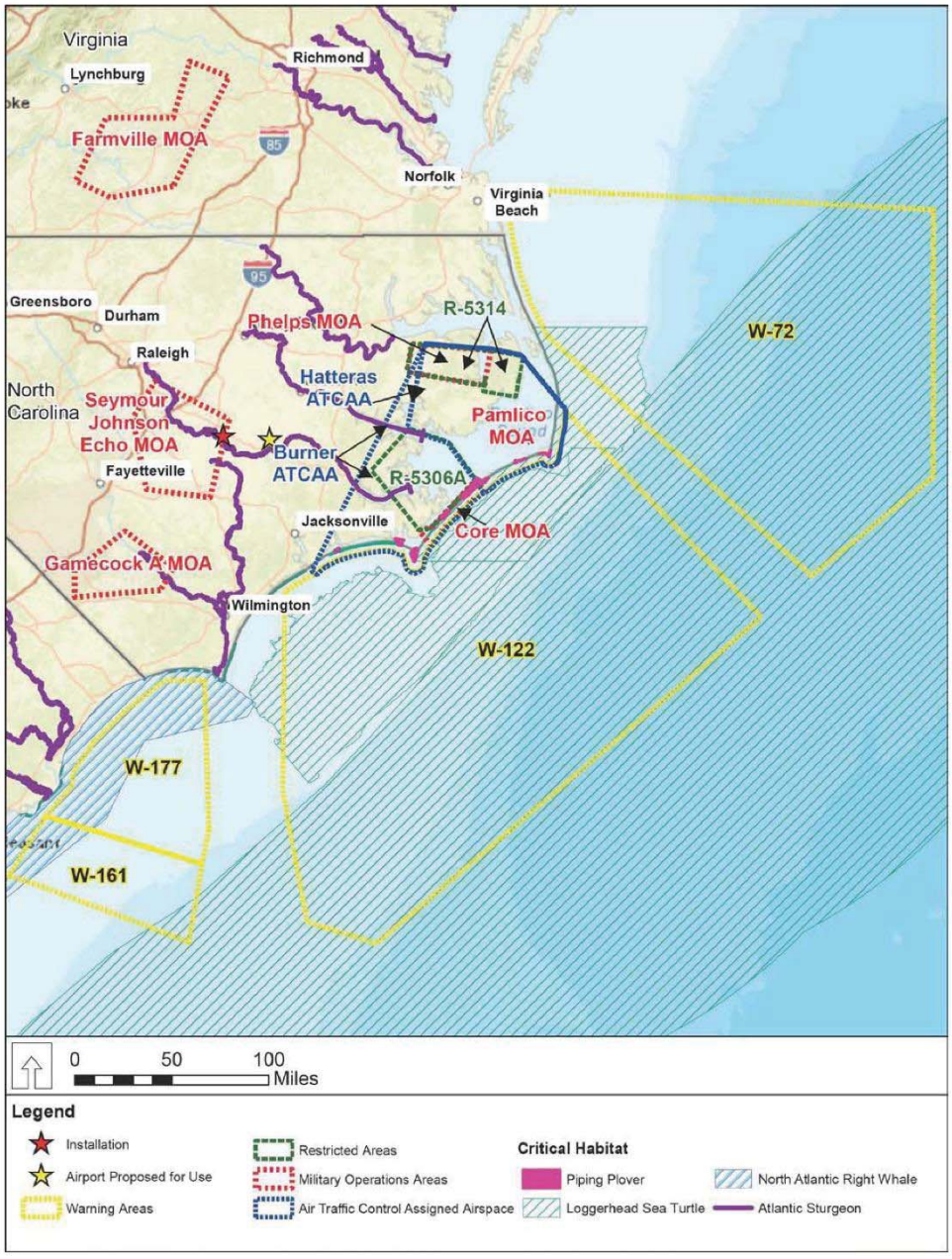


Figure 1. Special Use Airspace and Designated Critical Habitat within the Regions of Influence from Proposed Contract Adversary Air Operations to Support Seymour Johnson Air Force Base.

Table 1. Federally Listed Species with the Potential to be Located within the Regions of Influence from Proposed Contract Adversary Air Operations to Support Seymour Johnson Air Force Base

Species	Scientific Name	Federal Status	Burner ATCAA/ Hatteras ATCAA/ Pamlico MOA	R-5306A/ Core MOA	R-5314/ Phelps MOA	Warning Area W-72	Warning Area W-122	Warning Area W-177	Warning Area W-161	Effects Determination
Fish										
Atlantic Sturgeon	*Acipenser oxyrinchus oxyrinchus*	E	X[1]	X[1]		X	X	X	X	NLAA
Giant manta ray	*Manta birostris*	T				X	X	X	X	NLAA
Oceanic whitetip shark	*Carcharhinus longimanus*	T				X	X	X	X	NLAA
Short nose sturgeon	*Acipenser brevirostrum*	E	X	X	X	X	X	X	X	NE
Mammals										
Blue whale	*Balaenoptera musculus*	E				X	X	X	X	NLAA
Fin whale	*Balaenoptera physalus*	E				X	X	X	X	NLAA
North Atlantic right whale	*Eubalaena glacialis*	E				X	X	X[1]	X[1]	NLAA
Sei whale	*Balaenoptera borealis*	E				X	X	X	X	NLAA
Sperm whale	*Physeter catodon (= macrocephalus)*	E				X	X	X	X	NLAA
Reptiles										
Green Sea Turtle	*Chelonia mydas*	T	X	X	X	X	X	X	X	NLAA
Hawksbill Sea Turtle	*Eretmochelys imbricata imbricata*	E	X	X	X	X	X	X	X	NLAA
Kemp's Ridley Sea Turtle	*Lepidochelys kempii*	E	X	X	X	X	X	X	X	NLAA
Leatherback Sea Turtle	*Dermochelys coriacea*	E	X	X	X	X	X	X	X	NLAA
Loggerhead Sea Turtle	*Caretta caretta*	T	X[1]	X	X	X[1]	X[1]	X	X[1]	NLAA

Note:
[1] Designated Critical Habitat for the listed species is also located within the special use airspace
E = Endangered; NE = no effect; NLAA = may affect, not likely to adversely affect; T = Threatened

References

NOAA. 2020a. National Oceanic and Atmospheric Administration Fisheries, Threatened and Endangered Species and Critical Habitats Under NOAA Fisheries Jurisdiction. <https://www.fisheries.noaa.gov/southeast/consultations/southeast-region>. Accessed April 2020.

NOAA. 2020b. National Oceanic and Atmospheric Administration Fisheries, Greater Atlantic Region ESA Section 7 Mapper. <https://noaa.maps.arcgis.com/apps/webappviewer/index.html?id=1bc332edc5204e03b250ac11f9914a27>. Accessed April 2020.

US Navy. 2009. *Virginia Capes Range Complex Final Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS).* Prepared by the US Fleet Forces. March.

This page intentionally left blank

Responses

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Virginia Ecological Services Field Office
6669 Short Lane
Gloucester, VA 23061-4410
Phone: (804) 693-6694 Fax: (804) 693-9032
http://www.fws.gov/northeast/virginiafield/

In Reply Refer To:
Consultation Code: 05E2VA00-2020-TA-1933
Event Code: 05E2VA00-2020-E-05274
Project Name: PHF-Airfield

February 07, 2020

Subject: Verification letter for the 'PHF-Airfield' project under the January 5, 2016, Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-eared Bat and Activities Excepted from Take Prohibitions.

Dear Brett Feulner:

The U.S. Fish and Wildlife Service (Service) received on February 07, 2020 your effects determination for the 'PHF-Airfield' (the Action) using the northern long-eared bat (*Myotis septentrionalis*) key within the Information for Planning and Consultation (IPaC) system. This IPaC key assists users in determining whether a Federal action is consistent with the activities analyzed in the Service's January 5, 2016, Programmatic Biological Opinion (PBO). The PBO addresses activities excepted from "take"[1] prohibitions applicable to the northern long-eared bat under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based upon your IPaC submission, the Action is consistent with activities analyzed in the PBO. The Action may affect the northern long-eared bat; however, any take that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). Unless the Service advises you within 30 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the PBO satisfies and concludes your responsibilities for this Action under ESA Section 7(a)(2) with respect to the northern long-eared bat.

Please report to our office any changes to the information about the Action that you submitted in IPaC, the results of any bat surveys conducted in the Action area, and any dead, injured, or sick northern long-eared bats that are found during Action implementation. If the Action is not completed within one year of the date of this letter, you must update and resubmit the information required in the IPaC key.

If the Action may affect other federally listed species besides the northern long-eared bat, a proposed species, and/or designated critical habitat, additional consultation between you and this Service office is required. If the Action may disturb bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act is recommended.

---

[1]Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct [ESA Section 3(19)].

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

PHF-Airfield

2. Description

The following description was provided for the project 'PHF-Airfield':

Additional training flights

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/37.13183812237037N76.50193839226428W



Determination Key Result

This Federal Action may affect the northern long-eared bat in a manner consistent with the description of activities addressed by the Service's PBO dated January 5, 2016. Any taking that may occur incidental to this Action is not prohibited under the final 4(d) rule at 50 CFR §17.40(o). Therefore, the PBO satisfies your responsibilities for this Action under ESA Section 7(a)(2) relative to the northern long-eared bat.

Determination Key Description: Northern Long-eared Bat 4(d) Rule

This key was last updated in IPaC on May 15, 2017. Keys are subject to periodic revision.

This key is intended for actions that may affect the threatened northern long-eared bat.

The purpose of the key for Federal actions is to assist determinations as to whether proposed actions are consistent with those analyzed in the Service's PBO dated January 5, 2016.

Federal actions that may cause prohibited take of northern long-eared bats, affect ESA-listed species other than the northern long-eared bat, or affect any designated critical habitat, require ESA Section 7(a)(2) consultation in addition to the use of this key. Federal actions that may affect species proposed for listing or critical habitat proposed for designation may require a conference under ESA Section 7(a)(4).

Determination Key Result

This project may affect the threatened Northern long-eared bat; therefore, consultation with the Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.) is required. However, based on the information you provided, this project may rely on the Service's January 5, 2016, *Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-Eared Bat and Activities Excepted from Take Prohibitions* to fulfill its Section 7(a)(2) consultation obligation.

Qualification Interview

1. Is the action authorized, funded, or being carried out by a Federal agency?

   Yes

2. Have you determined that the proposed action will have "no effect" on the northern long-eared bat? (If you are unsure select "No")

   No

3. Will your activity purposefully **Take** northern long-eared bats?

   No

4. Is the project action area located wholly outside the White-nose Syndrome Zone?

   Automatically answered

   No

5. Have you contacted the appropriate agency to determine if your project is near a known hibernaculum or maternity roost tree?

   Location information for northern long-eared bat hibernacula is generally kept in state Natural Heritage Inventory databases – the availability of this data varies state-by-state. Many states provide online access to their data, either directly by providing maps or by providing the opportunity to make a data request. In some cases, to protect those resources, access to the information may be limited. A web page with links to state Natural Heritage Inventory databases and other sources of information on the locations of northern long-eared bat roost trees and hibernacula is available at www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html.

   Yes

6. Will the action affect a cave or mine where northern long-eared bats are known to hibernate (i.e., hibernaculum) or could it alter the entrance or the environment (physical or other alteration) of a hibernaculum?

   No

7. Will the action involve Tree Removal?

   No

Project Questionnaire

If the project includes forest conversion, report the appropriate acreages below. Otherwise, type '0' in questions 1-3.

1. Estimated total acres of forest conversion:

0

2. If known, estimated acres of forest conversion from April 1 to October 31

0

3. If known, estimated acres of forest conversion from June 1 to July 31

0

If the project includes timber harvest, report the appropriate acreages below. Otherwise, type '0' in questions 4-6.

4. Estimated total acres of timber harvest

0

5. If known, estimated acres of timber harvest from April 1 to October 31

0

6. If known, estimated acres of timber harvest from June 1 to July 31

0

If the project includes prescribed fire, report the appropriate acreages below. Otherwise, type '0' in questions 7-9.

7. Estimated total acres of prescribed fire

0

8. If known, estimated acres of prescribed fire from April 1 to October 31

0

9. If known, estimated acres of prescribed fire from June 1 to July 31

0

If the project includes new wind turbines, report the megawatts of wind capacity below. Otherwise, type '0' in question 10.

10. What is the estimated wind capacity (in megawatts) of the new turbine(s)?

0

From: Kelly Shotts - NOAA Federa [redacted]
Sent: Thursday, February 20, 2020 4:18 PM
To: PESENTI, CATHRYN M GS-12 USAF ACC 4 CES/CEIEA [redacted]
Cc: Mark Lamb - NOAA Federal [redacted]; Mark Murray-Brown - NOAA Federal [redacted] Karla Reece [redacted]>
Subject: [Non-DoD Source] Re: Air Force letter requesting ESA consult

Thank you for forwarding the letter, Mark!

Ms. Pesenti, your letter information on the listed species and critical habitat that may occur in your project area. The information can be found at the following link:

https://www.fisheries.noaa.gov/southeast/consultations/threatened-and-endangered-species-and-critical-habitats

Your letter also requests information on the potential effects of the proposed action on protected resources. Without more information on the project, I can't provide any additional insight on potential effects. However, we have resources on our website that provide assistance to action agencies with the information and materials needed to consult under Section 7 of the ESA.

https://www.fisheries.noaa.gov/southeast/endangered-species-conservation/esa-section-7-interagency-consultation-southeast-united-states

I hope this helps! Thank you for your consideration of our listed species and critical habitat as you determine the scope of your project!

Kelly

On Thu, Feb 20, 2020 at 12:16 PM Mark Murray-Brown - NOAA Federal [redacted] wrote:

> Dear Ms Pesenti - Thank you for your attached letter. By way of this email I am forwarding your letter to our NMFS Southeast office regional POCs as they can more appropriately address your ESA Section 7 request.
>
> ---------- Forwarded message ---------
> From: **Patricia Sousa - NOAA Federal** [redacted]
> Date: Fri, Feb 14, 2020 at 3:49 PM
> Subject: Letter attached
> To: Mark Murray-Brown - NOAA Federal [redacted]
>
> --
> ***Patricia Sousa***
> Division Secretary
> National Marine Fisheries Service

1

Greater Atlantic Regional Fisheries Office
Protected Resources Division
55 Great Republic Drive
Gloucester, MA 01930

Direct: [redacted]
Main Office: 978-282-9328
Fax: 978-281-9394
e-mail: [redacted]

--

Mark Murray-Brown
ESA Section 7 Coordinator
Protected Resources Division
NOAA National Marine Fisheries Service
Greater Atlantic Regional Fisheries Office
55 Great Republic Drive
Gloucester MA 01930
[redacted]

For ESA Section 7 guidance and updates on listed species presence and critical habitat analysis please see:
www.greateratlantic.fisheries.noaa.gov/protected/section7/index.html

To submit a request for technical information or ESA section 7 consultation please send to:
nmfs.gar.esa.section7@noaa.gov

--
Kelly Shotts
Interagency Cooperation Branch Chief
Protected Resources Division
NOAA Southeast Regional Office
National Marine Fisheries Service
263 13th Ave S
St. Petersburg, FL 33701

[redacted]
Fax: 727-824-5309
[redacted]
https://www.fisheries.noaa.gov/
https://www.fisheries.noaa.gov/region/southeast

NOAA FISHERIES

2

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Raleigh ES Field Office
Post Office Box 33726
Raleigh, North Carolina 27636-3726

March 13, 2020

Mr. Dennis G. Goodson, PE
Deputy Base Engineer
4th Civil Engineer Squadron
1095 Peterson Avenue
Seymour Johnson AFB, North Carolina 27531-2468

Dear Mr. Goodson:

The U.S. Fish and Wildlife Service (Service) has reviewed your February 4, 2020 letter and attachments regarding the proposed provisioning of Combat Air Forces contract adversary air (ADAIR) support for Seymour Johnson Air Force Base (AFB), North Carolina, to address shortfalls in combat readiness. ADAIR support would provide approximately 2,590 ADAIR sorties annually using 14 contractor-owned/operated aircraft. Of the three sites identified for prospective siting of ADAIR components, two sites are in North Carolina: Kinston Regional Jetport (Lenoir County; ISO) and Fayetteville Regional Airport (Cumberland County; FAY). Our comments are provided in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 USC 1531 et seq.).

Contract aircraft would depart from airport runways, transit from the airport to military special use airspace, perform ADAIR training, transit back, and land at the airport. Training activities would use existing special use airspace near Seymour Johnson AFB that overlie North Carolina and Virginia, as well as the Atlantic Ocean off the coasts of Virginia, North Carolina, and South Carolina. Operations and maintenance facilities would be contracted by the service provider at the civilian airport to support the ADAIR mission.

We have provided the attached lists of federally protected species for the two North Carolina counties (Cumberland and Lenoir) that contain the facilities that would be used to base ADAIR tactical support. These species lists identify the threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of the proposed project and/or may be affected by the proposed project.

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change these lists. 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 these species lists 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.

Section 7 of the Act requires that all federal agencies (or their designated non-federal representative), in consultation with the Service, insure that any action federally authorized, funded, or carried out by such agencies is not likely to jeopardize the continued existence of any federally-listed endangered or threatened species. A biological assessment or evaluation may be prepared to fulfill that requirement and in determining whether additional consultation with the Service is necessary.

In addition to the federally-protected species list, information on the species' life histories and habitats and information on completing a biological assessment or evaluation and can be found on our web page at http://www.fws.gov/raleigh. Please check the web site often for updated information or changes.

If your project contains suitable habitat for any of the federally-listed species known to be present within the county where your project occurs, the proposed action has the potential to adversely affect those species. As such, we recommend that surveys be conducted to determine the species' presence or absence within the project area. The use of North Carolina Natural Heritage program data should not be substituted for actual field surveys.

If you determine that the proposed action may affect (i.e., likely to adversely affect or not likely to adversely affect) a federally-protected species, you should notify this office with your determination, the results of your surveys, survey methodologies, and an analysis of the effects of the action on listed species, including consideration of direct, indirect, and cumulative effects, before conducting any activities that might affect the species. If you determine that the proposed action will have no effect (i.e., no beneficial or adverse, direct or indirect effect) on federally listed species, then you are not required to contact our office for concurrence (unless an Environmental Impact Statement is prepared). However, you should maintain a complete record of the assessment, including steps leading to your determination of effect, the qualified personnel conducting the assessment, habitat conditions, site photographs, and any other related articles.

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/ eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

Not all Threatened and Endangered Species that occur in North Carolina are subject to section 7 consultation with the U.S Fish and Wildlife Service. Atlantic and shortnose sturgeon, sea turtles, when in the water, and certain marine mammals are under purview of the National Marine Fisheries Service. If your project occurs in marine, estuarine, or coastal river systems you should also contact the National Marine Fisheries Service, http://www.nmfs.noaa.gov/.

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. If you have any questions or comments, please contact John Hammond of this office at [redacted]. Thank you for your continued cooperation with our agency.

2

Sincerely,

for Pete Benjamin
Field Supervisor

Attachments:

- Official Species Lists

Endangered Species, Threatened Species,Federal Species of Concern, and Candidate Species,

Cumberland County, North Carolina



Updated: 06-27-2018

Common Name	Scientific name	Federal Status	Record Status
Vertebrate:			
American alligator	*Alligator mississippiensis*	T (S/A)	Current
Cape Fear shiner Range by Basin	*Notropis mekistocholas*	E	Current
Carolina gopher frog	*Rana capito capito*	ARS	Current
Red-cockaded woodpecker	*Picoides borealis*	E	Current
Southern hognose snake	*Heterodon simus*	ARS	Obscure
Invertebrate:			
Atlantic pigtoe Range by Basin	*Fusconaia masoni*	ARS	Historic
Saint Francis' satyr butterfly	*Neonympha mitchellii francisci*	E	Current
Vascular Plant:			
American chaffseed	*Schwalbea americana*	E	Current
Bog spicebush	*Lindera subcoriacea*	ARS	Current
Boykin's lobelia	*Lobelia boykinii*	ARS	Current
Georgia lead-plant	*Amorpha georgiana* var. *georgiana*	ARS	Current
Michaux's sumac	*Rhus michauxii*	E	Current
Pondberry	*Lindera melissifolia*	E	Current
Rough-leaved loosestrife	*Lysimachia asperulaefolia*	E	Current
Venus' fly-trap	*Dionaea muscipula*	ARS	Current
Nonvascular Plant:			
Lichen:			

Definitions of Federal Status Codes:
E = endangered. A taxon "in danger of extinction throughout all or a significant portion of its range."
T = threatened. A taxon "likely to become endangered within the foreseeable future throughout all or a significant portion of its range."
C = candidate. A taxon under consideration for official listing for which there is sufficient information to support listing. (Formerly "C1" candidate species.)
BGPA =Bald and Golden Eagle Protection Act. See below.
ARS = At Risk Species. Species that are Petitioned, Candidates or Proposed for Listing under the Endangered Species Act. Consultation under Section 7(a)(2) of the ESA is not required for Candidate or Proposed species; although a Conference, as described under Section 7(a)(4) of the ESA is recommended for actions affecting species proposed for listing.
FSC=Federal Species of Concern. FSC is an informal term. It is not defined in the federal Endangered Species Act. In North Carolina, the Asheville and Raleigh Field Offices of the US Fish and Wildlife Service (Service) define Federal Species of Concern as those species that appear to be in decline or otherwise in need of conservation and are under consideration for listing or for which there is insufficient information to support listing at this time.Subsumed under the term "FSC" are all species petitioned by outside parties and other selected focal species identified in Service strategic plans, State Wildlife Action Plans, or Natural Heritage Program Lists.
T(S/A) = threatened due to similarity of appearance. A taxon that is threatened due to similarity of appearance with another listed species and is listed for its protection. Taxa listed as T(S/A) are not biologically endangered or threatened and are not subject to Section 7 consultation. See below.
EXP = experimental population. A taxon listed as experimental (either essential or nonessential). Experimental, nonessential populations of endangered species (e.g., red wolf) are treated as threatened species on public land, for consultation purposes, and as species proposed for listing on private land.
P = proposed. Taxa proposed for official listing as endangered or threatened will be noted as "PE" or "PT", respectively.

Bald and Golden Eagle Protection Act (BGPA):

In the July 9, 2007 Federal Register(72:37346-37372), the bald eagle was declared recovered, and removed (de-listed) from the Federal List of Threatened and Endangered wildlife. This delisting took effect August 8,2007. After delisting, the Bald and Golden Eagle Protection Act (Eagle Act) (16 U.S.C. 668-668d) becomes the primary law protecting bald eagles. The Eagle Act prohibits take of bald and golden eagles and provides a statutory definition of "take" that includes "disturb". The USFWS has developed National Bald Eagle Management Guidelines to provide guidance to land managers, landowners, and others as to how to avoid disturbing bald eagles. For mor information, visit http://www.fws.gov/migratorybirds/baldeagle.htm

Threatened due to similarity of appearance(T(S/A)):

In the November 4, 1997 Federal Register (55822-55825), the northern population of the bog turtle (from New York south to Maryland) was listed as T (threatened), and the southern population (from Virginia south to Georgia) was listed as T(S/A) (threatened due to similarity of appearance). The T(S/A) designation bans the collection and interstate and international commercial trade of bog turtles from the southern population. The T(S/A) designation has no effect on land management activities by private landowners in North Carolina, part of the southern population of the species. In addition to its official status as T(S/A), the U.S. Fish and Wildlife Service considers the southern population of the bog turtle as a Federal species of concern due to habitat loss.

Definitions of Record Status:

Current - the species has been observed in the county within the last 50 years.
Historic - the species was last observed in the county more than 50 years ago.
Obscure - the date and/or location of observation is uncertain.
Incidental/migrant - the species was observed outside of its normal range or habitat.
Probable/potential - the species is considered likely to occur in this county based on the proximity of known records (in adjacent counties), the presence of potentially suitable habitat, or both.

Endangered Species, Threatened Species,Federal Species of Concern, and Candidate Species,

Lenoir County, North Carolina



Updated: 12-02-2019

TR VALIGN=TOP>

Common Name	Scientific name	Federal Status	Record Status
Vertebrate:			
American alligator	*Alligator mississippiensis*	T (S/A)	Current
Bald eagle	*Haliaeetus leucocephalus*	BGPA	Current
Carolina madtom Range by Basin	*Noturus furiosus*	ARS	Current
Neuse River waterdog Range by basin	*Necturus lewisi*	ARS	Current
Red-cockaded woodpecker	*Picoides borealis*	E	Historic
West Indian manatee	*Trichechus manatus*	E	Current
Invertebrate:			
Atlantic pigtoe Range by Basin	*Fusconaia masoni*	ARS	Current
Vascular Plant:			
Georgia lead-plant	*Amorpha georgiana* var. *georgiana*	ARS	Historic
Sensitive joint-vetch	*Aeschynomene virginica*	T	Historic
Venus' fly-trap	*Dionaea muscipula*	ARS	Historic
Nonvascular Plant:			
Lichen:			

Definitions of Federal Status Codes:
E = endangered. A taxon "in danger of extinction throughout all or a significant portion of its range."
T = threatened. A taxon "likely to become endangered within the foreseeable future throughout all or a significant portion of its range."
C = candidate. A taxon under consideration for official listing for which there is sufficient information to support listing. (Formerly "C1" candidate species.)
BGPA =Bald and Golden Eagle Protection Act. See below.
ARS = At Risk Species. Species that are Petitioned, Candidates or Proposed for Listing under the Endangered Species Act. Consultation under Section 7(a)(2) of the ESA is not required for Candidate or Proposed species; although a Conference, as described under Section 7(a)(4) of the ESA is recommended for actions affecting species proposed for listing.
FSC=Federal Species of Concern. FSC is an informal term. It is not defined in the federal Endangered Species Act. In North Carolina, the Asheville and Raleigh Field Offices of the US Fish and Wildlife Service (Service) define Federal Species of Concern as those species that appear to be in decline or otherwise in need of conservation and are under consideration for listing or for which there is insufficient information to support listing at this time.Subsumed under the term "FSC" are all species petitioned by outside parties and other selected focal species identified in Service strategic plans, State Wildlife Action Plans, or Natural Heritage Program Lists.
T(S/A) = threatened due to similarity of appearance. A taxon that is threatened due to similarity of appearance with another listed species and is listed for its protection. Taxa listed as T(S/A) are not biologically endangered or threatened and are not subject to Section 7 consultation. See below.
EXP = experimental population. A taxon listed as experimental (either essential or nonessential). Experimental, nonessential populations of endangered species (e.g., red wolf) are treated as threatened species on public land, for consultation purposes, and as species proposed for listing on private land.
P = proposed. Taxa proposed for official listing as endangered or threatened will be noted as "PE" or "PT", respectively.

Bald and Golden Eagle Protection Act (BGPA):

In the July 9, 2007 Federal Register(72:37346-37372), the bald eagle was declared recovered, and removed (de-listed) from the Federal List of Threatened and Endangered wildlife. This delisting took effect August 8,2007. After delisting, the Bald and Golden Eagle Protection Act (Eagle Act) (16 U.S.C. 668-668d) becomes the primary law protecting bald eagles. The Eagle Act prohibits take of bald and golden eagles and provides a statutory definition of "take" that includes "disturb". The USFWS has developed National Bald Eagle Management Guidelines to provide guidance to land managers, landowners, and others as to how to avoid disturbing bald eagles. For mor information, visit http://www.fws.gov/migratorybirds/baldeagle.htm

Threatened due to similarity of appearance(T(S/A)):

In the November 4, 1997 Federal Register (55822-55825), the northern population of the bog turtle (from New York south to Maryland) was listed as T (threatened), and the southern population (from Virginia south to Georgia) was listed as T(S/A) (threatened due to similarity of appearance). The T(S/A) designation bans the collection and interstate and international commercial trade of bog turtles from the southern population. The T(S/A) designation has no effect on land management activities by private landowners in North Carolina, part of the southern population of the species. In addition to its official status as T(S/A), the U.S. Fish and Wildlife Service considers the southern population of the bog turtle as a Federal species of concern due to habitat loss.

Definitions of Record Status:

Current - the species has been observed in the county within the last 50 years.
Historic - the species was last observed in the county more than 50 years ago.
Obscure - the date and/or location of observation is uncertain.
Incidental/migrant - the species was observed outside of its normal range or habitat.
Probable/potential - the species is considered likely to occur in this county based on the proximity of known records (in adjacent counties), the presence of potentially suitable habitat, or both.

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Virginia Field Office
6669 Short Lane
Gloucester, VA 23061

Date: May 28, 2020

Self-Certification Letter

Project Name: Combat Air Forces Adversary Air at Seymour Johnson, AFB

Dear Applicant:

Thank you for using the U.S. Fish and Wildlife Service (Service) Virginia Ecological Services online project review process. By printing this letter in conjunction with your project review package, you are certifying that you have completed the online project review process for the project named above in accordance with all instructions provided, using the best available information to reach your conclusions. This letter, and the enclosed project review package, completes the review of your project in accordance with the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended (ESA). This letter also provides information for your project review under the National Environmental Policy Act of 1969 (P.L. 91-190, 42 U.S.C. 4321-4347, 83 Stat. 852), as amended. A copy of this letter and the project review package must be submitted to this office for this certification to be valid. This letter and the project review package will be maintained in our records.

The species conclusions table in the enclosed project review package summarizes your ESA conclusions. These conclusions resulted in:

- "no effect" determinations for proposed/listed species and/or proposed/designated critical habitat; and/or
- Action may affect the northern long-eared bat; however, any take that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR § 17.40(o) [as determined through the Information, Planning, and Consultation System (IPaC) northern long-eared bat assisted determination key]; and/or
- "may affect, not likely to adversely affect" determinations for proposed/listed species and/or proposed/designated critical habitat.

VERSION 3.1

Applicant Page 2

We certify that use of the online project review process in strict accordance with the instructions provided as documented in the enclosed project review package results in reaching the appropriate determinations. Therefore, we concur with the determinations described above for proposed and listed species and proposed and designated critical habitat. Additional coordination with this office is not needed.

Candidate species are not legally protected pursuant to the ESA. However, the Service encourages consideration of these species by avoiding adverse impacts to them. Please contact this office for additional coordination if your project action area contains candidate species.

Should project plans change or if additional information on the distribution of proposed or listed species, proposed or designated critical habitat becomes available, this determination may be reconsidered. This certification letter is valid for 1 year.

Information about the online project review process including instructions and use, species information, and other information regarding project reviews within Virginia is available at our website http://www.fws.gov/northeast/virginiafield/endspecies/project_reviews.html. If you have any questions, please contact Troy Andersen of this office at [redacted]

Sincerely,

Cindy Schulz
Field Supervisor
Virginia Ecological Services

Enclosures - project review package

VERSION 3.1

Species Conclusions Tables

Project Name: Combat Air Forces Adversary Air at Joint Base Langley-Eustis

Date: 28 May 2020

Species / Resource Name	Conclusion	ESA Section 7	Notes / Documentation
Gray Bat *Myotis grisescens*	No tree clearing would occur. Negligible impacts from increased military operations in the Farmville MOA	No Effect	Noise from contract ADAIR aircraft would not exceed 45 decibels (dB). Aircraft movement would likely not be visible to bats. Potential disturbance from contract ADAIR aircraft would be negligible.
Northern Long-eared Bat *Myotis septentrionalis*	No tree clearing would occur. Negligible impacts from increased military operations in the Farmville MOA	No Effect	NLEB Determination Key (DKey) not necessary due to No Effect determination. Noise from contract ADAIR aircraft would not exceed 45 decibels (dB). Aircraft movement would likely not be visible to bats. Potential disturbance from contract ADAIR aircraft would be negligible.
Roanoke Logperch *Percina rex*	No ground disturbing activities	No Effect	No ground-disturbing activities. Chaff and flare would only be used in the offshore Warning Areas.
Atlantic Pigtoe Fusconaia masoni	No ground disturbing activities	No Effect	No ground-disturbing activities. Chaff and flare would only be used in the offshore Warning Areas.
Yellow Lance Elliptio lanceolata	No ground disturbing activities	No Effect	No ground-disturbing activities. Chaff and flare would only be used in the offshore Warning Areas.
Harperella Ptilimnium nodosum	No ground disturbing activities	No Effect	No ground-disturbing activities. Chaff and flare would only be used in the offshore Warning Areas.
Roseate Tern *Sterna dougallii dougallii*	May encounter chaff and flare components on the ocean surface	May affect, not likely to adversely affect	Most chaff and flare plastic components are expected to fall through the water column to the sea floor and would not remain on the ocean surface where a foraging bird would encounter and consume the plastic pieces. Chaff and flare would be used over a large area (50,140 square miles), and therefore, it is highly unlikely that foraging birds would encounter chaff and flare components; the potential for ingestion of plastic chaff and flare components as a result of the increased use of chaff and flares is negligible.
Critical Habitat	No critical habitat present	No Effect	

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Virginia Ecological Services Field Office
6669 Short Lane
Gloucester, VA 23061-4410
Phone: (804) 693-6694 Fax: (804) 693-9032
http://www.fws.gov/northeast/virginiafield/

In Reply Refer To: May 28, 2020
Consultation Code: 05E2VA00-2020-SLI-4004
Event Code: 05E2VA00-2020-E-11291
Project Name: Combat Air Forces Adversary Air at Seymour Johnson AFB, NC

Subject: List of threatened and endangered species that may occur in your proposed project location, and/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.*). Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

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)(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

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

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 Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries

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:

Virginia Ecological Services Field Office
6669 Short Lane
Gloucester, VA 23061-4410
(804) 693-6694

Project Summary

Consultation Code: 05E2VA00-2020-SLI-4004

Event Code: 05E2VA00-2020-E-11291

Project Name: Combat Air Forces Adversary Air at Seymour Johnson AFB, NC

Project Type: MILITARY OPERATIONS / MANEUVERS

Project Description: The Proposed Action is to contract the support of approximately 2,590 ADAIR sorties annually using 14 contractor-owned and contractor-operated aircraft. Contract ADAIR would support training for the 4th Fighter Wing (4 FW) at Seymour Johnson AFB in Goldsboro, North Carolina by operating out of one of Kinston Regional Jetport (ISO). The additional sorties would occur within multiple overland Military Operations Areas (MOAs) in North Carolina and Virginia, as well in offshore Warning Areas. In Virginia, training activities would use the Farmville Military Operations Area and the offshore W-72 Warning Area.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/37.179174045445905N78.49691383878208W



Counties: Amelia, VA | Appomattox, VA | Campbell, VA | Charlotte, VA | Cumberland, VA | Halifax, VA | Lunenburg, VA | Mecklenburg, VA | Nottoway, VA | Powhatan, VA | Prince Edward, VA

Endangered Species Act Species

There is a total of 6 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 Fisheries[1], 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.

Mammals

NAME	STATUS
Gray Bat *Myotis grisescens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Fishes

NAME	STATUS
Roanoke Logperch *Percina rex* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1134	Endangered

Clams

NAME	STATUS
Atlantic Pigtoe *Fusconaia masoni* There is **proposed** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5164	Proposed Threatened
Yellow Lance *Elliptio lanceolata* There is **proposed** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4511	Threatened

Flowering Plants

NAME	STATUS
Harperella *Ptilimnium nodosum* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3739	Endangered

Critical habitats

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

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Virginia Ecological Services Field Office
6669 Short Lane
Gloucester, VA 23061-4410
Phone: (804) 693-6694 Fax: (804) 693-9032
http://www.fws.gov/northeast/virginiafield/

In Reply Refer To: May 28, 2020
Consultation Code: 05E2VA00-2020-SLI-4003
Event Code: 05E2VA00-2020-E-11289
Project Name: Combat Air Forces Adversary Air at Seymour Johnson AFB, NC

Subject: List of threatened and endangered species that may occur in your proposed project location, and/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.*). Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

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)(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

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

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 Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries

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:

Virginia Ecological Services Field Office
6669 Short Lane
Gloucester, VA 23061-4410
(804) 693-6694

This project's location is within the jurisdiction of multiple offices. Expect additional species list documents from the following office, and expect that the species and critical habitats in each document reflect only those that fall in the office's jurisdiction:

Raleigh Ecological Services Field Office
Post Office Box 33726
Raleigh, NC 27636-3726
(919) 856-4520

Project Summary

Consultation Code: 05E2VA00-2020-SLI-4003

Event Code: 05E2VA00-2020-E-11289

Project Name: Combat Air Forces Adversary Air at Seymour Johnson AFB, NC

Project Type: MILITARY OPERATIONS / MANEUVERS

Project Description: The Proposed Action is to contract the support of approximately 2,590 ADAIR sorties annually using 14 contractor-owned and contractor-operated aircraft. Contract ADAIR would support training for the 4th Fighter Wing (4 FW) at Seymour Johnson AFB in Goldsboro, North Carolina by operating out of one of Kinston Regional Jetport (ISO). The additional sorties would occur within multiple overland Military Operations Areas (MOAs) in North Carolina and Virginia, as well in offshore Warning Areas. In Virginia, training activities would use the Farmville Military Operations Area and the offshore W-72 Warning Area.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/35.65496362150006N73.90365795950396W



Counties: Currituck, NC | Dare, NC | Virginia Beach, VA

Endangered Species Act Species

There is a total of 2 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 Fisheries[1], 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.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Birds

NAME	STATUS
Roseate Tern *Sterna dougallii dougallii* Population: Northeast U.S. nesting population No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2083	Endangered

Critical habitats

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

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

From: Case, Rachel L [redacted] **On Behalf Of** Virginia Field Office, FW5
Sent: Thursday, June 11, 2020 12:02 PM
To: PESENTI, CATHRYN M GS-12 USAF ACC 4 CES/CEIEA [redacted]
Subject: [Non-DoD Source] Re: [EXTERNAL] Effect Determination for Combat Air Forces Contract Adversary Air (ADAIR)

Cathryn,
I have received your project submission for the referenced project through our online review process. I have completed your review and have no comments or concerns. The Self-Certification Letter you submitted with your project package serves as our concurrence.

All the best,
Rachel

From: Nystrom, Sarah [redacted]
Sent: Monday, June 1, 2020 10:05 AM
To: PESENTI, CATHRYN M GS-12 USAF ACC 4 CES/CEIEA [redacted]>; Virginia Field Office, FW5 <virginiafieldoffice@fws.gov>
Subject: Re: [EXTERNAL] Effect Determination for Combat Air Forces Contract Adversary Air (ADAIR)

Hi Cathryn,
I'm no longer working at the Gloucester Office, so I've cc'd the project email box so that your message gets to the right person! This email inbox is monitored daily so your project should be reviewed and assigned quickly.

Feel free to let me know if I can help put you in touch with the right people.
Sarah

** Temporary Detail as Listing Coordinator for the North Atlantic- Appalachian Region until July 4th**

Sarah Nystrom
Regional IPaC and EPM Coordinator
North Atlantic - Appalachian Region
300 Westgate Center Drive, Hadley, MA 01075
Office Phone: [redacted]
Temporary Work from Home Phone: [redacted]

From: PESENTI, CATHRYN M GS-12 USAF ACC 4 CES/CEIEA
Sent: Monday, June 1, 2020 6:43 AM
To: Nystrom, Sarah
Subject: [EXTERNAL] Effect Determination for Combat Air Forces Contract Adversary Air (ADAIR)

Ms. Nystrom,

During the week of May 5, the attached Effect Determination for the ADAIR proposal was mailed to your office; however, due to widespread COVID-19 office closures, we have opted to send this separate correspondence to ensure your office is in receipt of the document. Additionally, the self-certification for this project has been submitted per the instructions on your agency's website. We are requesting your agency's concurrence on the biological conclusions included in the letter and Draft EA as soon as possible.

If you require any additional information, please let me know. Thank you for your assistance.

Regards,

CATHRYN PESENTI, GS-12, DAF
Environmental Planner
4th Civil Engineer Squadron
Seymour Johnson Air Force Base
[redacted]

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Raleigh ES Field Office
Post Office Box 33726
Raleigh, North Carolina 27636-3726

June 16, 2020

Mr. Dennis G. Goodson, PE
Deputy Base Engineer
4th Civil Engineer Squadron
1095 Peterson Avenue
Seymour Johnson AFB, North Carolina 27531-2468

Dear Mr. Goodson:

The U.S. Fish and Wildlife Service (Service) has reviewed your April 27, 2020 letter and attachments regarding the United States Air Force's (Air Force) proposed Combat Air Forces contract adversary air (ADAIR) support for Seymour Johnson Air Force Base (SJAFB). The Air Force has prepared a Draft Environmental Assessment (EA) and Proposed Finding of No Significant Impact (FONSI) evaluating the potential environmental impacts associated with the proposed action. The Air Force's effects determinations for federally listed species and designated critical habitat are based on the information contained in the Draft EA. Our comments are provided in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 USC 1531 et seq.).

The proposed action is to contract the support of approximately 2,590 ADAIR sorties annually using 14 contractor-owned/operated aircraft. Contract ADAIR would support training for the 4th Fighter Wing (4 FW) at Seymour Johnson AFB in Goldsboro, North Carolina by operating out of Kinston Regional Jetport (ISO). Aircraft would depart from ISO, transit from the airport to military special use airspace, perform ADAIR training, transit back, and land at ISO.

Training activities would use existing special use airspace near SJAFB, including the Echo MOA (Military Operations Area)(Harnett, Johnston, Wayne, Duplin and Sampson counties); Gamecock A MOA (Bladen, Columbus and Robeson counties); Core MOA (Carteret County); Phelps MOA (Dare, Hyde, Tyrell and Washington counties); Pamlico MOA (Carteret, Dare and Hyde counties); R-5306A Restricted Area (Beaufort, Carteret, Craven, Pamlico and Hyde counties); and R-5314 Restricted Area (Dare, Hyde, Tyrell and Washington counties). Operations and maintenance facilities would be contracted by the service provider at ISO to support the ADAIR mission. No construction activities are proposed as a part of the proposed action.

The enclosure to your April 27, 2020 letter identifies two regions of influence (ROI) within the project area: the Airport ROI and the Special Use Airspace ROI. No ground disturbing activities are proposed as a part of the action at the Airport; all potential impacts on federally listed species would be associated with aircraft operations within the ROIs. The Air Force determined that the proposed action would have no effect on listed plant species, amphibians, reptiles, mollusks or fish within the Airport ROI.

The Draft EA identifies the federally endangered red-cockaded woodpecker (*Picoides borealis* = *Dryobates borealis*; RCW) as having potential to be affected by noise and visual disturbance associated with increased air operations at ISO. Potential RCW habitat adjacent to and near ISO is considered marginal and patchy. The potential for RCWs to use forests surrounding the airport is considered low. Contract ADAIR would maintain a Bird/Wildlife Aircraft Strike Hazard (BASH) prevention program to reduce or eliminate potential BASH incidents. This program would further reduce any potential for the proposed action to have impacts on the RCW. The Air Force has determined that the proposed action will have no effect on the RCW.

Within the Special Use Airspace ROI, a large portion of the proposed action will take place in operational airspace in the offshore Warning Area W-122 located about 60 miles southeast of SJAFB over the Atlantic Ocean as well as Warning Areas W-161, -177 and -72. Overland special use air space will include Seymour Johnson Echo, Gamecock A, Farmville, Phelps, Pamlico, and Core MOAs; Burner and Hatteras Air Traffic Control Assigned Airspaces (ATCAAs); and Restricted Areas R-5306A and R-5314.

No ground-disturbing activities are proposed within the overland portion of the Special Use Airspace ROI. All potential impacts to threatened and endangered species would be associated with aircraft operations. No impacts to federally listed plant species, amphibians, fish, invertebrates, reptiles or their habitat are anticipated in the overland Special Use Airspace ROI.

Overland portions of the Special Use Airspace ROI overlap designated critical habitat for piping plover and loggerhead turtles. The proposed action will not involve alteration of the physical and biological features present in the affected units. The minor increase of air traffic associated with the proposed action within special use airspace is not expected to result in modification of critical habitat for either species.

The Draft EA summarizes potential impacts of aircraft operations within the Special Use Airspace ROI on listed birds, including aircraft movement, noise, bird/aircraft strikes, and the use of countermeasure chaff and flares. ADAIR training will take place at high altitudes over a large area during daylight hours. The likelihood for birds to encounter aircraft during training is low.

Military air operations training already occurs within the overland special use airspace. The proposed action would only increase the total number of sorties in the North Carolina overland airspace by 516 sorties annually. This increase is not expected to elicit any additional startling effects on birds.

Aircraft noise in the overland special use airspace would not exceed 45 decibels (dB) as a result of the proposed action. Further, chaff and flares would not be used in the overland special use airspace. The Air Force determined that the proposed action within the Special Use Airspace ROI would have no effect on the RCW, eastern black rail (*Laterallus jamaicensis* ssp. *jamaicensis*), piping plover (*Charadrius melodus*), red knot (*Calidris canutus rufa*), or wood stork (*Mycteria americana*).

The Bermuda petrel (*Pterodroma cahow*) and roseate tern (*Sterna dougallii dougallii*) could potentially encounter chaff and flare components on the ocean surface while foraging within the Warning Areas. The Draft EA summarizes the risks of seabirds ingesting plastic when it is mistaken for food items. Most chaff and flare plastic components are expected to fall through the water column to the sea floor and would not remain on the ocean surface where a foraging bird would encounter and consume the plastic pieces.

Chaff and flares would also be used over a large area (50,140 square miles). Due to low density and dispersal and sinking rates of countermeasure byproducts the Air Force determined that it is highly unlikely that foraging birds would encounter chaff and flare components floating on the ocean surface, and that the potential for ingestion of plastic chaff and flare components as a result of the increased use of countermeasures is negligible. The Air Force determined that the proposed action may affect, but is not likely to adversely affect the Bermuda petrel or roseate tern.

Mammal species that may occur in the Special Use Airspace ROI include northern long-eared bat (*Myotis septentrionalis*), red wolf (*Canis rufus*) and West Indian manatee (*Trichechus manatus*). Military air operations currently occur in all of the proposed overland special use airspace, and the additional number of operations is relatively small. It is highly unlikely that either aircraft movement or noise, especially at higher altitudes, would elicit a response from mammals. The Air Force has determined that the proposed action will have no effect on the northern long-eared bat or red wolf.

The Draft EA considers the potential that manatees may encounter and possibly ingest chaff and flares that have passed through the water column and lie on the ocean floor. Due to the small size of these components, if consumed, they would likely pass through the animals digestive tracts. Manatees generally occur in North Carolina waters during the warmer summer and fall months. They are usually found in brackish waters of estuaries, bays, river mouths and the Intracoastal Waterway. The number of manatees that may be present in the Warning Areas is unknown but is expected to be very low. The Air Force has determined that the proposed action may affect, but is not likely to adversely affect the West Indian manatee.

Noise associated with the proposed action would not increase substantially and the slight increase in frequency of aircraft operations within special use airspace is not expected to have any impacts on nesting sea turtles. The Air Force has determined that the proposed action will not affect nesting sea turtles. Where the proposed action may have impacts on sea turtles in the waters within the project area, the Air Force will consult with the appropriate National Marine Fisheries Service regional office in a separate correspondence.

Based on a review of the information contained in your April 27, 2020 letter and enclosure and the Draft EA, the Service concurs with your determination that the proposed action may affect but is not likely to adversely affect the Bermuda petrel, roseate tern or West Indian manatee, and will not result in adverse modification of critical habitat for the piping plover and loggerhead turtle. The Service also concurs with your "no effect" determinations for species as indicated in Table 2 of the April 27, 2020 letter's enclosure, including the piping plover, eastern black rail, red-cockaded woodpecker, wood stork, northern long-eared bat or red wolf.

We believe that the requirements of section 7(a)(2) of the Act have been satisfied. We remind you that obligations under section 7 consultation must be reconsidered if: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered; (2) this action is subsequently modified in a manner that was not considered in this review; or, (3) a new species is listed or critical habitat determined that may be affected by the identified action.

If you have any questions regarding this matter, please contact Mr. John Hammond at [redacted] Thank you for your continued cooperation with our agency.

Sincerely,

JOHN HAMMOND Digitally signed by JOHN HAMMOND Date: 2020.06.16 12:30:15 -04'00'

for Pete Benjamin
Field Supervisor

4

This page intentionally left blank

Appendix A-3

General

This page intentionally left blank

Mailing List

Andrew Brooks
Regional Environmental Program Manager
FAA, Eastern Region Airports Division
159-30 Rockaway Boulevard
Jamaica, NY 11434-4848

Bettina Sullivan
VDEQ Office of Environmental Impact Review
629 East Main Street
Richmond, VA 23219

Bobby Walston
Aviation Director
North Carolina Division of Aviation
1560 Mail Service Center
Raleigh, NC 27699-1560

Braxton Davis
Director
North Carolina Division of Coastal Management
400 Commerce Avenue
Morehead City, NC 28557

Candice White
Clerk of the Board
Cumberland County Board of Commissioners
117 Dick Street, Room 561
Fayetteville, NC 28301

Chip Crumpler
Environmental Health Department
Planning Board
224 E. Walnut Street
Goldsboro, NC 27530

The Honorable Chris Humphrey
Representative
North Carolina General Assembly
300 N. Salisbury Street, Room 632
Raleigh, NC 27603-5925

The Honorable Chuck Allen
Mayor
City of Goldsboro
200 North Center Street
Goldsboro, NC 27530

Craig Honeycutt
Director
Wayne County Manager
224 E Walnut Street
Goldsboro, NC 27530

Crystal Best
North Carolina State Environmental Review
Clearinghouse
1301 Mail Service Center
Raleigh, NC 27699-1301

The Honorable Dan Bishop
Congressman
US House of Representatives
132 Cannon HOB
Washington, D.C. 20515

The Honorable David Rouzer
Congressman
US House of Representatives
2439 Rayburn House Office Building
Washington, D.C. 20515

The Honorable Don Hardy
Mayor
City of Kinston
207 E. King Street
Kinston, NC 28502

Doug Hewett
City Manager
City of Fayetteville
433 Hay Street
Fayetteville, NC 28301

The Honorable Felicia Solomon
Mayor Pro Tem
City of Kinston
207 E. King Street
Kinston, NC 28502

Francois Natasha
Reference Department Head
Wayne County Board of Commissioners
224 E. Walnut Street
Goldsboro, NC 27530

Gordon Myers
Executive Director
North Carolina Wildlife Resources Commission
1701 Mail Service Center
Raleigh, NC 27699-1700

Gregory Richardson
Executive Director
North Carolina Commission of Indian Affairs
1317 Mail Service Center
Raleigh, NC 27699-1317

Heather McTeer Toney
Regional Administrator
USEPA, Reg IV, Sam Nunn Atlanta Federal Center
61 Forsyth Street SW
Atlanta, GA 30303-8960

Larry Gissentanna
Project Manager, DOD & Fed Facilities
USEPA, Reg IVs
Sam Nunn Atlanta Federal Center
61 Forsyth Street SW
Atlanta, GA 30303-8960

Jacqueline Sweatt-Essick
Regional Environmental Program Manager
FAA, Southern Region Airports Division
2600 Thousand Oaks Boulevard, Suite 2250
Memphis, TN 38118

James Rowe
Planning Director
Wayne County Planning Department
224 E. Walnut Street
Goldsboro, NC 27530

James Trogdon
Transportation Secretary
North Carolina Department of Transportation
1501 Mail Service Center
Raleigh, NC 27699-1501

The Honorable Jim Perry
Senator
North Carolina General Assembly
300 N. Salisbury Street, Room 311
Raleigh, NC 27603

The Honorable John Szoka
Representative
North Carolina General Assembly
16 W. Jones Street, Room 2207
Raleigh, NC 27601-1096

The Honorable Jon Hardister
Majority Whip, Representative
North Carolina House of Representatives
300 N. Salisbury Street, Room 638
Raleigh, NC 27603-5925

Kate M. Daniels
Director
Wayne County Chamber of Commerce
308 N. William Street
Goldsboro, NC 27530

The Honorable Kathy Jensen
Mayor Pro Tem
City of Fayetteville
433 Hay Street
Fayetteville, NC 28301

The Honorable Kirk Deviere
Senator
North Carolina General Assembly
300 N. Salisbury Street, Room 515
Raleigh, NC 27603

Linda Rouse Sutton
Chairman
Lenoir County Commissioners
130 S. Queen Street
Kinston, NC 28502

Mark Humbert
Vice Chair, Board of Directors
Wayne County Soil & Water Conservation
3114 Wayne Memorial Drive, #158
Goldsboro, NC 27533

The Honorable Mark Meadows
US Congressman
US House of Representatives
2160 Rayburn HOB
Washington, D.C. 20515

The Honorable Mark R. Warner
Senator
US Senate
703 Hart Senate Office Building
Washington, D.C. 20510

The Honorable McKinley L. Price
Mayor
City of Newport News
2400 Washington Avenue, 10th Floor
Newport, VA 23607

Michael Abraczinskas
Director
North Carolina Division of Air Quality
217 W. Jones Street
Raleigh, NC 27603-1641

Michael James
County Manager
Lenoir County
130 S. Queen Street
Kinston, NC 28504

The Honorable Michael P. Mullin
State Delegate
Virginia General Assembly
566 Denbigh Boulevard, Suite C
Newport News, VA 23608

Michael S. Regan
Secretary of Department of Environmental Quality, NCDEQ
217 W. Jones Street
Raleigh, NC 27603

The Honorable Mitch Colvin
Mayor
City of Fayetteville
433 Hay Street
Fayetteville, NC 28301

Nora Theodore
USEPA, Reg III, Office of Environmental Programs
1650 Arch Street, 3EA30
Philadelphia, PA 19103

Samantha Beers
Director
USEPA, Reg III, Communities, Tribes, & EAs
1650 Arch Street (3RA10)
Philadelphia, PA 19103

Patrick W. Magnotta
FAA Assistant Manager
Airport Planning and Environmental Division
800 Independence Avenue, SW
Washington, DC 20591

The Honorable Ralph Hise
Deputy President Pro Tempore, Senator
North Carolina State Senate
300 N. Salisbury Street, Room 300-A
Raleigh, NC 27603

Rawls Howard
Director
Cumberland County Planning and Inspections Department
130 Gillespie Street
Fayetteville, NC 28301

The Honorable Raymond Smith
Representative
North Carolina General Assembly
16 W. Jones Street, Room 2223
Raleigh, NC 27601-1096

Raymond T. Fernald
VDGIF Environmental Services Section
7870 Villa Park Drive, Suite 400
Richmond, VA 23228

The Honorable Richard Burr
Senator
Russell Senate Office Building
217 Constitution Avenue NE
Washington, D.C. 20510

The Honorable Robert C. Scott
Representative
US House of Representatives
1201 Longworth Hob
Washington, D.C. 20515

The Honorable Roy Cooper
Governor
North Carolina Office of the Governor
20301 Mail Service Center
Raleigh, NC 27699-0301

The Honorable T. Montgomery "Monty" Mason
State Senator
Virginia General Assembly
1000 Bank Street in Capitol Square
Richmond, VA 23219

The Honorable Thom Tillis
Senator
US Senate
113 Dirksen Senate Building
Washington, D.C. 20510

The Honorable Tim Kaine
Senator
US Senate
231 Russell Senate Office Building
Washington, D.C. 20510

Tim Salmon
City Manager
City of Goldsboro
200 N. Center Street
Goldsboro, NC 27530

The Honorable Tina L. Vick
Vice Mayor
City of Newport News
2400 Washington Avenue, 10th Floor
Newport, VA 23607

Tom Ballou
VDEQ Air Data Analysis Program
629 E. Main Street, 8th Floor
Richmond, VA 23230

Tony Sears
City Manager
City of Kinston
207 E. King Street
Kinston, NC 28502

Tony Watkinson
VMRC Habitat Management Division
2600 Washington Avenue, 3rd Floor
Newport News, VA 23607

Vickie King
Clerk to the Board of Commissioners
Lenoir County Commissioners
130 S. Queen Street
Kinston, NC 28504

W. Marshall Faircloth
Chairman
Cumberland County Board of Commissioners
117 Dick Street, Room 561
Fayetteville, NC 28301

Berry Gray
Planning Director
Wayne County Planning Department
224 E Walnut Street
Goldsboro, NC 27530

Cindy Pendergraph
Reference Department Head
Wayne County Board of Commissioners
224 E Walnut Street
Goldsboro, NC 27530

J. Eric Boyette
Transportation Secretary
North Carolina Department of Transportation
1501 Mail Service Center
Raleigh, NC 27699-1501

Kevin Whitley
Director
Environmental Health Department
224 E Walnut Street
Goldsboro, NC 27530

Thomas Uzzell
Vice Chair, Board of Directors
Wayne County Soil & Water Conservation
404 Walnut Creek Drive
Goldsboro, NC 27534

Samantha Beers
Director
USEPA, Reg III, Communities, Tribes, & EAs
1650 Arch Street (3RA10)
Philadelphia, PA 19103

Coordination Letters

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
JOINT BASE LANGLEY-EUSTIS VA

HQ ACC/A4C
130 Douglas Street
Joint Base Langley-Eustis, VA 23665

Mr. Patrick Magnotta
Federal Aviation Administration
Airport Planning & Environmental Division (ARP-400)
800 Independence Avenue, S.W.
Washington, DC 20591

The Air Force is initiating an Environmental Assessment (EA) to evaluate the impacts of establishing dedicated contract Combat Air Forces (CAF) Adversary Air (ADAIR) support at Seymour Johnson Air Force Base (SJ AFB). Contract CAF ADAIR operations will be conducted from a civil airfield and are planning to begin during the April 2020 to March 2021 timeframe. The Air Force would like to request that the Federal Aviation Administration (FAA) formally participate as a Cooperating Agency in the preparation of the EA, as prescribed in the President's Council on Environmental Quality (CEQ) National Environmental Policy Act (NEPA) Regulations, 40 CFR Part 1501.6, *Cooperating Agencies*.

The Air Force asks for your participation as a cooperating agency in preparation of the EA as generally outlined in the steps below. To address the specific responsibilities of the Air Force as Lead Agency and FAA as Cooperating Agency, we request timely support with the following in completion of the EA:

(1) Sharing of baseline data and information to support the EA analysis;

(2) Reviewing the EA to ensure consistency and accuracy with ongoing FAA missions;

(3) Making staff support available to enhance interdisciplinary review capability, and correspondence; and

(4) Responding in writing to this request.

The Air Force requires the support of cooperating agencies be timely, to avoid unnecessary delays in the NEPA process. Should you or your staff have further questions regarding this memo, our point of contact is Ms. Grace E. Keesling, Air Force Civil Engineer Center NEPA Division, at [redacted] or [redacted].

KATZER.DEE.J.1153738854
Digitally signed by KATZER.DEE.J.1153738854
Date: 2019.10.04 13:54:53 -04'00'

DEE JAY KATZER, Colonel, USAF
Chief, Civil Engineer Division (ACC/A4C)

cc:
AFCEC/CZN
HAF/A4C
HAF/A3T
AFLOA/JACE (ACC)

Agile Combat Power

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

FEB 0 4 2020

MEMORANDUM FOR ALL INTERESTED GOVERNMENT AGENCIES, INDIVIDUALS, AND ORGANIZATIONS

FROM: Mr. Dennis G. Goodson, P.E.
Deputy Base Engineer
4th Civil Engineer Squadron
1095 Peterson Avenue
Seymour Johnson Air Force Base, NC 27531-2355

SUBJECT: Combat Air Forces Contract Adversary Air Support for Seymour Johnson Air Force Base, North Carolina

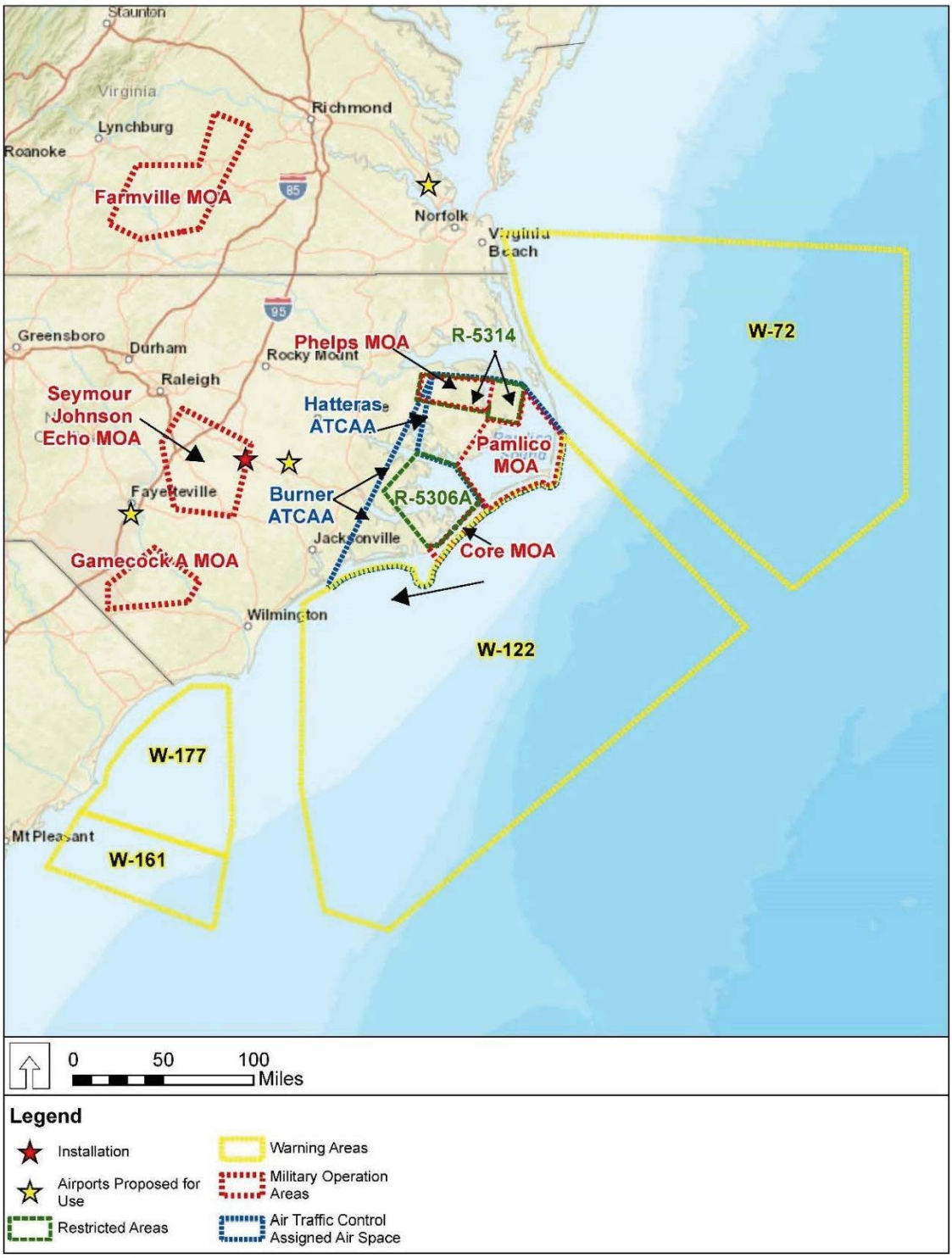
1. This memorandum is being sent in accordance with United States Air Force (Air Force) requirements for Interagency and Intergovernmental Coordination for Environmental Planning. The Air Force and Headquarters Air Combat Command have proposed to provide Combat Air Forces contract adversary air (ADAIR) support for Seymour Johnson Air Force Base (AFB), North Carolina, to address shortfalls in combat readiness. This will provide the capability and capacity to employ adversary tactics from basic fighter maneuvers to high-end, advance combat training missions. In accordance with the National Environmental Policy Act (NEPA) of 1969, the Council of Environmental Quality regulations, and Air Force NEPA regulations, Seymour Johnson AFB is in the process of preparing an Environmental Assessment to assess the potential environmental impacts of contract ADAIR support for Seymour Johnson AFB.

2. The Proposed Action is to contract the support of approximately 2,590 ADAIR sorties annually using 14 contractor-owned and contractor-operated aircraft. Contract ADAIR would support Seymour Johnson AFB training operating out of one of three potential regional airports: Kinston Regional Jetport (ISO), Fayetteville Regional Airport (FAY), and Newport News-Williamsburg International Airport (PHF). Aircraft would depart from airport runways, transit from the airport to military special use airspace, perform ADAIR training, transit back, and land at the airport. Training activities would use existing special use airspace near Seymour Johnson AFB (see attachment). Operations and maintenance facilities would be contracted by the service provider at the civilian airport to support the ADAIR mission.

3. Please provide comments or requests for additional information within 30 days of receipt to Ms. Cathryn Pesenti at 4 CES/CEIEA, 1095 Peterson Avenue, Seymour Johnson AFB, North Carolina 27531 or by electronic mail to cathryn.pesenti@us.af.mil. Thank you in advance for your consideration.

DENNIS G. GOODSON, P.E.

Attachment:
Special Use Airspace proposed for use by contract ADAIR training



Special Use Airspace proposed for use by contract ADAIR training

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

27 April 2020

MEMORANDUM FOR ALL INTERESTED GOVERNMENT AGENCIES, INDIVIDUALS, AND ORGANIZATIONS

FROM: Mr. Dennis G. Goodson, P.E.
Deputy Base Engineer
4th Civil Engineer Squadron
1095 Peterson Avenue
Seymour Johnson Air Force Base, NC 27531-2355

SUBJECT: Combat Air Forces Contract Adversary Air Support for Seymour Johnson Air Force Base, North Carolina

1. The United States Air Force (Air Force) has prepared a Draft Environmental Assessment (EA) and Proposed Finding of No Significant Impact (FONSI) evaluating the potential environmental impacts associated with the proposed Combat Air Forces contract adversary air (ADAIR) in support of Seymour Johnson Air Force Base (AFB), North Carolina. The Draft EA was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations implementing NEPA, and the Air Force NEPA regulations.

2. The Proposed Action is to contract the support of approximately 2,590 ADAIR sorties annually using 14 contractor-owned and contractor-operated aircraft. Contract ADAIR would support Seymour Johnson AFB training operating out of Kinston Regional Jetport (ISO). Aircraft would depart from the airport runway, transit from the airport to military special use airspace, perform ADAIR training, transit back, and land at the airport. Training activities would use existing special use airspace near Seymour Johnson AFB. Operations and maintenance facilities would be contracted by the service provider at ISO to support the ADAIR mission.

3. Executive Order 12372, *Intergovernmental Review of Federal Programs*, requires federal agencies to solicit federal agency as well as state and local government participation in the NEPA process. We are requesting your participation in the review and comment process. The Draft EA and the Proposed FONSI are available at https://www.seymourjohnson.af.mil/Home/SJAFB-Environmental-Management/. Please provide comments on the Draft EA and Proposed FONSI within 30 days of receipt of this memorandum to Cathryn Pesenti at 4 CES/CEIEA, 1095 Peterson Avenue, Seymour Johnson AFB, North Carolina 27531, by electronic mail to cathryn.pesenti@us.af.mil, or by phone at (919) 722-7455.

4. The Air Force is aware of the potential impact of the ongoing coronavirus (COVID-19) pandemic on the usual methods of access to information and ability to communicate, such as the mass closure of local public libraries and challenges with the sufficiency of an increasingly overburdened internet. The Air Force seeks to implement appropriate additional measures to ensure that all interested stakeholders

have the opportunity to participate fully in this EA process. Accordingly, please do not hesitate to contact us directly at the email address or telephone number provided above; we are available to discuss and help resolve issues involving access to the Draft EA and Proposed FONSI or the ability to comment.

GOODSON.DENNIS.G.1229806528 Digitally signed by GOODSON.DENNIS.G.1229806528 Date: 2020.04.27 14:45:08 -04'00'

DENNIS G. GOODSON, P.E.

From: PESENTI, CATHRYN M GS-12 USAF ACC 4 CES/CEIEA
Subject: Seymour Johnson AFB Draft Environmental Assessment for Contract Adversary Air
Date: Thursday, May 7, 2020 4:18:38 AM

Hello,

In consideration of the potential impact of the ongoing coronavirus (COVID-19) pandemic, please find below text from the notification of the availability of the Draft Environmental Assessment for Combat Air Forces contract adversary air support for Seymour Johnson Air Force Base, North Carolina that was sent to your mailing address this week. Please let me know if you have any comments, questions, or issues accessing the document.

Thank you,

CATHRYN PESENTI
Environmental Planner
Seymour Johnson Air Force Base

SUBJECT: Combat Air Forces Contract Adversary Air Support for Seymour Johnson Air Force Base, North Carolina

1. The United States Air Force (Air Force) has prepared a Draft Environmental Assessment (EA) and Proposed Finding of No Significant Impact (FONSI) evaluating the potential environmental impacts associated with the proposed Combat Air Forces contract adversary air (ADAIR) in support of Seymour Johnson Air Force Base (AFB), North Carolina. The Draft EA was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations implementing NEPA, and the Air Force NEPA regulations.

2. The Proposed Action is to contract the support of approximately 2,590 ADAIR sorties annually using 14 contractor-owned and contractor-operated aircraft. Contract ADAIR would support Seymour Johnson AFB training operating out of Kinston Regional Jetport (ISO). Aircraft would depart from the airport runway, transit from the airport to military special use airspace, perform ADAIR training, transit back, and land at the airport. Training activities would use existing special use airspace near Seymour Johnson AFB. Operations and maintenance facilities would be contracted by the service provider at ISO to support the ADAIR mission.

3. Executive Order 12372, *Intergovernmental Review of Federal Programs*, requires federal agencies to solicit federal agency as well as state and local government participation in the NEPA process. We are requesting your participation in the review and comment process. The Draft EA and the Proposed FONSI are available at https://www.seymourjohnson.af.mil/Home/SJAFB-Environmental-Management/. Please provide comments on the Draft EA and Proposed FONSI within 30 days of receipt of this memorandum to Cathryn Pesenti at 4 CES/CEIEA, 1095 Peterson Avenue, Seymour Johnson AFB, North Carolina 27531, by electronic mail to cathryn.pesenti@us.af.mil, or by phone at (919) 722-7455.

4. The Air Force is aware of the potential impact of the ongoing coronavirus (COVID-19) pandemic on the usual methods of access to information and ability to communicate, such as the mass closure of local public libraries and challenges with the sufficiency of an increasingly overburdened internet.

The Air Force seeks to implement appropriate additional measures to ensure that all interested stakeholders have the opportunity to participate fully in this EA process. Accordingly, please do not hesitate to contact us directly at the email address or telephone number provided above; we are available to discuss and help resolve issues involving access to the Draft EA and Proposed FONSI or the ability to comment.

From: [redacted]
To: [redacted]
Subject: CAF ADAIR Environmental Assessment Update - ISO
Date: Friday, May 8, 2020 7:56:44 AM

Good day,
We appreciate the FAA's support as a participating agency and the Kinston Regional Jetport for your time and input into the Air Force's Environmental Assessment (EA) for Combat Air Force (CAF) contract adversary air (ADAIR) in support of Seymour Johnson Air Force Base (AFB), North Carolina. As you know, in October 2019, the Air Force initiated the Environmental Impact Analysis Process to consider three civilian airports, including Kinston Regional Jetport at Stallings Field (ISO), Fayetteville Regional Airport (FAY), and Newport News-Williamsburg International Airport (PHF) to possibly host a contracted ADAIR service. Through careful consideration and preliminary examination of potential impacts to the environment and surrounding communities and in light of mission timelines, the Air Force has removed FAY and PHF from detailed analysis in the Draft EA due to be published in early May 2020. ISO will be carried forward for detailed analysis in the Draft EA. Once the public and interested stakeholders have had the opportunity to comment on the EA, final analysis will be completed. If a Finding of No Significant Impact (FONSI) is the eventual determination, the EA will be signed and would indicate the completion of this environmental analysis for CAF ADAIR at ISO, but does not indicate that ISO will be selected as the ADAIR operating location. That selection remains a decision for the awarded Contractor to ultimately make however additional analysis may be required along with subsequent Air Force approval.

In early May, the Air Force will begin notifying local, regional, state, and federal agencies and interested parties included on the Seymour Johnson AFB stakeholder list of the availability of the Draft EA. A notice of availability will be published in the Kinston Free Press and The Goldsboro News-Argus. Starting 9 May 2020, the document will be available at https://www.seymourjohnson.af.mil/Home/SJAFB-Environmental-Management/.

Please contact me with any questions or comments.

V/r,
Rob

ROBERT A. ANDERSON, PMP, NH-III, DAF
Program Manager, Combat Air Forces Contracted Air Support (CAF CAS)
HQ ACC AMIC, Langley AFB, VA
[redacted]
Acquisition Done Right – One Team, One Fight!

From: [redacted]
To:

Subject: CAF ADAIR Environmental Assessment Update - FAY
Date: Friday, May 8, 2020 7:57:44 AM

Good day,
We appreciate the FAA's support as a participating agency and the Fayetteville Regional Airport for your time and input into the Air Force's Environmental Assessment (EA) for Combat Air Force (CAF) contract adversary air (ADAIR) in support of Seymour Johnson Air Force Base (AFB), North Carolina. As you know, in October 2019, the Air Force initiated the Environmental Impact Analysis Process to consider three civilian airports, including Kinston Regional Jetport at Stallings Field (ISO), Fayetteville Regional Airport (FAY), and Newport News-Williamsburg International Airport (PHF) to possibly host a contracted ADAIR service. Through careful consideration and preliminary examination of potential impacts to the environment and surrounding communities and in light of mission timelines, the Air Force has removed FAY and PHF from detailed analysis in the Draft EA due to be published in early May 2020. ISO will be carried forward for detailed analysis in the Draft EA. Once the public and interested stakeholders have had the opportunity to comment on the EA, final analysis will be completed. If a Finding of No Significant Impact (FONSI) is the eventual determination, the EA will be signed and would indicate the completion of this environmental analysis for CAF ADAIR at ISO, but does not indicate that ISO will be selected as the ADAIR operating location. That selection remains a decision for the awarded Contractor to ultimately make however additional analysis may be required along with subsequent Air Force approval.

In early May, the Air Force will begin notifying local, regional, state, and federal agencies and interested parties included on the Seymour Johnson AFB stakeholder list of the availability of the Draft EA. A notice of availability will be published in the Kinston Free Press and The Goldsboro News-Argus. Starting 9 May 2020, the document will be available at https://www.seymourjohnson.af.mil/Home/SJAFB-Environmental-Management/.

Please contact me with any questions or comments.

V/r,
Rob

ROBERT A. ANDERSON, PMP, NH-III, DAF
Program Manager, Combat Air Forces Contracted Air Support (CAF CAS)
HQ ACC AMIC, Langley AFB, VA
[redacted]
Acquisition Done Right – One Team, One Fight!

From: [redacted]
To:

Subject: CAF ADAIR Environmental Assessment Update - PHF
Date: Friday, May 8, 2020 7:57:52 AM

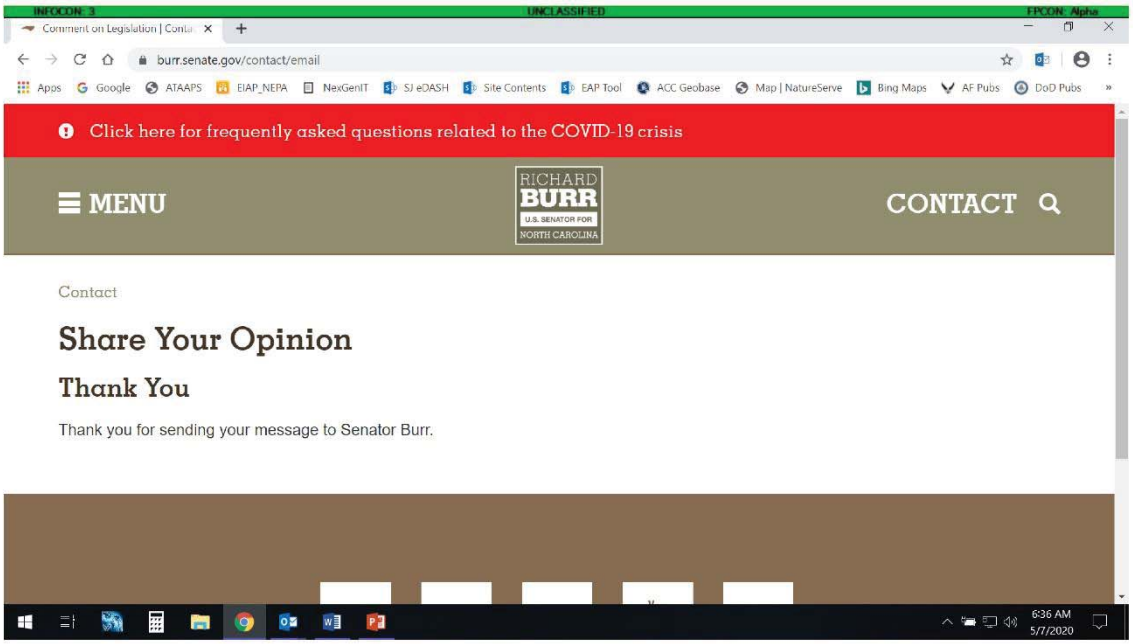
Good day,
We appreciate the FAA's support as a participating agency and the Newport News-Williamsburg International Airport for your time and input into the Air Force's Environmental Assessment (EA) for Combat Air Force (CAF) contract adversary air (ADAIR) in support of Seymour Johnson Air Force Base (AFB), North Carolina. As you know, in October 2019, the Air Force initiated the Environmental Impact Analysis Process to consider three civilian airports, including Kinston Regional Jetport at Stallings Field (ISO), Fayetteville Regional Airport (FAY), and Newport News-Williamsburg International Airport (PHF) to possibly host a contracted ADAIR service. Through careful consideration and preliminary examination of potential impacts to the environment and surrounding communities and in light of mission timelines, the Air Force has removed FAY and PHF from detailed analysis in the Draft EA due to be published in early May 2020. ISO will be carried forward for detailed analysis in the Draft EA. Once the public and interested stakeholders have had the opportunity to comment on the EA, final analysis will be completed. If a Finding of No Significant Impact (FONSI) is the eventual determination, the EA will be signed and would indicate the completion of this environmental analysis for CAF ADAIR at ISO, but does not indicate that ISO will be selected as the ADAIR operating location. That selection remains a decision for the awarded Contractor to ultimately make however additional analysis may be required along with subsequent Air Force approval.

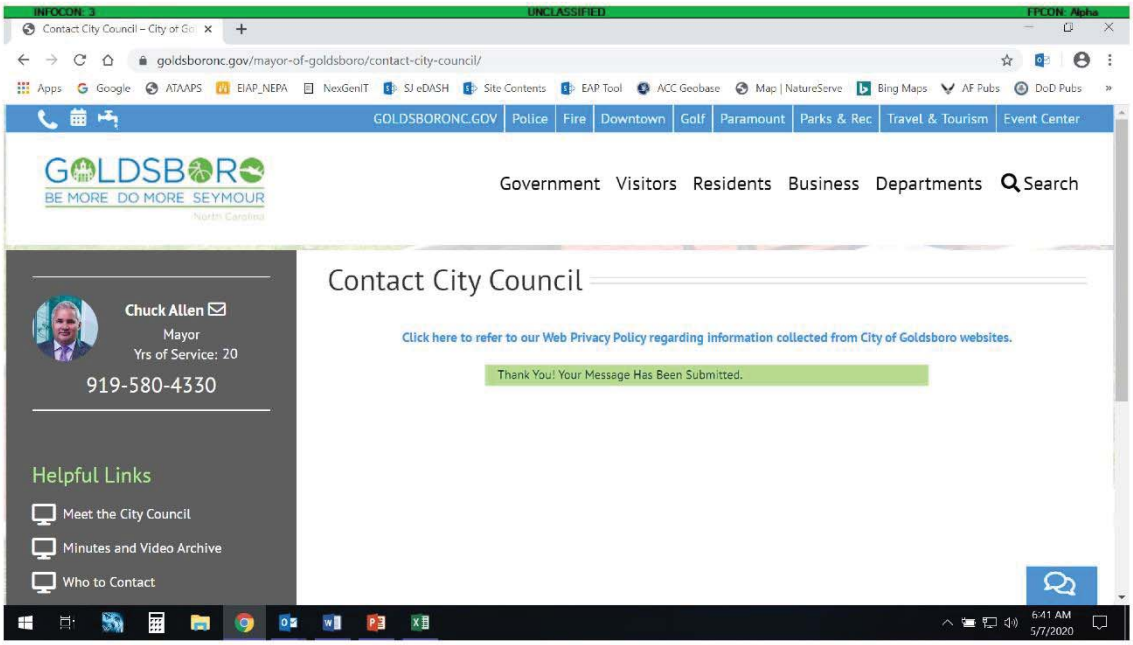
In early May, the Air Force will begin notifying local, regional, state, and federal agencies and interested parties included on the Seymour Johnson AFB stakeholder list of the availability of the Draft EA. A notice of availability will be published in the Kinston Free Press and The Goldsboro News-Argus. Starting 9 May 2020, the document will be available at https://www.seymourjohnson.af.mil/Home/SJAFB-Environmental-Management/.

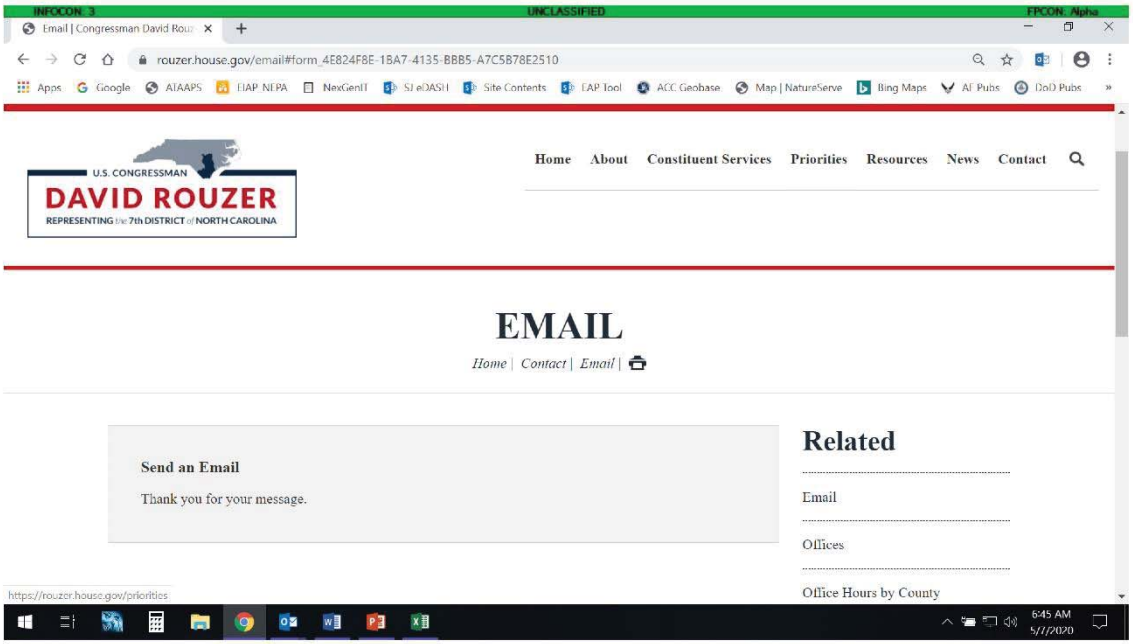
Please contact me with any questions or comments.

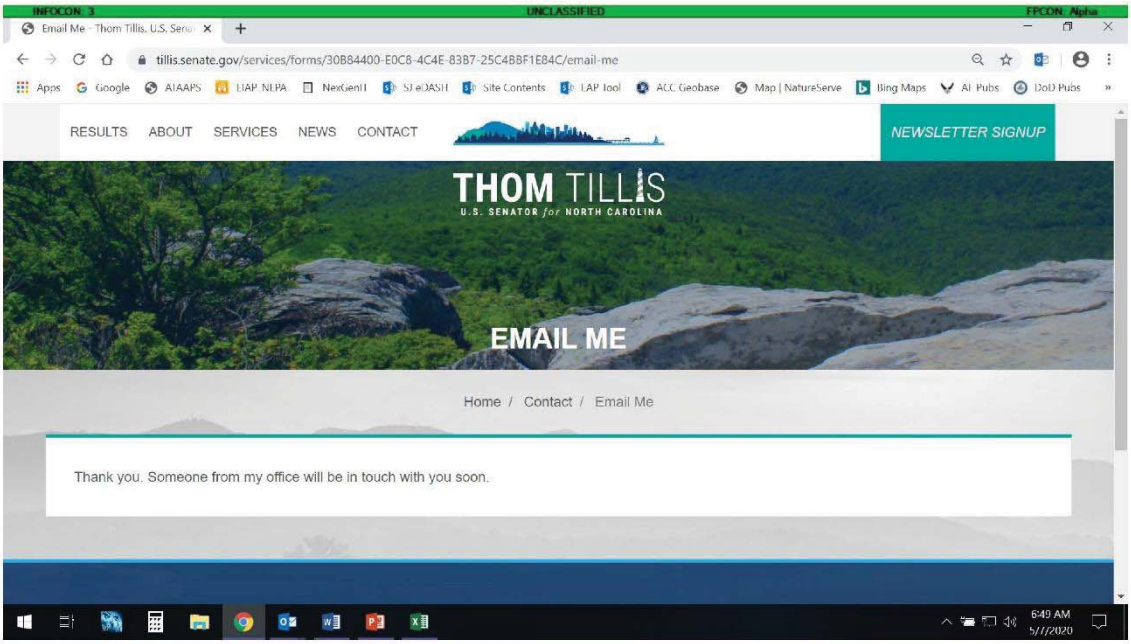
V/r,
Rob

ROBERT A. ANDERSON, PMP, NH-III, DAF
Program Manager, Combat Air Forces Contracted Air Support (CAF CAS)
HQ ACC AMIC, Langley AFB, VA
[redacted]
Acquisition Done Right – One Team, One Fight!


INFOCON: 3
UNCLASSIFIED
FPCON: Alpha
Comment on Legislation | Contac
burr.senate.gov/contact/email
Apps
Google
ATAAPS
EIAP_NEPA
NexGenIT
SJ eDASH
Site Contents
EAP Tool
ACC Geobase
Map | NatureServe
Bing Maps
AF Pubs
DoD Pubs
Click here for frequently asked questions related to the COVID-19 crisis
MENU
RICHARD
BURR
U.S. SENATOR FOR
NORTH CAROLINA
CONTACT
Contact
Share Your Opinion
Thank You
Thank you for sending your message to Senator Burr.
6:36 AM
5/7/2020


INFOCON: 3
UNCLASSIFIED
FPCON: Alpha
Contact City Council – City of Go
goldsboronc.gov/mayor-of-goldsboro/contact-city-council/
Apps
Google
ATAAPS
EIAP_NEPA
NexGenIT
SJ eDASH
Site Contents
EAP Tool
ACC Geobase
Map | NatureServe
Bing Maps
AF Pubs
DoD Pubs
GOLDSBORONC.GOV
Police
Fire
Downtown
Golf
Paramount
Parks & Rec
Travel & Tourism
Event Center
GOLDSBORO
BE MORE DO MORE SEYMOUR
North Carolina
Government
Visitors
Residents
Business
Departments
Search
Chuck Allen
Mayor
Yrs of Service: 20
919-580-4330
Helpful Links
Meet the City Council
Minutes and Video Archive
Who to Contact
Contact City Council
Click here to refer to our Web Privacy Policy regarding information collected from City of Goldsboro websites.
Thank You! Your Message Has Been Submitted.
6:41 AM
5/7/2020


INFOCON: 3
UNCLASSIFIED
FPCON: Alpha
Email | Congressman David Rouz
rouzer.house.gov/email#form_4E824F8E-1BA7-4135-BBB5-A7C5B78E2510
Apps
Google
AIAAPS
EIAP NEPA
NexGenIT
SJ eDASH
Site Contents
EAP Tool
ACC Geobase
Map | NatureServe
Bing Maps
AF Pubs
DoD Pubs
U.S. CONGRESSMAN
DAVID ROUZER
REPRESENTING the 7th DISTRICT of NORTH CAROLINA
Home
About
Constituent Services
Priorities
Resources
News
Contact
EMAIL
Home | Contact | Email |
Send an Email
Thank you for your message.
Related
Email
Offices
Office Hours by County
https://rouzer.house.gov/priorities
6:45 AM
5/7/2020


INFOCON: 3
UNCLASSIFIED
FPCON: Alpha
Email Me - Thom Tillis, U.S. Sena
tillis.senate.gov/services/forms/30B84400-E0C8-4C4E-83B7-25C4BBF1E84C/email-me
Apps
Google
AIAAPS
LIAP NLPA
NexGenIT
SJeDASH
Site Contents
LAP tool
ACC Geobase
Map | NatureServe
Bing Maps
AI Pubs
DoD Pubs
RESULTS
ABOUT
SERVICES
NEWS
CONTACT
NEWSLETTER SIGNUP
THOM TILLIS
U.S. SENATOR for NORTH CAROLINA
EMAIL ME
Home / Contact / Email Me
Thank you. Someone from my office will be in touch with you soon.
6:49 AM
5/7/2020

This page intentionally left blank

Responses

U.S. Department of Transportation
Federal Aviation Administration

Office of Airport Planning and Programming

800 Independence Ave, SW.
Washington, DC 20591

Colonel Dee Jay Katzer
Chief, Civil Engineer Division (A4C)
U.S. Air Force Air Combat Command
130 Douglas Street
Joint Base Langley-Eustis, VA 23665

Dear Colonel Katzer:

Thank you for your letter to the Federal Aviation Administration (FAA) about cooperating agency status for the Environmental Assessment (EA) for Combat Air Forces (CAF) Adversary Air (ADAIR) Support at Seymour Johnson Air Force Base.

The FAA is able to serve as a participating agency for this EA. We are unable to serve as a cooperating agency unless there is a federal action that requires FAA review. At this time, we are uncertain if there will be an action requiring FAA review.

As a participating agency, the FAA can:

1. Provide contact information for the civil airports to be analyzed in the EA.
2. Share baseline information to support the environmental analysis.
3. To provide information on FAA NEPA procedures for a potential future action.
4. In addition, because there may be operations originating from or ending at civil airports, we agree with the USAF's efforts to ensure the EA includes noise modeling that will support civil airport requirements.

We request the USAF send information on any proposed facilities at civil airfields, including their proposed locations. This will enable us to definitively determine if we have a federal action and should therefore serve as a cooperating agency.

Our point of contact for proposed sites in North Carolina is Ms. Jacqueline Sweatt-Essick, Regional Environmental Program Manager, Southern Region Airports Division, at [redacted] Our point of contact for proposed sites in Virginia is Mr. Andrew Brooks, Regional Environmental Program Manager, Eastern Region Airports Division, at [redacted]

Sincerely,

PATRICK W. MAGNOTTA
Digitally signed by PATRICK W. MAGNOTTA
Date: 2019.10.21 17:46:31 -04'00'

Patrick W. Magnotta
Assistant Manager
Airport Planning and
Environmental Division

Scott Walston

NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

COUNTY: WAYNE

G07: MILITARY ACTIVITES
(TRAINING, FLIGHT ROUTES,
BASE EXPANSIONS

STATE NUMBER: 20-E-0000-0172
DATE RECEIVED: 02/13/2020
AGENCY RESPONSE: 03/11/2020
REVIEW CLOSED: 03/16/2020

MS JEANNE STONE
CLEARINGHOUSE COORDINATOR
DEPT OF TRANSPORTATION
STATEWIDE PLANNING - MSC #1554
RALEIGH NC

REVIEW DISTRIBUTION

DEPT OF ENVIR. QUALITY - COASTAL MG
DEPT OF ENVIRONMENTAL QUALITY
DEPT OF NATURAL & CULTURAL RESOURCE
DEPT OF TRANSPORTATION
DNCR - NATURAL HERITAGE PROGRAM
DPS - DIV OF EMERGENCY MANAGEMENT
EASTERN CAROLINA COUNCIL

Transportation Planning Division
FEB 17 2020

PROJECT INFORMATION

APPLICANT: Dept. of the Air Force
TYPE: National Environmental Policy Act
Scoping

DESC: Proposed project is for the Combat Air Forces Contract Adversary Air Support for Seymour Johnson Air Force Base.

The attached project has been submitted to the N. C. State Clearinghouse for intergovernmental review. Please review and submit your response by the above indicated date to 1301 Mail Service Center, Raleigh NC 27699-1301.

If additional review time is needed, please contact this office at (919)807-2425.

AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED: ☑ NO COMMENT ☐ COMMENTS ATTACHED

SIGNED BY: [signature] DATE: 2/20/2020

NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

FEB 1 7 2020

COUNTY: WAYNE

G07: MILITARY ACTIVITES
(TRAINING, FLIGHT ROUTES,
BASE EXPANSIONS

STATE NUMBER: 20-E-0000-0172
DATE RECEIVED: 02/13/2020
AGENCY RESPONSE: 03/11/2020
REVIEW CLOSED: 03/16/2020

MS CINDY WILLIAMS
CLEARINGHOUSE COORDINATOR
DPS - DIV OF EMERGENCY MANAGEMENT
FLOODPLAIN MANAGEMENT PROGRAM
4218 MAIL SERVICE CENTER
RALEIGH NC

REVIEW DISTRIBUTION

DEPT OF ENVIR. QUALITY - COASTAL MG
DEPT OF ENVIRONMENTAL QUALITY
DEPT OF NATURAL & CULTURAL RESOURCE
DEPT OF TRANSPORTATION
DNCR - NATURAL HERITAGE PROGRAM
DPS - DIV OF EMERGENCY MANAGEMENT
EASTERN CAROLINA COUNCIL

PROJECT INFORMATION

APPLICANT: Dept. of the Air Force
TYPE: National Environmental Policy Act
Scoping

DESC: Proposed project is for the Combat Air Forces Contract Adversary Air Support for Seymour Johnson Air Force Base.

The attached project has been submitted to the N. C. State Clearinghouse for intergovernmental review. Please review and submit your response by the above indicated date to 1301 Mail Service Center, Raleigh NC 27699-1301.

If additional review time is needed, please contact this office at (919)807-2425.

AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED: [X] NO COMMENT [ ] COMMENTS ATTACHED

SIGNED BY: John D Burbaker DATE: 21 Feb 2020

From: State Clearinghouse <State.Clearinghouse@doa.nc.gov>
Sent: Wednesday, February 26, 2020 11:03 AM
To: PESENTI, CATHRYN M GS-12 USAF ACC 4 CES/CEIEA [redacted]
Subject: [Non-DoD Source] EMAIL NOTIFICATION: SCH# 20-E-0000-0172

Dear Ms. Pesenti,

This is a notification to you that the N.C. State Environmental Review Clearinghouse has received the *Combat Air Forces Contract Adversary Air Support for Seymour Johnson Air Force Base* project. This project has been assigned State Clearinghouse #20-E-0000-0172 and this number should be used in all inquiries or correspondence with this office.

Copies of the environmental document are being sent to various governmental organizations for review and comment. In addition, notification of the availability of the document will appear on the North Carolina Environmental Bulletin at http://www.doa.nc.gov/clearing/ebulletin.aspx.

The review of this project should be completed on **March 16, 2020.** After the review has concluded, the comments and signoff letter will be email to the email address used for this message. If you have an alternate email, please email it to me at State.Clearinghouse@doa.nc.gov.

Should you have any questions, please email State.Clearinghouse@doa.nc.gov

Thank you,

Crystal Best
Administrative Secretary
State Environmental Review Clearinghouse
North Carolina Department of Administration

[redacted] office
state.clearinghouse@doa.nc.gov

1301 Mail Service Center
Raleigh, North Carolina 27699-1301

Email correspondence to and from this address is subject to the North Carolina Public Records Law and may be disclosed to third parties.

Email correspondence to and from this address may be subject to the North Carolina Public Records Law and may be disclosed to third parties by an authorized state official.

1

From: Gissentanna, Larry [redacted]
Sent: Tuesday, March 3, 2020 9:49 AM
To: PESENTI, CATHRYN M GS-12 USAF ACC 4 CES/CEIEA [redacted]
Cc: Kajumba, Ntale [redacted] Buskey, Traci P. [redacted]
Subject: [Non-DoD Source] Scoping for The Combat Air Forces Contract Adversary Air Support for Seymour Johnson Air Force Base, NC

Dear Ms. Pesenti:

The EPA is in receipt of the scoping document on the Air Force and Headquarters Air-Combat Command proposal to provide adversary air (ADAIR) support for Seymour Johnson Air Force Base, North Carolina. This support will address shortfalls in combat readiness. The EPA understands that this proposed action to contract the support of 2,590 ADAIR sorties annually using 14 contractor-owned and contractor operated aircraft will support Seymour Johnson Air Force Base (AFB) from established nearby airports. Advanced combat training maneuvers will occur within established and existing special use airspace near Seymour Johnson AFB. The ADAIR support Operation and Maintenance facilities will be located at various supporting civilian airports.

Upon review of the documents provided to this office, it appears that this project will not have a significant impact to human health and the environment. However, the EPA requests that the NEPA document include the aircraft type/types that will be used in this training. Please note that any aircraft used for training should operate within military guidelines over developed areas, and operate at appropriate flight altitudes during the transition to the training areas. This will help alleviate/minimize potential noise hazards.

Thank you for the opportunity to provide early comments on your proposed project. Please provide this office one hard a copy of the draft and final NEPA document along with an electronic version. Please remember to keep the local community informed and involved throughout the project process through community meetings and through local and social media outlets. If you have any questions, feel free to contact me via the information provided below.

Thanks again.

Sincerely,

Larry O. Gissentanna

Project Manager, DoD & Federal Facilities

U.S. Environmental Protection Agency/ Region 4
Strategic Programs Office, NEPA Section
61 Forsyth Street, SW
Atlanta, GA 30303-8960
[redacted]

1

NORTH CAROLINA
Environmental Quality

ROY COOPER
Governor
MICHAEL S. REGAN
Secretary
MICHAEL SCOTT
Director

Date: March 3, 2020

To: Michael Scott, Director
Division of Waste Management

Through: Janet Macdonald
Inactive Hazardous Sites Branch – Special Projects Unit

From: Bonnie S. Ware
Inactive Hazardous Sites Branch

Subject: NEPA Project #20-0172, Dept. of the Air Force, Hertford County, North Carolina

The Superfund Section has reviewed the proximity of sites under its jurisdiction to the Dept. of the Air Force project. Proposed project is for the Combat Air Forces Contract Adversary Air Support for Seymour Johnson Air Force Base.

Two (2) sites were identified within one mile of Kinston Regional Jetport. Three (3) sites were identified within one mile of Fayetteville Regional Airport and Six (6) sites were identified within one mile of Seymour Johnson Air Force Base as shown on the attached report. The Superfund Section recommends that site files be reviewed to ensure that appropriate precautions are incorporated into any construction activities that encounter potentially contaminated soil or groundwater. Superfund Section files can be viewed at: http://deq.nc.gov/waste-management-laserfiche.

Please contact Janet Macdonald at [redacted] if you have any questions.

North Carolina Department of Environmental Quality | Division of Waste Management
217 West Jones Street | 1646 Mail Service Center | Raleigh, North Carolina 27699-1646
919 707 8200

3/3/2020

SEPA/NEPA Review Report

Area of Interest (AOI) Information

Area : 10,716.02 acres

Mar 3 2020 10:12:29 Eastern Standard Time

1/2

3/3/2020

20-0172 Kinston Regional Jetport, Lenoir County, Map 1 of 3

Summary

Name	Count	Area(acres)	Length(mi)
Certified DSCA Sites	0	N/A	N/A
Federal Remediation Branch Sites	0	N/A	N/A
Inactive Hazardous Sites	1	N/A	N/A
Pre-Regulatory Landfill Sites	0	N/A	N/A
Brownfields Program Sites	1	N/A	N/A

Inactive Hazardous Sites

#	EPAID	SITENAME	Count
1	NCN000407582	WEST PHARMACEUTICAL SERVCES	1

Brownfields Program Sites

#	BF_ID	BF_Name	Count
1	1104807054	West Pharmaceutical	1

2/2

3/3/2020

SEPA/NEPA Review Report

Area of Interest (AOI) Information

Area : 10,194.41 acres

Mar 3 2020 10:07:28 Eastern Standard Time

1/2

3/3/2020

20-0172 Fayetteville Regional Airport, Cumberland County, Map 2 of 3

Summary

Name	Count	Area(acres)	Length(mi)
Certified DSCA Sites	0	N/A	N/A
Federal Remediation Branch Sites	0	N/A	N/A
Inactive Hazardous Sites	2	N/A	N/A
Pre-Regulatory Landfill Sites	1	N/A	N/A
Brownfields Program Sites	0	N/A	N/A

Inactive Hazardous Sites

#	EPAID	SITENAME	Count
1	NONCD0002670	VEMCO MUSIC-LAKE LYNN	1
2	NONCD0001484	CHASON DIESEL INJECTION SERV.	1

Pre-Regulatory Landfill Sites

#	EPAID	SITENAME	Count
1	NONCD0000267	Fayetteville City LF	1

3/3/2020

SEPA/NEPA Review Report

Area of Interest (AOI) Information

Area : 12,662.71 acres

Mar 3 2020 10:19:08 Eastern Standard Time

1/2

3/3/2020

20-0172 Seymour Johnson Airforce Base, Cumberland County, Map 3 of 3

Summary

Name	Count	Area(acres)	Length(mi)
Certified DSCA Sites	2	N/A	N/A
Federal Remediation Branch Sites	1	N/A	N/A
Inactive Hazardous Sites	2	N/A	N/A
Pre-Regulatory Landfill Sites	0	N/A	N/A
Brownfields Program Sites	1	N/A	N/A

Certified DSCA Sites

#	Site_ID	Site_Name	Count
1	DC960002	Penny One Hour Cleaners and Laundry	1
2	DC960005	Terry One Hour Cleaners	1

Federal Remediation Branch Sites

#	SITE_ID	SITE_NAME	Count
1	NC9799F4837	SEYMOUR JOHNSON AFB	1

Inactive Hazardous Sites

#	EPAID	SITENAME	Count
1	NONCD0002421	ROHR CHEMICAL, INC.	1
2	NONCD0001558	DANIELS PROPERTY	1

Brownfields Program Sites

#	BF_ID	BF_Name	Count
1	1905315096	Point Five Goldsboro	1

State of North Carolina Department of Environmental Quality
INTERGOVERNMENTAL REVIEW PROJECT COMMENTS

Reviewing Regional Office: Washington
Project Number: 20-0172 Due Date: 03/11/2020
County: Wayne

After review of this project it has been determined that the DEQ permit(s) and/or approvals indicated may need to be obtained in order for this project to comply with North Carolina Law. Questions regarding these permits should be addressed to the Regional Office indicated on the reverse of the form. All applications, information and guidelines relative to these plans and permits are available from the same Regional Office.

	PERMITS	SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (statutory time limit)
☐	Permit to construct & operate wastewater treatment facilities, non-standard sewer system extensions & sewer systems that do not discharge into state surface waters.	Application 90 days before begins construction or award of construction contracts. On-site inspection may be required. Post-application technical conference usual.	30 days (90 days)
☐	Permit to construct & operate, sewer extensions involving gravity sewers, pump stations and force mains discharging into a sewer collection system	Fast-Track Permitting program consists of the submittal of an application and an engineer's certification that the project meets all applicable State rules and Division Minimum Design Criteria.	30 days (N/A)
☐	NPDES - permit to discharge into surface water and/or permit to operate and construct wastewater facilities discharging into state surface waters.	Application 180 days before begins activity. On-site inspection. Pre-application conference usual. Additionally, obtain permit to construct wastewater treatment facility-granted after NPDES. Reply time, 30 days after receipt of plans or issue of NPDES permit-whichever is later.	90-120 days (N/A)
☐	Water Use Permit	Pre-application technical conference usually necessary.	30 days (N/A)
☐	Well Construction Permit	Complete application must be received and permit issued prior to the installation of a groundwater monitoring well located on property not owned by the applicant, and for a large capacity (>100,000 gallons per day) water supply well.	7 days (15 days)
☐	Dredge and Fill Permit	Application copy must be served on each adjacent riparian property owner. On-site inspection. Pre-application conference usual. Filling may require Easement to Fill from N.C. Department of Administration and Federal Dredge and Fill Permit.	55 days (90 days)
☐	Permit to construct & operate Air Pollution Abatement facilities and/or Emission Sources as per 15 A NCAC (2Q.0100 thru 2Q.0300)	Application must be submitted and permit received prior to construction and operation of the source. If a permit is required in an area without local zoning, then there are additional requirements and timelines (2Q.0113).	90 days
☒	Any open burning associated with subject proposal must be in compliance with 15 A NCAC 2D.1900	N/A	60 days (90 days)
☒	Demolition or renovations of structures containing asbestos material must be in compliance with 15 A NCAC 20.1110 (a) (1) which requires notification and removal prior to demolition. Contact Asbestos Control Group 919-707-5950	Please Note - The Health Hazards Control Unit (HHCU) of the N.C. Department of Health and Human Services, must be notified of plans to demolish a building, including residences for commercial or Industrial expansion, even if no asbestos is present in the building.	60 days (90 days)
☒	The Sedimentation Pollution Control Act of 1973 must be properly addressed for any land disturbing activity. An erosion & sedimentation control plan will be required if one or more acres are to be disturbed. Plan must be filed with and approved by applicable Regional Office (Land Quality Section) at least 30 days before beginning activity. A NPDES Construction Stormwater permit (NCG010000) is also usually issued should design features meet minimum requirements. A fee of $65 for the first acre or any part of an acre. An express review option is available with additional fees.		20 days (30 days)
☐	Sedimentation and erosion control must be addressed in accordance with NCDOT's approved program. Particular attention should be given to design and installation of appropriate perimeter sediment trapping devices as well as stable Stormwater conveyances and outlets.		(30 days)
☐	Sedimentation and erosion control must be addressed in accordance with _____ Local Government's approved program. Particular attention should be given to design and installation of appropriate perimeter sediment trapping devices as well as stable Stormwater conveyances and outlets.		Based on Local Program
☐	Compliance with 15A NCAC 2H .0126 - NPDES Stormwater Program which regulates three types of activities: Industrial, Municipal Separate Storm Sewer System & Construction activities that disturb ≥1 acre.		30-60 days (90 days)
☐	Compliance with 15A NCAC 2H 1000 -State Stormwater Permitting Programs regulate site development and post-construction stormwater runoff control. Areas subject to these permit programs include all 20 coastal counties, and various other counties and watersheds throughout the state.		45 days (90 days)

DEQ INTERGOVERNMENTAL REVIEW PROJECT Form
January 2020/lbh

Page 1 of 1

State of North Carolina Department of Environmental Quality
INTERGOVERNMENTAL REVIEW PROJECT COMMENTS

Reviewing Regional Office: Washington
Project Number: 20-0172 Due Date: 03/11/2020
County: Wayne

	PERMITS	SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (statutory time limit)
☐	Mining Permit	On-site inspection usual. Surety bond filed with DEQ Bond amount varies with type mine and number of acres of affected land. Affected area greater than one acre must be permitted. The appropriate bond must be received before the permit can be issued.	30 days (60 days)
☐	Dam Safety Permit	If permit required, application 60 days before begin construction. Applicant must hire N.C. qualified engineer to: prepare plans, inspect construction, and certify construction is according to DEQ approved plans. May also require a permit under mosquito control program. And a 404 permit from Corps of Engineers. An inspection of site is necessary to verify Hazard Classification. A minimum fee of $200.00 must accompany the application. An additional processing fee based on a percentage or the total project cost will be required upon completion.	30 days (60 days)
☐	Oil Refining Facilities	N/A	90-120 days (N/A)
☐	Permit to drill exploratory oil or gas well	File surety bond of $5,000 with DEQ running to State of NC conditional that any well opened by drill operator shall, upon abandonment, be plugged according to DEQ rules and regulations.	10 days N/A
☐	Geophysical Exploration Permit	Application filed with DEQ at least 10 days prior to issue of permit. Application by letter. No standard application form.	10 days N/A
☐	State Lakes Construction Permit	Application fee based on structure size is charged. Must include descriptions & drawings of structure & proof of ownership of riparian property	15-20 days N/A
☐	401 Water Quality Certification	Compliance with the T15A 02H .0500 Certifications are required whenever construction or operation of facilities will result in a discharge into navigable water as described in 33 CFR part 323.	60 days (130 days)
☐	Compliance with Catawba, Goose Creek, Jordan Lake, Randleman, Tar Pamlico or Neuse Riparian Buffer Rules is required. Buffer requirements: http://deq.nc.gov/about/divisions/water-resources/water-resources-permits/wastewater-branch/401-wetlands-buffer-permits/401-riparian-buffer-protection-program		
☐	Nutrient Offset: Loading requirements for nitrogen and phosphorus in the Neuse and Tar-Pamlico River basins, and in the Jordan and Falls Lake watersheds, as part of the nutrient-management strategies in these areas. DWR nutrient offset information: http://deq.nc.gov/about/divisions/water-resources/planning/nonpoint-source-management/nutrient-offset-information		
☐	CAMA Permit for MAJOR development	$250.00 - $475.00 fee must accompany application	75 days (150 days)
☐	CAMA Permit for MINOR development	$100.00 fee must accompany application	22 days (25 days)
☐	Abandonment of any wells, if required must be in accordance with Title 15A. Subchapter 2C.0100.		
☐	Notification of the proper regional office is requested if "orphan" underground storage tanks (USTS) are discovered during any excavation operation.		
☐	Plans and specifications for the construction, expansion, or alteration of a public water system must be approved by the Division of Water Resources/Public Water Supply Section prior to the award of a contract or the initiation of construction as per 15A NCAC 18C .0300 et. seq., Plans and specifications should be submitted to 1634 Mail Service Center, Raleigh, North Carolina 27699-1634. All public water supply systems must comply with state and federal drinking water monitoring requirements. For more information, contact the Public Water Supply Section, (919) 707-9100.		30 days
☐	If existing water lines will be relocated during the construction, plans for the water line relocation must be submitted to the Division of Water Resources/Public Water Supply Section at 1634 Mail Service Center, Raleigh, North Carolina 27699-1634. For more information, contact the Public Water Supply Section, (919) 707-9100.		30 days
☐	Plans and specifications for the construction, expansion, or alteration of the _____ water system must be approved through the _____ delegated plan approval authority. Please contact them at _____ for further information.		

DEQ INTERGOVERNMENTAL REVIEW PROJECT Form
January 2020/lbh

Page 2 of 2

State of North Carolina Department of Environmental Quality
INTERGOVERNMENTAL REVIEW PROJECT COMMENTS

Reviewing Regional Office: Washington
Project Number: 20-0172 Due Date: 03/11/2020
County: Wayne

Other Comments (attach additional pages as necessary, being certain to comment authority)

Division	Initials	No comment	Comments	Date Review
DAQ	FDB	☒	No Comments	2/13/2020
DWR-WQROS (Aquifer & Surface)	&	☐	&	/ /
DWR-PWS	CWW	☒	N/A	2/14/2020
DEMLR (LQ & SW)	SD	☐	E&S required if any development proposed that will disturb more than one acre, Stormwater not required	2/17/2020
DWM – UST	SNH	☐	See attached comments	3/11/2020
Other Comments		☐		/ /

REGIONAL OFFICES
Questions regarding these permits should be addressed to the Regional Office marked below.

☐ **Asheville Regional Office**
2090 U.S. 70 Highway
Swannanoa, NC 28778-8211
Phone: 828-296-4500
Fax: 828-299-7043

☐ **Fayetteville Regional Office**
225 Green Street, Suite 714,
Fayetteville, NC 28301-5043
Phone: 910-433-3300
Fax: 910-486-0707

☐ **Mooresville Regional Office**
610 East Center Avenue, Suite 301,
Mooresville, NC 28115
Phone: 704-663-1699
Fax: 704-663-6040

☐ **Raleigh Regional Office**
3800 Barrett Drive,
Raleigh, NC 27609
Phone: 919-791-4200
Fax: 919-571-4718

☒ **Washington Regional Office**
943 Washington Square Mall,
Washington, NC 27889
Phone: 252-946-6481
Fax: 252-975-3716

☐ **Wilmington Regional Office**
127 Cardinal Drive Ext.,
Wilmington, NC 28405
Phone: 910-796-7215
Fax: 910-350-2004

☐ **Winston-Salem Regional Office**
450 Hanes Mill Road, Suite 300,
Winston-Salem, NC 27105
Phone: 336-776-9800
Fax: 336-776-9797

DEQ INTERGOVERNMENTAL REVIEW PROJECT Form
January 2020/lbh

Page 3 of 3

NORTH CAROLINA
Environmental Quality

ROY COOPER
Governor
MICHAEL S. REGAN
Secretary
MICHAEL SCOTT
Director

TO: Lyn Hardison, Environmental Coordinator

FROM: Sylvia Newsom-Hunneke, Regional UST Supervisor

COPY: Scott Bullock, Corrective Action Branch Head

COPY: Sharon Brinkley, Administrative Secretary

DATE: March 11, 2020

RE: Environmental Review – Project Number 20-0172 Proposed project is for the Combat Air Forces Contract Adversary Air Support for Seymour Johnson Air Force Base, Wayne County.

I searched the Petroleum Underground Storage Tank (UST) and Non-UST Petroleum Databases and review of those databases indicate a number of petroleum releases within Seymour Johnson Air Force Base and the Kinston Regional Jetport in Lenoir County. Please contact Pam Cade [redacted] to review these incident files. The following comments are pertinent to my review:

1. The Washington Regional Office (WaRO) UST Section recommends removal of any abandoned or out-of-use petroleum USTs or petroleum above ground storage tanks (ASTs) within the project area. The UST Section should be contacted regarding use of any proposed or on-site petroleum USTs or ASTs. We may be reached at (252) 946-6481.

2. Any petroleum USTs or ASTs must be installed and maintained in accordance with applicable local, state, and federal regulations. For additional information on petroleum ASTs it is advisable that the North Carolina Department of Insurance at (919) 661-5880 ext. 239, USEPA (404) 562-8761, local fire department, and Local Building Inspectors be contacted.

3. Any petroleum spills must be contained and the area of impact must be properly restored. Petroleum spills of significant quantity must be reported to the North Carolina Department of Environmental Quality – Division of Waste Management Underground Storage Tank Section in the Washington Regional Office at (252) 946-6481

4. Any soils excavated during demolition or construction that show evidence of petroleum contamination, such as stained soil, odors, or free product must be reported immediately to the local Fire Marshall to determine whether explosive or inhalation hazards exist. Also, notify the UST Section of the Washington Regional Office at (252) 946-6481. Petroleum contaminated soils must be handled in accordance with all applicable regulations.

5. Any questions or concerns regarding spills from petroleum USTs, ASTs, or vehicles should be directed to the UST Section at (252) 946-6481.

DEQ
North Carolina Department of Environmental Quality

North Carolina Department of Environmental Quality | Division of Waste Management
Washington Regional Office | 943 Washington Square Mall | Washington, North Carolina 27889
252.946.6481

From: PESENTI, CATHRYN M GS-12 USAF ACC 4 CES/CEIEA
Sent: Wednesday, April 15, 2020 10:39 AM
To: John Fisher [redacted]
Subject: Change to Combat Adversary Air in Support of Seymour Johnson AFB, NC (Project 20-042S)

Mr. Fisher,

Per our telephone conversation this morning, I am providing this notification of a change to the Consistency Determination that was submitted for Combat Adversary Air in Support of Seymour Johnson AFB (Project # 20-042S). The proposed action was modified and Patrick Henry Field is no longer an alternative being considered in the environmental analysis; however, the proposed use of Warning Area W-72, a portion of which is located off the VA coast, would remain the same as described in the Consistency Determination.

Please let me know if you need any additional information in order to complete the evaluation of this proposed action.

Thank you for your assistance in this matter.

Regards,

CATHRYN PESENTI, GS-12, DAF
Environmental Planner
4th Civil Engineer Squadron
Seymour Johnson Air Force Base
[redacted]

1

From: PESENTI, CATHRYN M GS-12 USAF ACC 4 CES/CEIEA
Sent: Thursday, April 16, 2020 6:11 AM
To: Govoni, Daniel [redacted]
Subject: Change to Combat Adversary Air in Support of Seymour Johnson AFB, NC

Mr. Govoni,

Per our telephone conversation yesterday afternoon, I am providing this notification of a change to the Consistency Determination that was submitted for Combat Adversary Air in Support of Seymour Johnson AFB. The proposed action was modified and Fayetteville is no longer an alternative being considered in the environmental analysis; however, the proposed use of Kinston and the airspace would remain the same as described in the Consistency Determination.

Please let me know if you need any additional information in order to complete the evaluation of this proposed action.

Thank you for your assistance in this matter.

Regards,

CATHRYN PESENTI, GS-12, DAF
Environmental Planner
4th Civil Engineer Squadron
Seymour Johnson Air Force Base
[redacted]

1

From: Richardson, Greg [redacted]
Sent: Thursday, May 7, 2020 10:18 AM
To: PESENTI, CATHRYN M GS-12 USAF ACC 4 CES/CEIEA [redacted]
Subject: [Non-DoD Source] RE: [External] Seymour Johnson AFB Draft Environmental Assessment for Contract Adversary Air

Dear Sir:

Please be advised that we have no comment with respect to this project.

Gregory Richardson, Executive Director, NC Commission of Indian Affairs

From: PESENTI, CATHRYN M GS-12 USAF ACC 4 CES/CEIEA [redacted]
Sent: Thursday, May 7, 2020 6:16 AM
Subject: [External] Seymour Johnson AFB Draft Environmental Assessment for Contract Adversary Air

Hello,
In consideration of the potential impact of the ongoing coronavirus (COVID-19) pandemic, please find below text from the notification of the availability of the Draft Environmental Assessment for Combat Air Forces contract adversary air support for Seymour Johnson Air Force Base, North Carolina that was sent to your mailing address this week. Please let me know if you have any comments, questions, or issues accessing the document.
Thank you,
CATHRYN PESENTI
Environmental Planner
Seymour Johnson Air Force Base

SUBJECT: Combat Air Forces Contract Adversary Air Support for Seymour Johnson Air Force Base, North Carolina

1. The United States Air Force (Air Force) has prepared a Draft Environmental Assessment (EA) and Proposed Finding of No Significant Impact (FONSI) evaluating the potential environmental impacts associated with the proposed Combat Air Forces contract adversary air (ADAIR) in support of Seymour Johnson Air Force Base (AFB), North Carolina. The Draft EA was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations implementing NEPA, and the Air Force NEPA regulations.

2. The Proposed Action is to contract the support of approximately 2,590 ADAIR sorties annually using 14 contractor-owned and contractor-operated aircraft. Contract ADAIR would support Seymour Johnson AFB training operating out of Kinston Regional Jetport (ISO). Aircraft would depart from the airport runway, transit from the airport to military special use airspace, perform ADAIR training, transit back, and land at the airport. Training activities would use existing special use airspace near Seymour Johnson AFB. Operations and maintenance facilities would be contracted by the service provider at ISO to support the ADAIR mission.

3. Executive Order 12372, *Intergovernmental Review of Federal Programs*, requires federal agencies to solicit federal agency as well as state and local government participation in the NEPA process. We are requesting your participation in the review and comment process. The Draft EA and the Proposed FONSI

are available at https://www.seymourjohnson.af.mil/Home/SJAFB-Environmental-Management/. Please provide comments on the Draft EA and Proposed FONSI within 30 days of receipt of this memorandum to Cathryn Pesenti at 4 CES/CEIEA, 1095 Peterson Avenue, Seymour Johnson AFB, North Carolina 27531, by electronic mail to [redacted]

4. The Air Force is aware of the potential impact of the ongoing coronavirus (COVID-19) pandemic on the usual methods of access to information and ability to communicate, such as the mass closure of local public libraries and challenges with the sufficiency of an increasingly overburdened internet.

The Air Force seeks to implement appropriate additional measures to ensure that all interested stakeholders have the opportunity to participate fully in this EA process. Accordingly, please do not hesitate to contact us directly at the email address or telephone number provided above; we are available to discuss and help resolve issues involving access to the Draft EA and Proposed FONSI or the ability to comment.

Email correspondence to and from this address may be subject to the North Carolina Public Records Law and may be disclosed to third parties by an authorized state official.

County of Lenoir

Board of Commissioners
Linda Rouse Sutton, Chairman
Roland Best, Vice Chairman
J. Mac Daughety
Reuben Davis
Preston Harris
Craig Hill
Eric Rouse

Lenoir County Courthouse
Post Office Box 3289
130 South Queen Street
Kinston, NC 28502

Telephone: (252) 559-6450
Fax: (252) 559-6454

Michael S. James, County Manager
Joey R. Bryan, Assistant County Manager
Vickie F. King, Clerk to the Board

May 12, 2020

Cathryn Pesenti
4 CES/CEIEA
1095 Peterson Avenue
Seymour Johnson AFB, North Carolina

Ms. Pesenti,

Please accept this correspondence on behalf of Lenoir County Government, in support of the Combat Air Forces Contract Adversary Air Support for Seymour Johnson Air Force Base, North Carolina.

The utilization of the North Carolina Global Transpark for this program is a great partnership between local, state and federal agencies. Our communities continue to support the United States Military and we have no concerns over the ADAIR program.

Best Regards,

Mike

Michael S. James
County Manager

WAYNE COUNTY
COUNTY MANAGER
CRAIG F. HONEYCUTT

WAYNECOUNTY
NORTH CAROLINA
Phone: (919) 731-1435
Fax (919) 731-1446

May 13, 2020

Dennis G. Goodson, GS-14 USAF ACC 4
Seymour Johnson Air Force Base
Goldsboro, NC

Dear Dennis,

On behalf of Wayne County, let me offer our full support for the new mission for the Base with the Combat Air Forces contract adversary air (ADAIR) in support of SJAFB. We feel that it will only enhance the bases mission even further, and make it truly the Air Force's best training base.

We understand that most of the support aircraft will operate out of Kinston Regional Jetport (ISO). We would however, like to offer our full support and facilities of the Wayne Executive JetPort for any additional services that you may need and that we can provide.

We truly value the relationship between the County and SJAFB, and please let us know of any way that we can help this new mission become a reality. We thank you and the leadership on base for your support of Wayne County.

Craig F. Honeycutt
Wayne County Manager

THE GOOD LIFE. GROWN HERE.

P.O.BOX 227
GOLDSBORO, NC 27533

From: Craig [redacted]
Sent: Wednesday, May 13, 2020 4:50 PM
To: GOODSON, DENNIS G GS-14 USAF ACC 4 CES/CD [redacted]
Subject: [Non-DoD Source] Letter of support from Wayne County - Combat Air Forces Contract Adversary Air Support for SJAFB

Dennis – if you need this as a hard copy please let me know.

May 13, 2020

Dear Dennis,

On behalf of Wayne County, let me offer our full support for the new mission for the Base with the Combat Air Forces contract adversary air (ADAIR) in support of SJAFB. We feel that it will only enhance the bases mission even further, and make it truly the Air Force's best training base.

We understand that most of the support aircraft will operate out of Kinston Regional Jetport (ISO). However, we would like to offer our full support and facilities of the Wayne Executive JetPort for any additional services that you may need and that we can provide.

We truly value the relationship between the County and SJAFB, and please let us know any way that we can help this new mission become a reality. We thank you and the leadership on base for your support of Wayne County.

Craig F. Honeycutt
County Manager
Wayne County
224 E. Walnut Street
Goldsboro, NC 27530

[redacted]

WAYNECOUNTY
NORTH CAROLINA

WAYNE COUNTY
•Chamber Of Commerce•

919-734-2241
919-734-2247
308 North William Street,
PO Box 1107 Goldsboro, NC 27530

May 18, 2020

Cathryn Pesenti
4 CES/CEIEA
1095 Peterson Avenue
Seymour Johnson AFB, North Carolina 27531

Dear Ms. Pesenti,

I am writing to you in support of the plan for the Adversary Air Facility at The Global Transpark. The ADAIR project not only provides increased training opportunities for the airmen at Seymour Johnson Air Force Base, but this project will further increase economic activity in the region.

The Global Transpark is the best host site, not only because of its location geographically, but the pipeline of talent in our region. The Wayne County Chamber of Commerce remains committed to connecting missions, opportunities and people for a stronger community and region, and the ADAIR project speaks to our collective goal and a stronger economic future.

Sincerely,

Kate M. Daniels
President, Wayne County Chamber of Commerce

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
Street address: 1111 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 1105, Richmond, Virginia 23218
www.deq.virginia.gov

Matthew J. Strickler
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4000
1-800-592-5482

May 21, 2020

Ms. Cathryn Pesenti
4 CES/CEIEA
1095 Peterson Avenue
Seymour Johnson AFB, North Carolina 27531
Via email: [redacted]

RE: Federal Consistency Determination for Combat Adversary Air Activities in Warning Area W-72 off the Southeast Virginia-North Carolina Coasts, U.S. Air Force at Seymour Johnson Air Force Base, North Carolina, DEQ 20-042F.

Dear Ms. Pesenti:

The Commonwealth of Virginia has completed its review of the Federal Consistency Determination (FCD) for the above-referenced project. The Department of Environmental Quality (DEQ) is responsible for coordinating Virginia's review of FCDs submitted under the Coastal Zone Management Act and responding to appropriate officials on behalf of the Commonwealth. This letter is in response to the FCD dated March 30, 2020 (received March 31, 2020) and the project amendment (attached) received April 15, 2020, submitted by the U.S. Air Force at Seymour Johnson Air Force Base, North Carolina. The following agencies, locality and planning district commission participated in this review:

Department of Environmental Quality
Department of Game and Inland Fisheries
Department of Conservation and Recreation
Marine Resources Commission
Department of Historic Resources
York County
Hampton Roads Planning District Commission

In addition, the Department of Aviation and City of Newport News were invited to comment on the proposal.

Combat Adversary Air Activities in Warning Area W-72
USAF FCD, DEQ 20-042F

PROJECT DESCRIPTION

The U.S. Department of the Air Force, 4th Fighter Wing at Seymour Johnson Air Force Base in North Carolina, proposes to conduct adversary air (ADAIR) operations in the airspace defined by Warning Area W-27 off the Virginia (Virginia Beach) and North Carolina coasts. The purpose of the Proposed Action is to provide ADAIR sorties to improve the quality of training and readiness of pilots of the 4th Fighter Wing at Seymour Johnson AFB. ADAIR would employ adversary tactics across the training spectrum from basic fighter maneuvers to higher-end, advanced, simulated, combat training missions, exposing F-15E pilots to more realistic air-to-air training. As originally proposed, the Air Force was also considering the Newport News-Williamsburg International Airport as the base for a contract ADAIR service provider to support Seymour Johnson AFB operations. However, the Newport News-Williamsburg International Airport has been eliminated from consideration by the Air Force.

PUBLIC PARTICIPATION

In accordance with Title 15, Code of Federal Regulations (CFR), §930.42, the public was invited to participate in the review of the FCD. Public notice of this Proposed Action was published in the OEIR Program Newsletter and on the DEQ website from April 17, 2020 through May 1, 2020. No public comments were received in response to the notice.

FEDERAL CONSISTENCY UNDER THE COASTAL ZONE MANAGEMENT ACT

Pursuant to the Coastal Zone Management Act of 1972 (CZMA), as amended, and the federal consistency regulations implementing the CZMA (15 CFR, Part 930, Subpart C, Section 930.30 *et seq.*), federal activities located inside or outside of Virginia's designated coastal management area that can have reasonably foreseeable effects on coastal resources or coastal uses must be implemented in a manner consistent, to the maximum extent practicable, with the Virginia Coastal Zone Management (CZM) Program. The Virginia CZM Program consists of a network of programs administered by several agencies. The DEQ coordinates the review of FCDs with agencies administering the enforceable and advisory policies of the Program.

FEDERAL CONSISTENCY CONCURRENCE

Based on our review of the consistency determination and the comments submitted by agencies administering the enforceable policies of the Virginia CZM Program, DEQ concurs that the Proposed Action is consistent to the maximum extent practicable with the Program provided all applicable permits and approvals are obtained as described below. If, prior to implementation, the Proposed Action should change significantly and any of the enforceable policies of the Virginia CZM Program would be affected, pursuant to 15 CFR, Part 930, Subpart C, §930.46(a), the Air Force must submit supplemental information to DEQ for review and approval. However, other state approvals which may apply to the Proposed Action are not included in this consistency

concurrence. Therefore, the applicant must ensure that the Proposed Action is conducted in accordance with all applicable federal, state and local laws and regulations.

FEDERAL CONSISTENCY ANALYSIS

According to the FCD and as modified by the amendment, the Proposed Action would have no effect on the following enforceable policies: subaqueous lands management, wetlands management, dunes management, nonpoint source pollution control, point source pollution control; shoreline sanitation, air pollution control, and coastal lands management. The agencies responsible for the administration of the enforceable policies of the Virginia CZM Program generally agree with the determination. The Air Force must ensure that the Proposed Action is consistent with the aforementioned policies. In addition, the FCD considers the effect of the proposal on the advisory policies of the Virginia CZM Program in accordance with 15 CFR §930.39(c) and finds the Proposed Action consistent with the advisory policies. The analysis which follows responds to the discussion of the enforceable policies of the Virginia CZM Program that apply to the proposal and review comments submitted by agencies that administer the enforceable policies.

1. Fisheries Management. According to the FCD (page 5), the increased use of chaff and flares increases the potential for plastics to end up in aquatic resources and the ocean. However, the amount and size of plastic material expended is small, and most would fall to the ocean floor at depths below which most fish species occur. In addition, while its use may have a minor adverse impact on fish species that are large enough to ingest plastic pieces that fall to the ocean floor on the small portion of the continental shelf that overlaps the boundary of the Warning Area, the likelihood of any large fish species encountering plastic caps from chaff and flares is extremely low. Due to the rare and infrequent nature of fuel dumps as well as in-place safety precautions such as altitude restrictions, these emergency procedures are not likely to adversely affect water resources.

1(a) Agency Jurisdiction. The fisheries management enforceable policy is administered by the Virginia Marine Resources Commission (VMRC) (Virginia Code §28.2-200 to §28.2-713) and the Department of Game and Inland Fisheries (DGIF) (Virginia Code §29.1-100 to §29.1-570). In addition, the Virginia Department of Health (VDH) Division of Shellfish Sanitation (DSS) is responsible for protecting the health of the consumers of molluscan shellfish and crustacea by ensuring that shellfish growing waters are properly classified for harvesting, and that molluscan shellfish and crustacea processing facilities meet sanitation standards.

Combat Adversary Air Activities in Warning Area W-72
USAF FCD, DEQ 20-042F

1(b) Agency Findings.

(i) Virginia Marine Resources Commission

VMRC finds that the resulting loss of residual plastic components into the Atlantic Ocean represents a potential hazard to marine resources and should be properly managed to reduce or eliminate risks to these species. As proposed, VMRC has no objection to the consistency finding, provided risks from marine plastics are managed to reduce or eliminate risks to fish species.

(ii) Department of Game and Inland Fisheries

DGIF does not anticipate the Proposed Action to result in significant adverse impacts upon fisheries resources under its jurisdiction based on the scope and location of the activities. As there are no impacts upon water resources and no ground-disturbing activities, DGIF finds the Proposed Action consistent with the fisheries management enforceable policy under its jurisdiction.

1(d) Conclusion. The Proposed Action is consistent to the maximum extent practicable with the fisheries management enforceable policy of the Virginia CZM Program.

For additional information regarding these comments, contact VMRC, Allison Lay at [redacted] DGIF, Amy Ewing at [redacted]

ADDITIONAL ENVIRONMENTAL CONSIDERATIONS

In addition to the enforceable policies of the Virginia CZM Program, comments were provided with respect to other applicable requirements and recommendations. The applicant must ensure that the Proposed Action is conducted in accordance with all applicable federal, state, and local laws and regulations.

1. Natural Heritage Resources.

1(a) Agency Jurisdiction.

(i) The Virginia Department of Conservation and Recreation (DCR) Division of Natural Heritage (DNH)

DNH's mission is conserving Virginia's biodiversity through inventory, protection and stewardship. The Virginia Natural Area Preserves Act (Virginia Code §10.1-209 through 217), authorizes DCR to maintain a statewide database for conservation planning and project review, protect land for the conservation of biodiversity, and the protect and ecologically manage the natural heritage resources of Virginia (the habitats of rare,

threatened and endangered species, significant natural communities, geologic sites, and other natural features).

(ii) Virginia Department of Agriculture and Consumer Services (VDACS)

The Endangered Plant and Insect Species Act of 1979 (Virginia Code Chapter 39 §3.1-1020 through 1030) authorizes VDACS to conserve, protect and manage endangered and threatened species of plants and insects. Under a Memorandum of Agreement established between VDACS and the DCR, DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species.

1(b) Agency Findings.

(i) Natural Heritage Resources

According to information currently in DCR's Biotics Data System (Biotics), natural heritage resources have not been documented within the project area including a 100 foot buffer. The absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks natural heritage resources. In addition, the project area does not intersect any of the predictive models identifying potential habitat for natural heritage resources.

(ii) State-listed Plant and Insect Species

DCR-DNH finds that the activity will not affect any documented state-listed plants or insects.

(iii) State Natural Area Preserves

DCR files do not indicate the presence of any State Natural Area Preserves under the agency's jurisdiction in the project vicinity.

1(c) Recommendation. Contact DCR-DNH, Rene Hypes at [redacted], to secure updated information on natural heritage resources if the scope of the project changes or six months pass before the project is implemented, since new and updated information is continually added to the Biotics Data System.

2. Wildlife Resources and Protected Species.

2(a) Agency Jurisdiction. The Virginia Department of Game and Inland Fisheries (DGIF), as the Commonwealth's wildlife and freshwater fish management agency, exercises enforcement and regulatory jurisdiction over wildlife and freshwater fish, including state- or federally-listed endangered or threatened species, but excluding listed insects (Virginia Code, Title 29.1). DGIF is a consulting agency under the U.S.

Combat Adversary Air Activities in Warning Area W-72
USAF FCD, DEQ 20-042F

Fish and Wildlife Coordination Act (16 U.S. Code §661 *et seq.*) and provides environmental analysis of projects or permit applications coordinated through DEQ and several other state and federal agencies. DGIF determines likely impacts upon fish and wildlife resources and habitat, and recommends appropriate measures to avoid, reduce or compensate for those impacts. For more information, see the DGIF website at www.dgif.virginia.gov.

2(b) Agency Findings. DGIF does not anticipate the Proposed Action to result in significant adverse impacts upon listed species or designated resources under its jurisdiction.

For additional information contact DGIF, Amy Ewing at [redacted]

3. Historic and Archaeological Resources.

3(a) Agency Jurisdiction. The Virginia Department of Historic Resources (DHR) conducts reviews of both federal and state projects to determine their effect on historic properties. Under the federal process, DHR is the State Historic Preservation Office (SHPO), and ensures that federal undertakings-including licenses, permits, or funding-comply with Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulation at 36 CFR Part 800. Section 106 requires federal agencies to consider the effects of federal projects on properties that are listed or eligible for listing on the National Register of Historic Places. Please see DHR's website for more information about applicable federal laws and how to submit an application for review: http://www.dhr.virginia.gov/StateStewardship/Index.htm.

3(b) Agency Findings. According to DHR, the Air Force completed consultation with DHR staff on the undertaking pursuant to Section 106 of the National Historic Preservation Act and its implementing regulation 36 CFR Part 800. No historic properties will be affected by the Proposed Action. No further identification efforts are warranted. Should unidentified historic properties be discovered, the Air Force must notify DHR.

For additional information, contact DHR, Marc Holma at [redacted]

4. Regional and Local Review.

4(a) Agency Jurisdiction. In accordance with CFR 930, Subpart A, § 930.6(b) of the Federal Consistency Regulations, DEQ, on behalf of the state, is responsible for securing necessary review and comment from other state agencies, the public, regional government agencies, and local government agencies, in determining the Commonwealth's concurrence or objection to a federal consistency certification.

Combat Adversary Air Activities in Warning Area W-72
USAF FCD, DEQ 20-042F

4(b) Agency Findings.

(i) Hampton Roads Planning District Commission

The Hampton Roads Planning District Commission (HRPDC) staff reviewed the FCD and coordinated with staff from the City of Newport News and York County. The Proposed Action appears to be consistent with local and regional plans and policies. HRPDC noted the potential for noise impacts to areas surrounding Newport News/Williamsburg International Airport from increased flights. (Note: the use of the airport for adversary air flights has been eliminated from consideration by the Air Force. Accordingly, existing noise impacts around the airport will not be affected).

(ii) York County

York County has no comments on the Proposed Action.

For additional information, contact HRPDC, Ben McFarlane at [redacted] or York County, Susan Kassel at [redacted].

Thank you for the opportunity to review and respond to the FCD for the Combat Adversary Air Activities in Warning Area W-72 off the Southeast Virginia-North Carolina Coasts. The detailed comments submitted by reviewing agencies are attached. Please contact me at [redacted] or John Fisher at [redacted] for clarification of these comments.

Sincerely,

Bettina Rayfield, Program Manager
Environmental Impact Review and Long-Range Priorities

Enclosures

Ec: Amy Ewing, DGIF
Robbie Rhur, DCR
Allison Lay, VMRC
Roger Kirchen, DHR
Scott Denny, DoAv
Susan Kassel, York County
Everett Skipper, City of Newport News
Ben McFarlane, HRPDC

7

Commonwealth of Virginia

Fisher, John [redacted]

Change to Combat Adversary Air in Support of Seymour Johnson AFB, NC (Project 20-042S)

1 message

PESENTI, CATHRYN M GS-12 USAF ACC 4 CES/CEIEA [redacted] Wed, Apr 15, 2020 at 10:38 AM
To: John Fisher [redacted]

Mr. Fisher,

Per our telephone conversation this morning, I am providing this notification of a change to the Consistency Determination that was submitted for Combat Adversary Air in Support of Seymour Johnson AFB (Project # 20-042S). The proposed action was modified and Patrick Henry Field is no longer an alternative being considered in the environmental analysis; however, the proposed use of Warning Area W-72, a portion of which is located off the VA coast, would remain the same as described in the Consistency Determination.

Please let me know if you need any additional information in order to complete the evaluation of this proposed action.

Thank you for your assistance in this matter.

Regards,

CATHRYN PESENTI, GS-12, DAF

Environmental Planner

4th Civil Engineer Squadron

Seymour Johnson Air Force Base

[redacted]

Commonwealth of Virginia

Fisher, John [redacted]

ESSLog# 40499_20-042F_CombatSdversary_DGIF_AME20200429
1 message

Ewing, Amy [redacted] Thu, Apr 30, 2020 at 2:28 PM
To: John Fisher [redacted]

John,
We have reviewed the subject project. Based on the scope and location of the proposed project, we do not anticipate it to result in significant adverse impacts upon listed species or designated resources under our jurisdiction.

As there are no impacts upon water resources and no ground disturbing activities, we find this project consistent with the Fisheries Enforceable Policy of the CZMA.

Thanks!

Amy

Amy Ewing
Environmental Services Biologist
Manager, Fish and Wildlife Information Services
[redacted]
Virginia Department of Game & Inland Fisheries
CONSERVE. CONNECT. PROTECT.
7870 Villa Park Drive, P.O. Box 90778, Henrico, VA 23228
www.dgif.virginia.gov

COMMONWEALTH of VIRGINIA

Department of Historic Resources

Matt Strickler
Secretary of Natural Resources

2801 Kensington Avenue, Richmond, Virginia 23221

Julie V. Langan
Director

Tel: (804) 367-2323
Fax: (804) 367-2391
www.dhr.virginia.gov

MEMORANDUM

DATE: 19 May 2020 **DHR File #** 2020-0260
DEQ File # 20-042F

TO: Mr. Dennis G. Goodson
Air Force

FROM: Marc E. Holma, Architectural Historian [redacted]
Office of Review and Compliance

PROJECT: Combat Adversary Air at Newport News-Williamsburg International Airport
City of Newport News and York County, Virginia

___ This project will have an effect on historic resources. Based on the information provided, the effect will not be adverse.

___ This project will have an adverse effect on historic properties. Further consultation with DHR is needed under Section 106 of the NHPA.

___ Additional information is needed before we will be able to determine the effect of the project on historic resources. **Please see below.**

__X__ No further identification efforts are warranted. No historic properties will be affected by the project. Should unidentified historic properties be discovered during implementation of the project, please notify DHR.

___ We have previously reviewed this project. Attached is a copy of our correspondence.

___ Other (Please see comments below)

COMMENTS: **C: Mr. John Fisher, DEQ**

Administrative Services
10 Courthouse Ave.
Petersburg, VA 23803
Tel: (804) 862-6408
Fax: (804) 862-6196

Eastern Region Office
2801 Kensington Avenue
Richmond, VA 23221
Tel: (804) 367-2323
Fax: (804) 367-2391

Western Region Office
962 Kime Lane
Salem, VA 24153
Tel: (540) 387-5443
Fax: (540) 387-5446

Northern Region Office
5357 Main Street
PO Box 519
Stephens City, VA 22655
Tel: (540) 868-7029
Fax: (540) 868-7033

COMMONWEALTH of VIRGINIA

Marine Resources Commission
380 Fenwick Road
Bldg 96
Fort Monroe, VA 23651-1064

Matthew J. Strickler
Secretary of Natural Resources

Steven G. Bowman
Commissioner

April 24, 2020

Department of Environmental Quality
Attn: John Fisher
1111 East Main St.
Richmond, VA 23219

Re: Federal Consistency Determination
Combat Adversary Air in Support of Seymour Johnson
Air Force Base, North Carolina, DEQ #20-042F

Dear Mr. Fisher:

This will respond to the request for comments regarding the Federal Consistency Determination for the Combat Adversary Air in Support of Seymour Johnson Air Force Base, North Carolina project (DEQ #20-042F), prepared by the United States Air Force. Specifically, the Air Force has proposed to provide air sortie training in offshore Warning Areas located off the southeast Virginia coastline which may result in small plastic components landing on the surface of the Atlantic Ocean.

Please be advised that the Virginia Marine Resources Commission (VMRC) pursuant to Chapter 12, 13, & 14 of Title 28.2 of the Code of Virginia administers permits required for submerged lands, tidal wetlands, and beaches and dunes. The VMRC administers the enforceable policies of fisheries management, subaqueous lands, tidal wetlands, and coastal primary sand dunes and beaches which comprise some of Virginia's Coastal Zone Management Program. VMRC staff has reviewed the submittal and offers the following comments:

Fisheries and Shellfish: The resulting loss of residual plastic components into the Atlantic Ocean represents a potential hazard to marine resources and should be properly managed to reduce or eliminate risks to these species.

State-Owned Submerged Lands: The resulting loss of residual plastic components into the Atlantic Ocean represents a potential hazard to marine resources and should be properly managed to reduce or eliminate risks to these species.

Tidal Wetlands: None in close proximity to the project area.

Beaches and Coastal Primary Sand Dunes: None in close proximity to the project area.

As proposed, we have no objection to the consistency findings provided by the applicant, but reiterate our caution about marine plastics. Should the proposed project change, a new review by this agency may be required relative to these jurisdictional areas.

An Agency of the Natural Resources Secretariat
www.mrc.virginia.gov
Telephone (757) 247-2200 (757) 247-2292 V/TDD Information and Emergency Hotline 1-800-541-4646 V/TDD

Department of Environmental Quality
April 24, 2020
Page Two

If you have any questions please contact me at [redacted] or by email at [redacted]. Thank you for the opportunity to comment.

Sincerely,

Allison Lay

Allison Lay
Environmental Engineer, Habitat Management

AEL
HM

Matthew J. Strickler
Secretary of Natural Resources

Clyde E. Cristman
Director



Rochelle Altholz
Deputy Director of Administration and Finance

Russell W. Baxter
Deputy Director of Soil and Water Conservation and Dam Safety

Thomas L. Smith
Deputy Director of Operations

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

MEMORANDUM

DATE: April 28, 2020

TO: John Fisher, DEQ-Central Office

FROM: Tyler Meader, DCR-DNH

SUBJECT: DEQ 20-042F, Combat Adversary Air at Newport News-Williamsburg International Airport
Due April 29, 2020

The Department of Conservation and Recreation's Division of Natural Heritage (DCR) has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

According to the information currently in Biotics, natural heritage resources have not been documented within the submitted project boundary including a 100 foot buffer. The absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks natural heritage resources. In addition, the project boundary does not intersect any of the predictive models identifying potential habitat for natural heritage resources.

There are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the DCR, DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. The current activity will not affect any documented state-listed plants or insects.

New and updated information is continually added to Biotics. Please re-submit project information and map for an update on this natural heritage information if the scope of the project changes and/or six months has passed before it is utilized.

The Virginia Department of Game and Inland Fisheries (VDGIF) maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters that may contain information not documented in this letter. Their database may be accessed from http://vafwis.org/fwis/ or contact Ernie Aschenbach at [redacted]

Thank you for the opportunity to comment on this project.

600 East Main Street, 24th Floor | Richmond, Virginia 23219 | 804-786-6124

State Parks • Soil and Water Conservation • Outdoor Recreation Planning
Natural Heritage • Dam Safety and Floodplain Management • Land Conservation

DEPARTMENT OF ENVIRONMENTAL QUALITY
TIDEWATER REGIONAL OFFICE

Environmental Impact Review
Coordination Review

To: Valerie A. Fulcher, Office of Environmental Impact Review

From: Craig Nicol, Regional Director

Date: April 22, 2020

Project: Air Force Combat Adversary Air DEQ#20-042F

As requested, the DEQ Tidewater Regional Office has reviewed the supplied information and offers the following comments:

Air Compliance Program:
No comments.
For additional information, contact John Brandt, DEQ-TRO at [redacted]

Land Program (Solid and Hazardous Waste):
No comments.
For additional information, contact Sean Priest, DEQ-TRO at [redacted].

Stormwater:
No comments.

Virginia Water Protection Permit Program (VWPP):
No comments.
For additional information, contact Jeff Hannah, DEQ-TRO at [redacted]

Water Permit Program (VPDES):
No comments.
For additional information, contact Janet Weyland, DEQ-TRO at [redacted]

Petroleum Storage Tank Program:
No comments.
Please contact Tom Madigan of the DEQ Tidewater Regional Office [redacted] for additional details.

Based on the submitted information, it appears the proposed project will result in a *[Level of impact]* environmental impact.

Commonwealth of Virginia

Fisher, John [redacted]

RE: NEW PROJECT Air Force Combat Adversary Air at NN-Wmsbrg International Airport, DEQ #20-042F

1 message

Ben McFarlane [redacted] Tue, Apr 7, 2020 at 5:39 PM
To: "John.Fisher@deq.virginia.gov" [redacted]
Cc: Everett Skipper [redacted] com>, "Kassel, Susan" [redacted], Cynthia Mulkey [redacted]

Mr. Fisher,

The HRPDC staff has reviewed the federal consistency determination for this project and coordinated with staff from the City of Newport News and York County. The proposed project appears to be consistent with local and regional plans and policies. We note the potential for noise impacts to areas surrounding Newport News/Williamsburg International Airport from increased flights. Although there is not an enforceable policy under Virginia's Coastal Zone Management Program addressing noise, we recommend that the Air Force coordinate with both cities during the Environmental Assessment process to determine the scope of any impacts and identify appropriate mitigation strategies if necessary.

We appreciate the opportunity to comment on this project. If you have any questions, please let me know.

Ben

Benjamin J. McFarlane, AICP, CFM

Senior Regional Planner

Hampton Roads Planning District Commission

723 Woodlake Drive

Chesapeake, VA 23320

Phone: [redacted] | Fax: 757-420-9300

All email correspondence to and from this address is subject to the Virginia Freedom of Information Act and to the Virginia Public Records Act, which may result in monitoring and disclosure to third parties, including law enforcement.

Commonwealth of Virginia

Fisher, John [redacted]

DEQ #20-042F

1 message

Kassel, Susan [redacted] Mon, Apr 6, 2020 at 4:42 PM
To: [redacted]

Mr. Fisher:

Regarding:

Document Type: Federal Consistency Determination
Project Sponsor: Department of Defense/U.S. Air Force
Project Title: Combat Adversary Air at Newport News-Williamsburg International Airport, Virginia in Support of Seymour Johnson Air Force Base, North Carolina
Location: City of Newport News, York County
Project Number: DEQ #20-042F

York County has no comments on the project.

Thank you for the opportunity to review.

Kind Regards,

Susan Kassel
Director of Planning and Development Services
County of York, VA

KINSTON-LENOIR COUNTY
CHAMBER of COMMERCE

May 27, 2020

Cathryn Pesenti
4CES/CEIEA
Seymour Johnson AFB NC 27531

Dear Ms. Pesenti,

I am writing you in support of the Adversary Air Facility at the Global Transpark here in Kinston and Lenoir County. The Kinston-Lenoir County Chamber of Commerce believes this project fits closely with the cluster of other aviation projects at the GTP. We strongly believe the training opportunities and the increased traffic of airmen and contractors with this project will assist in the continued development of our local economy. We believe supporting our regional partner at Seymour Johnson AFB not only improves our regional connections but helps us be a part of strengthening our nation's military.

The Global Transpark facility with its central location in Eastern North Carolina and its extended runway systems provide an outstanding training facility to enhance our regional talent. Kinston-Lenoir County Chamber of Commerce supports this project and believes it adds significant value to our community, region, and nation.

Sincerely,

Craig Hill
Executive Director

301 North Queen Street * PO Box 157 * Kinston, NC 28501 * (252) 527-1131
www.kinstonchamber.com
Expand your Opportunity

WAYNE COUNTY
•Chamber Of Commerce•
Friends of Seymour Johnson AFB

919-734-2241
919-734-2247
308 North William Street,
PO Box 1107 Goldsboro, NC 27530

May 28, 2020

Cathryn Pesenti
4 CES/CEIEA
1095 Peterson Avenue
Seymour Johnson AFB, North Carolina 27531

Dear Ms. Pesenti,

As Chairman of Friends of Seymour Johnson, I wanted to let you know that we are in total support of the proposed plan to locate the Adversary Air Facility at the Global Transpark. Having this mission located at the Transpark is great news for all of Eastern North Carolina. This project will provide more training opportunities for Seymour Johnson, additional economic growth for Kinston and Lenoir County as well as creating good paying jobs for our civilian population and those professionals who are separating from the Air Force.

If there is anything that Friends of Seymour Johnson can provide to you to assist with this proposal, please don't hesitate to let me know.

Sincerely,

Jimmie L. Edmundson

Jimmie L. Edmundson
Chairman, Friends of Seymour Johnson

www.WAYNECOUNTYCHAMBER.com

WARREN, KERR, WALSTON, TAYLOR & SMITH, L.L.P.
ATTORNEYS AND COUNSELLORS AT LAW
117 ORMOND AVENUE
POST OFFICE BOX 1616
GOLDSBORO, N.C. 27533-1616

JOHN TURNER WALSTON
L.E. (TREY) TAYLOR III
HENRY C. SMITH

W. FRANK TAYLOR (1889-1977)
W. R. ALLEN (1896-1971)
LINDSAY C. WARREN, JR. (1924-2016)
JOHN H. KERR, III (1936-2015)

TELEPHONE (919) 734-1841
FACSIMILE (919) 734-4215

May 29, 2020

Cathryn Pesenti
4 CES/CEIEA
1095 Peterson Avenue
Seymour Johnson AFB, North Carolina 27531

Dear Ms. Pesenti:

I am writing in support of the proposal to select the Global Transpark in Kinston as a base of operations for a civilian Adversary Air unit to help train pilots at bases in the vicinity. As background, I have spent more than 30 years supporting Seymour Johnson Air Force Base in the local community. Though I admittedly never served personally, I have formed closed bonds with dozens if not hundreds of Air Force personnel, including active duty, reservists and civilian employees. I have advocated at both Langley Air Force Base and Washington, DC on behalf of Seymour Johnson, and I serve on the ACC Commander's Civic Leader Group.

Based on all of my knowledge and experiences, I firmly believe we owe it to the young men and women training and preparing for conflict at Seymour Johnson Air Force Base to provide the most realistic training experience possible. The only way this country can retain its position as the most powerful military in the world is to continue to improve the skills of our military. As our near peer adversaries improve their own ability to produce equipment and technologies that mimic and sometimes exceed our own, the only way we can remain superior is to provide better motivated, better-disciplined and better-trained forces to employ our weapons. With Seymour Johnson Air Force Base's history of providing critical air support to most every conflict in modern history, providing this adversary air operation at the geographically proximate location in Kinston is a wonderful idea. North Carolina's Global Transpark in Kinston provides a great runway, low air traffic and ready built facilities to help smooth and speed the process of establishing these operations quickly and efficiently and provide a great location from which to support training for years to come. While the Global Transpark concept was designed around manufacturing, (which has never been fully realized), the use of the facilities for Adversary Air Operations is a great alternative, and will provide a much-needed economic boost to this region of the State. I whole-heartedly support the proposal and look forward to seeing this project get off the ground.

Sincerely,

Henry C. Smith

June 2, 2020

Cathryn Pesenti
4 CES/CEIEA
1095 Peterson Avenue
Seymour Johnson AFB, North Carolina 27531

Dear Ms. Pesenti,

For nearly seven decades, the Wayne County Chamber of Commerce's Military Affairs Committee (MAC) has been committed to maintaining and improving our community's relationship with Seymour Johnson Air Force Base. With nearly 130 MAC Members today, our collective efforts to ensure that Seymour Johnson Air Force Base remains the 'Crown Jewel' of the Air Force is stronger than ever.

The Military Affairs Committee is in full support of the ADAIR Project and the location site of The Global Transpark. The ability to further train and its centralized location makes The Global Transpark the ideal location to further train our military. We are confident that our community and our neighboring communities will be welcoming and supportive of this mission.

Sincerely,

Jeremiah Daniels
Military Affairs Committee Chairman
Wayne County Chamber of Commerce
[redacted]

Wayne County Chamber of Commerce
308 North William Street * Goldsboro * NC 27533 * (919) 734-2241
www.waynecountychamber.com

STATE OF NORTH CAROLINA
DEPARTMENT OF ADMINISTRATION

ROY COOPER
GOVERNOR

MACHELLE SANDERS
SECRETARY

June 10, 2020

Ms. Cathy Pesenti
Dept. of the Air Force
4 CES/CEV
1095 Peterson Avenue
Seymour Johnson AFB, North Carolina 27531-2355

Re: SCH File # 20-E-0000-0251; Proposed project is for the Combat Air Forces Contract Adversary Air Support for Seymour Johnson Air Force Base.

Dear Ms. Pesenti:

The above referenced environmental impact information has been submitted to the State Clearinghouse under the provisions of the National Environmental Policy Act. According to G.S. 113A-10, when a state agency is required to prepare an environmental document under the provisions of federal law, the environmental document meets the provisions of the State Environmental Policy Act. Attached to this letter for your consideration are comments made by the agencies in the review of this document.

If any further environmental review documents are prepared for this project, they should be forwarded to this office for intergovernmental review.

Should you have any questions, please do not hesitate to call.

Sincerely,

Crystal Best

Crystal Best
State Environmental Review Clearinghouse

Attachments
cc: Region P

Mailing Address:
NC DEPARTMENT OF ADMINISTRATION
1301 MAIL SERVICE CENTER
RALEIGH, NC 27699-1301

Telephone: (919) 807-2425
Fax: (919) 733-9571
COURIER #51-01-00
Email: state.clearinghouse@doa.nc.gov
Website: www.ncadmin.nc.gov

Location:
116 WEST JONES STREET
RALEIGH, NORTH CAROLINA

ROY COOPER
Governor
MICHAEL S. REGAN
Secretary
JAMIE RAGAN
Director

NORTH CAROLINA
Environmental Quality

MEMORANDUM

To: Crystal Best
State Clearinghouse Coordinator
NC Department of Administration

From: Lyn Hardison
Division of Environmental Assistance and Customer Service
Environmental Assistance and Project Review Coordinator
Washington Regional Office
2

RE: Environmental Assessment
Proposed project is for the Combat Air Forces Contract Adversary Air Force Support for Seymour Johnson Air Force Base.
Wayne County

Date: June 4, 2020

The Department of Environmental Quality has reviewed the proposal for the referenced project. Based on the information provided, several of our agencies have offered some valuable guidance. The comments are attached for the applicant's review.

The Department agencies will continue to be available to assist the applicant through any environmental review or permitting processes.

Thank you for the opportunity to respond.

Attachments

North Carolina Department of Environmental Quality | Division of Environmental Assistance and Customer Service
217 West Jones Street | 1639 Mail Service Center | Raleigh, North Carolina 27699-1639
877.623.6748

NORTH CAROLINA
Environmental Quality

ROY COOPER
Governor
MICHAEL S. REGAN
Secretary
MICHAEL SCOTT
Director

Date: June 2, 2020

To: Michael Scott, Director
Division of Waste Management

Through: Janet Macdonald
Inactive Hazardous Sites Branch – Special Projects Unit

From: Bonnie S. Ware
Inactive Hazardous Sites Branch

Subject: NEPA Project #20-0251, Dept. of the Air Force, Wayne County, North Carolina

The Superfund Section has reviewed the proximity of sites under its jurisdiction to the Dept. of the Air Force project. Proposed project is for the Combat Air Forces Contract Adversary Air Support for Seymour Johnson Air Force Base.

Three (3) sites were identified within one mile of the project as shown on the attached report. The Superfund Section recommends that site files be reviewed to ensure that appropriate precautions are incorporated into any construction activities that encounter potentially contaminated soil or groundwater. Superfund Section files can be viewed at: http://deq.nc.gov/waste-management-laserfiche.

Please contact Janet Macdonald at [redacted] if you have any questions.

North Carolina Department of Environmental Quality | Division of Waste Management
217 West Jones Street | 1646 Mail Service Center | Raleigh, North Carolina 27699-1646
919.707.8200

NORTH CAROLINA
Environmental Quality

ROY COOPER
Governor
MICHAEL S. REGAN
Secretary
MICHAEL SCOTT
Director

June 3, 2020

To: Lyn Hardison, Environmental Assistance and SEPA Coordinator
Division of Environmental Assistance and Customer Service

From: Melodi Deaver, Administrative Specialist
Division of Waste Management, Hazardous Waste Section

RE: NEPA Review, Project# 20-0251, Dept. of the Airforce (Wayne County)

The Hazardous Waste Section has reviewed the proposed project for the Combat Air Forces Contract Adversary Air Support for Seymour Johnson Air Force Base and would like to make the following comment:

Any hazardous waste generated from the demolition, construction, operation, maintenance, and/or remediation (e.g. excavated soil) from the proposed project must be managed in accordance with the North Carolina Hazardous Waste Rules. The demolition, construction, operation, maintenance, and remediation activities conducted will most likely generate a solid waste, and a determination must be made whether it is a hazardous waste. If a project site generates more than 220 pounds of hazardous waste in a calendar month, the HWS must be notified, and the site must comply with the small quantity generator (SQG) requirements. If a project site generates more than 2200 pounds of hazardous waste in a calendar month, the HWS must be notified, and the facility must comply with the large quantity generator (LQG) requirements.

Generators are required to determine their generator status and both SQGs & LQGs are required to obtain a site EPA Identification number for the generation of hazardous waste.

Should any questions arise, please contact Melodi Deaver at [redacted]

Respectfully,

Melodi Deaver

Compliance Branch
Hazardous Waste Section

North Carolina Department of Environmental Quality | Division of Waste Management
217 West Jones Street | 1646 Mail Service Center | Raleigh, North Carolina 27699-1646
919.707.8200

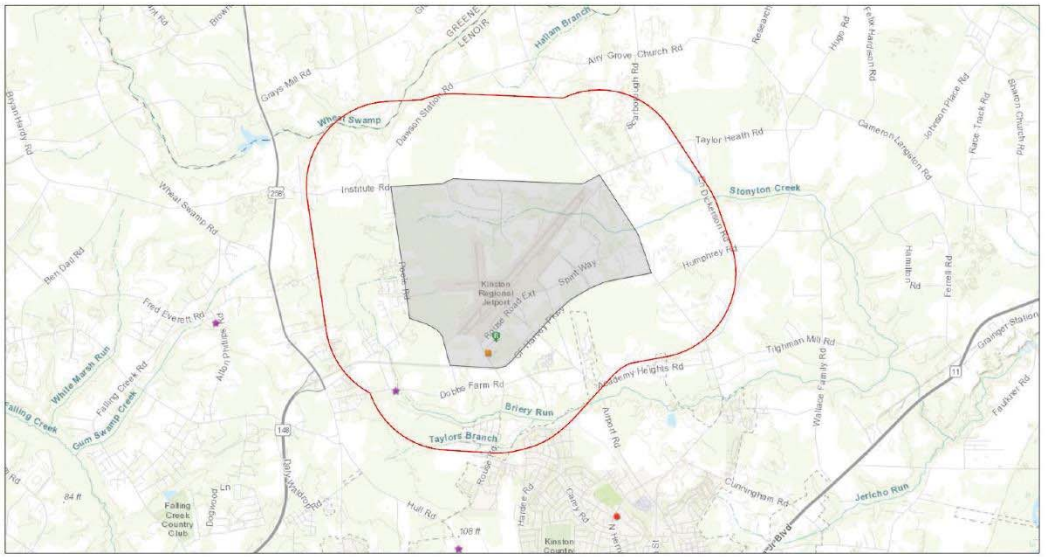
6/2/2020

SEPA/NEPA Review Report

Area of Interest (AOI) Information

Area : 10,728.43 acres

Jun 2 2020 16:35:59 Eastern Daylight Time



NC Brownfields Location_View
- Recorded
- Pre Regulatory Landfill Sites
- DSCA_Certified - Copy
- Inactive Hazardous Sites

1:60,301
0 0.5 1 2 mi
0 1 2 4 km

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

6/2/2020

20-0251 Wayne County

Summary

Name	Count	Area(acres)	Length(mi)
Certified DSCA Sites	0	N/A	N/A
Federal Remediation Branch Sites	0	N/A	N/A
Inactive Hazardous Sites	1	N/A	N/A
Pre-Regulatory Landfill Sites	1	N/A	N/A
Brownfields Program Sites	1	N/A	N/A

Inactive Hazardous Sites

#	EPAID	SITENAME	Count
1	NCN000407582	WEST PHARMACEUTICAL SERVCES	1

Pre-Regulatory Landfill Sites

#	EPAID	SITENAME	Count
1	NONCD0000391	Dobbs Farm Dump	1

Brownfields Program Sites

#	BF_ID	BF_Name	Count
1	1104807054	West Pharmaceutical	1

NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

COUNTY: WAYNE

G07: MILITARY ACTIVITES (TRAINING, FLIGHT ROUTES, BASE EXPANSIONS

STATE NUMBER: 20-E-0000-0251
DATE RECEIVED: 05/07/2020
AGENCY RESPONSE: 06/03/2020
REVIEW CLOSED: 06/08/2020

MS CINDY WILLIAMS
CLEARINGHOUSE COORDINATOR
DPS - DIV OF EMERGENCY MANAGEMENT
FLOODPLAIN MANAGEMENT PROGRAM
4218 MAIL SERVICE CENTER
RALEIGH NC

REVIEW DISTRIBUTION

DEPT OF ENVIR. QUALITY - COASTAL MG
DEPT OF ENVIRONMENTAL QUALITY
DEPT OF NATURAL & CULTURAL RESOURCE
DEPT OF TRANSPORTATION
DNCR - NATURAL HERITAGE PROGRAM
DPS - DIV OF EMERGENCY MANAGEMENT
EASTERN CAROLINA COUNCIL

PROJECT INFORMATION

APPLICANT: Dept. of the Air Force
TYPE: National Environmental Policy Act
Environmental Assessment

DESC: Proposed project is for the Combat Air Forces Contract Adversary Air Support for Seymour Johnson Air Force Base. - View documents at: https://www.seymourjohnson.af.mil/Home/SJAFB-Environmental-Management/

CROSS-REFERENCE NUMBER: 20-E-0000-0172

The attached project has been submitted to the N. C. State Clearinghouse for intergovernmental review. Please review and submit your response by the above indicated date to 1301 Mail Service Center, Raleigh NC 27699-1301.

If additional review time is needed, please contact this office at (919)807-2425.

AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED: ☑ NO COMMENT ☐ COMMENTS ATTACHED

SIGNED BY: Jintao Wen DATE: 5/22/2020

NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

COUNTY: WAYNE

G07: MILITARY ACTIVITES (TRAINING, FLIGHT ROUTES, BASE EXPANSIONS

STATE NUMBER: 20-E-0000-0251
DATE RECEIVED: 05/07/2020
AGENCY RESPONSE: 06/03/2020
REVIEW CLOSED: 06/08/2020

MS JEANNE STONE
CLEARINGHOUSE COORDINATOR
DEPT OF TRANSPORTATION
STATEWIDE PLANNING - MSC #1554
RALEIGH NC

REVIEW DISTRIBUTION

DEPT OF ENVIR. QUALITY - COASTAL MG
DEPT OF ENVIRONMENTAL QUALITY
DEPT OF NATURAL & CULTURAL RESOURCE
DEPT OF TRANSPORTATION
DNCR - NATURAL HERITAGE PROGRAM
DPS - DIV OF EMERGENCY MANAGEMENT
EASTERN CAROLINA COUNCIL

PROJECT INFORMATION

APPLICANT: Dept. of the Air Force
TYPE: National Environmental Policy Act
Environmental Assessment

DESC: Proposed project is for the Combat Air Forces Contract Adversary Air Support for Seymour Johnson Air Force Base. - View documents at: https://www.seymourjohnson.af.mil/Home/SJAFB-Environmental-Management/

CROSS-REFERENCE NUMBER: 20-E-0000-0172

The attached project has been submitted to the N. C. State Clearinghouse for intergovernmental review. Please review and submit your response by the above indicated date to 1301 Mail Service Center, Raleigh NC 27699-1301.

If additional review time is needed, please contact this office at (919)807-2425.

AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED: ☑ NO COMMENT ☐ COMMENTS ATTACHED

SIGNED BY: Tiarney Hogan DATE: 6/1/2020

Appendix A-4

Government-to-Government Consultation

This page intentionally left blank

Mailing List

Chief Bill Harris
Catawba Indian Nation
996 Avenue of the Nations
Rock Hill, SC 29730

Dr. Wenonah G. Haire
Tribal Historic Preservation Officer
Catawba Indian Nation
1536 Tom Steven Road
Rock Hill, SC 29730

President Deborah Dotson
Delaware Nation
PO Box 825
Anadarko, OK 73005

Erin Thompson
Director of Cultural Resources & Section 106
Delaware Nation
PO Box 825
Anadarko, OK 73005

Chief Robert Gray
Pamunkey Indian Tribe
1054 Pocahontas Trail
King William, VA 23086

Chief Leo Henry
Tuscarora Nation
2006 Mt Hope Road
Lewiston, NY 14092

Bryan Printup
Representative
Tuscarora Nation
5226 Walmore Road
Lewiston, NY 14092

This page intentionally left blank

Coordination Letters

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

FEB 2 6 2020

Colonel Donn C. Yates
Commander, 4th Fighter Wing
1600 Wright Brothers Ave
Seymour Johnson AFB, NC 27531

Chief William Harris
Catawba Indian Nation
996 Avenue of the Nations
Rock Hill, SC 29730

Dear Chief William Harris:

The purpose of this letter is two-fold: to give you an opportunity to review and comment on a proposed action in which the Catawba Indian Nation may have an interest and to invite the Catawba Indian Nation to participate in government-to-government consultation with the United States Air Force (Air Force), pursuant to Section 106 of the National Historic Preservation Act (NHPA).

The Proposed Action is to contract the support of approximately 2,590 adversary air (ADAIR) sorties annually using 14 contractor-owned and contractor-operated aircraft. Contract ADAIR would support Seymour Johnson Air Force Base (AFB) training operating out of one of three potential regional airports: Kinston Regional Jetport (ISO), Fayetteville Regional Airport (FAY), and Newport News-Williamsburg International Airport (PHF). Aircraft would depart from airport runways, transit from the airport to military special use airspace, perform ADAIR training, transit back, and land at the airport. Training activities would use existing special use airspace near Seymour Johnson AFB (see attachment). Operations and maintenance facilities would be contracted by the service provider at the civilian airport to support the ADAIR mission. Attached is the location and airspace proposed for contract ADAIR training.

Pursuant to Section 106 of the NHPA, and consistent with Air Force Instruction 90-2002, *Air Force Interactions with Federally-Recognized Tribes*, we would appreciate a response regarding potential further engagement in government-to-government consultation on this Proposed Action. We ask your assistance in identifying whether there are areas of historic, religious, or cultural significance within the area of potential effects for this proposed undertaking. Regardless of whether the Tribe chooses to consult on this proposed project, the Air Force will comply with applicable laws and regulations in the event of an inadvertent discovery of archaeological or human remains.

Please provide information, your comments, or requests for additional information at your earliest convenience. This will ensure the Air Force has sufficient time to fully consider them when preparing the Draft Environmental Assessment. I have designated Ms. Cathryn Pesenti at 4 CES/CEIE, as my principal point of contact on this effort; you can reach her at 1095 Peterson Avenue, Seymour Johnson AFB, North Carolina 27531 or by electronic mail to cathryn.pesenti@us.af.mil. Thank you in advance for your assistance.

DONN C. YATES, Colonel, USAF
Commander

Attachment:
Special Use Airspace proposed for use by contract ADAIR training

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

FEB 2 6 2020

Colonel Donn C. Yates
Commander, 4th Fighter Wing
1600 Wright Brothers Ave
Seymour Johnson AFB, NC 27531

Dr. Wenonah G. Haire
Tribal Historic Preservation Officer
Catawba Indian Nation
1536 Tom Steven Road
Rock Hill, SC 29730

Dear Dr. Haire:

The purpose of this letter is two-fold: to give you an opportunity to review and comment on a proposed action in which the Catawba Indian Nation may have an interest and to invite the Catawba Indian Nation to participate in government-to-government consultation with the United States Air Force (Air Force), pursuant to Section 106 of the National Historic Preservation Act (NHPA).

The Proposed Action is to contract the support of approximately 2,590 adversary air (ADAIR) sorties annually using 14 contractor-owned and contractor-operated aircraft. Contract ADAIR would support Seymour Johnson Air Force Base (AFB) training operating out of one of three potential regional airports: Kinston Regional Jetport (ISO), Fayetteville Regional Airport (FAY), and Newport News-Williamsburg International Airport (PHF). Aircraft would depart from airport runways, transit from the airport to military special use airspace, perform ADAIR training, transit back, and land at the airport. Training activities would use existing special use airspace near Seymour Johnson AFB (see attachment). Operations and maintenance facilities would be contracted by the service provider at the civilian airport to support the ADAIR mission. Attached is the location and airspace proposed for contract ADAIR training.

Pursuant to Section 106 of the NHPA, and consistent with Air Force Instruction 90-2002, *Air Force Interactions with Federally-Recognized Tribes*, we would appreciate a response regarding potential further engagement in government-to-government consultation on this Proposed Action. We ask your assistance in identifying whether there are areas of historic, religious, or cultural significance within the area of potential effects for this proposed undertaking. Regardless of whether the Tribe chooses to consult on this proposed project, the Air Force will comply with applicable laws and regulations in the event of an inadvertent discovery of archaeological or human remains.

Please provide information, your comments, or requests for additional information at your earliest convenience. This will ensure the Air Force has sufficient time to fully consider them when preparing the Draft Environmental Assessment. I have designated Ms. Cathryn Pesenti at 4 CES/CEIE, as my principal point of contact on this effort; you can reach her at 1095 Peterson Avenue, Seymour Johnson AFB, North Carolina 27531 or by electronic mail to cathryn.pesenti@us.af.mil. Thank you in advance for your assistance.

DONN C. YATES, Colonel, USAF
Commander

Attachment:
Special Use Airspace proposed for use by contract ADAIR training

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

FEB 2 6 2020

Colonel Donn C. Yates
Commander, 4th Fighter Wing
1600 Wright Brothers Ave
Seymour Johnson AFB, NC 27531

President Deborah Dotson
Delaware Nation
PO Box 825
Anadarko, OK 73005

Dear President Deborah Dotson:

The purpose of this letter is two-fold: to give you an opportunity to review and comment on a proposed action in which the Delaware Nation may have an interest and to invite the Delaware Nation to participate in government-to-government consultation with the United States Air Force (Air Force), pursuant to Section 106 of the National Historic Preservation Act (NHPA).

The Proposed Action is to contract the support of approximately 2,590 adversary air (ADAIR) sorties annually using 14 contractor-owned and contractor-operated aircraft. Contract ADAIR would support Seymour Johnson Air Force Base (AFB) training operating out of one of three potential regional airports: Kinston Regional Jetport (ISO), Fayetteville Regional Airport (FAY), and Newport News-Williamsburg International Airport (PHF). Aircraft would depart from airport runways, transit from the airport to military special use airspace, perform ADAIR training, transit back, and land at the airport. Training activities would use existing special use airspace near Seymour Johnson AFB (see attachment). Operations and maintenance facilities would be contracted by the service provider at the civilian airport to support the ADAIR mission. Attached is the location and airspace proposed for contract ADAIR training.

Pursuant to Section 106 of the NHPA, and consistent with Air Force Instruction 90-2002, *Air Force Interactions with Federally-Recognized Tribes*, we would appreciate a response regarding potential further engagement in government-to-government consultation on this Proposed Action. We ask your assistance in identifying whether there are areas of historic, religious, or cultural significance within the area of potential effects for this proposed undertaking. Regardless of whether the Tribe chooses to consult on this proposed project, the Air Force will comply with applicable laws and regulations in the event of an inadvertent discovery of archaeological or human remains.

Please provide information, your comments, or requests for additional information at your earliest convenience. This will ensure the Air Force has sufficient time to fully consider them when preparing the Draft Environmental Assessment. I have designated Ms. Cathryn Pesenti at 4 CES/CEIE, as my principal point of contact on this effort; you can reach her at 1095 Peterson Avenue, Seymour Johnson AFB, North Carolina 27531 or by electronic mail to cathryn.pesenti@us.af.mil. Thank you in advance for your assistance.

DONN C. YATES, Colonel, USAF
Commander

Attachment:
Special Use Airspace proposed for use by contract ADAIR training

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

FEB 2 6 2020

Colonel Donn C. Yates
Commander, 4th Fighter Wing
1600 Wright Brothers Ave
Seymour Johnson AFB, NC 27531

Ms. Erin Thompson
Director of Historic Preservation & Section 106
Delaware Nation
PO Box 825
Anadarko, OK 73005

Dear Ms. Thompson:

The purpose of this letter is two-fold: to give you an opportunity to review and comment on a proposed action in which the Delaware Nation may have an interest and to invite the Delaware Nation to participate in government-to-government consultation with the United States Air Force (Air Force), pursuant to Section 106 of the National Historic Preservation Act (NHPA).

The Proposed Action is to contract the support of approximately 2,590 adversary air (ADAIR) sorties annually using 14 contractor-owned and contractor-operated aircraft. Contract ADAIR would support Seymour Johnson Air Force Base (AFB) training operating out of one of three potential regional airports: Kinston Regional Jetport (ISO), Fayetteville Regional Airport (FAY), and Newport News-Williamsburg International Airport (PHF). Aircraft would depart from airport runways, transit from the airport to military special use airspace, perform ADAIR training, transit back, and land at the airport. Training activities would use existing special use airspace near Seymour Johnson AFB (see attachment). Operations and maintenance facilities would be contracted by the service provider at the civilian airport to support the ADAIR mission. Attached is the location and airspace proposed for contract ADAIR training.

Pursuant to Section 106 of the NHPA, and consistent with Air Force Instruction 90-2002, *Air Force Interactions with Federally-Recognized Tribes*, we would appreciate a response regarding potential further engagement in government-to-government consultation on this Proposed Action. We ask your assistance in identifying whether there are areas of historic, religious, or cultural significance within the area of potential effects for this proposed undertaking. Regardless of whether the Tribe chooses to consult on this proposed project, the Air Force will comply with applicable laws and regulations in the event of an inadvertent discovery of archaeological or human remains.

Please provide information, your comments, or requests for additional information at your earliest convenience. This will ensure the Air Force has sufficient time to fully consider them when preparing the Draft Environmental Assessment. I have designated Ms. Cathryn Pesenti at 4 CES/CEIE, as my principal point of contact on this effort; you can reach her at 1095 Peterson Avenue, Seymour Johnson AFB, North Carolina 27531 or by electronic mail to cathryn.pesenti@us.af.mil. Thank you in advance for your assistance.

DONN C. YATES, Colonel, USAF
Commander

Attachment:
Special Use Airspace proposed for use by contract ADAIR training

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

FEB 2 6 2020

Colonel Donn C. Yates
Commander, 4th Fighter Wing
1600 Wright Brothers Ave
Seymour Johnson AFB, NC 27531

Chief Robert Gray
Pamunkey Indian Tribe
1054 Pocahontas Trail
King William, VA 23086

Dear Chief Robert Gray:

The purpose of this letter is two-fold: to give you an opportunity to review and comment on a proposed action in which the Pamunkey Indian Tribe may have an interest and to invite the Pamunkey Indian Tribe to participate in government-to-government consultation with the United States Air Force (Air Force), pursuant to Section 106 of the National Historic Preservation Act (NHPA).

The Proposed Action is to contract the support of approximately 2,590 adversary air (ADAIR) sorties annually using 14 contractor-owned and contractor-operated aircraft. Contract ADAIR would support Seymour Johnson Air Force Base (AFB) training operating out of one of three potential regional airports: Kinston Regional Jetport (ISO), Fayetteville Regional Airport (FAY), and Newport News-Williamsburg International Airport (PHF). Aircraft would depart from airport runways, transit from the airport to military special use airspace, perform ADAIR training, transit back, and land at the airport. Training activities would use existing special use airspace near Seymour Johnson AFB (see attachment). Operations and maintenance facilities would be contracted by the service provider at the civilian airport to support the ADAIR mission. Attached is the location and airspace proposed for contract ADAIR training.

Pursuant to Section 106 of the NHPA, and consistent with Air Force Instruction 90-2002, *Air Force Interactions with Federally-Recognized Tribes*, we would appreciate a response regarding potential further engagement in government-to-government consultation on this Proposed Action. We ask your assistance in identifying whether there are areas of historic, religious, or cultural significance within the area of potential effects for this proposed undertaking. Regardless of whether the Tribe chooses to consult on this proposed project, the Air Force will comply with applicable laws and regulations in the event of an inadvertent discovery of archaeological or human remains.

Please provide information, your comments, or requests for additional information at your earliest convenience. This will ensure the Air Force has sufficient time to fully consider them when preparing the Draft Environmental Assessment. I have designated Ms. Cathryn Pesenti at 4 CES/CEIE, as my principal point of contact on this effort; you can reach her at 1095 Peterson Avenue, Seymour Johnson AFB, North Carolina 27531 or by electronic mail to cathryn.pesenti@us.af.mil. Thank you in advance for your assistance.

DONN C. YATES, Colonel, USAF
Commander

Attachment:
Special Use Airspace proposed for use by contract ADAIR training

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

FEB 2 6 2020

Colonel Donn C. Yates
Commander, 4th Fighter Wing
1600 Wright Brothers Ave
Seymour Johnson AFB, NC 27531

Chief Leo Henry
Tuscarora Nation
2006 Mt Hope Rd
Lewiston NY 14092

Dear Chief Leo Henry:

The purpose of this letter is two-fold: to give you an opportunity to review and comment on a proposed action in which the Tuscarora Nation may have an interest and to invite the Tuscarora Nation to participate in government-to-government consultation with the United States Air Force (Air Force), pursuant to Section 106 of the National Historic Preservation Act (NHPA).

The Proposed Action is to contract the support of approximately 2,590 adversary air (ADAIR) sorties annually using 14 contractor-owned and contractor-operated aircraft. Contract ADAIR would support Seymour Johnson Air Force Base (AFB) training operating out of one of three potential regional airports: Kinston Regional Jetport (ISO), Fayetteville Regional Airport (FAY), and Newport News-Williamsburg International Airport (PHF). Aircraft would depart from airport runways, transit from the airport to military special use airspace, perform ADAIR training, transit back, and land at the airport. Training activities would use existing special use airspace near Seymour Johnson AFB (see attachment). Operations and maintenance facilities would be contracted by the service provider at the civilian airport to support the ADAIR mission. Attached is the location and airspace proposed for contract ADAIR training.

Pursuant to Section 106 of the NHPA, and consistent with Air Force Instruction 90-2002, *Air Force Interactions with Federally-Recognized Tribes*, we would appreciate a response regarding potential further engagement in government-to-government consultation on this Proposed Action. We ask your assistance in identifying whether there are areas of historic, religious, or cultural significance within the area of potential effects for this proposed undertaking. Regardless of whether the Tribe chooses to consult on this proposed project, the Air Force will comply with applicable laws and regulations in the event of an inadvertent discovery of archaeological or human remains.

Please provide information, your comments, or requests for additional information at your earliest convenience. This will ensure the Air Force has sufficient time to fully consider them when preparing the Draft Environmental Assessment. I have designated Ms. Cathryn Pesenti at 4 CES/CEIE, as my principal point of contact on this effort; you can reach her at 1095 Peterson Avenue, Seymour Johnson AFB, North Carolina 27531 or by electronic mail to cathryn.pesenti@us.af.mil. Thank you in advance for your assistance.

DONN C. YATES, Col, USAF
Commander

Attachment:
Special Use Airspace proposed for use by contract ADAIR training

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

FEB 2 6 2020

Colonel Donn C. Yates
Commander, 4th Fighter Wing
1600 Wright Brothers Ave
Seymour Johnson AFB, NC 27531

Mr. Bryan Printup
Representative
Tuscarora Nation
5226 Walmore Rd
Lewiston NY 14092

Dear Mr. Printup:

The purpose of this letter is two-fold: to give you an opportunity to review and comment on a proposed action in which the Tuscarora Nation may have an interest and to invite the Tuscarora Nation to participate in government-to-government consultation with the United States Air Force (Air Force), pursuant to Section 106 of the National Historic Preservation Act (NHPA).

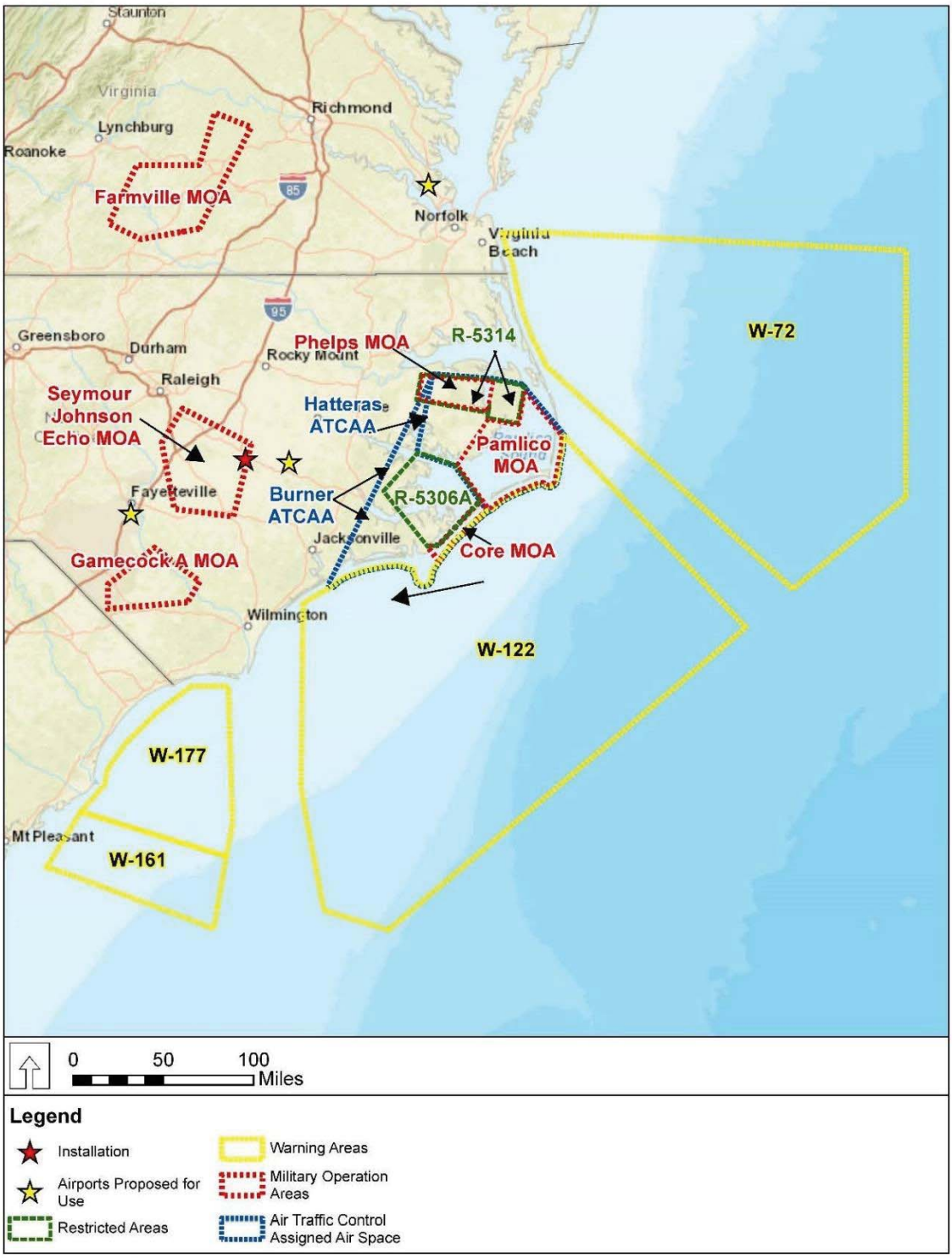
The Proposed Action is to contract the support of approximately 2,590 adversary air (ADAIR) sorties annually using 14 contractor-owned and contractor-operated aircraft. Contract ADAIR would support Seymour Johnson Air Force Base (AFB) training operating out of one of three potential regional airports: Kinston Regional Jetport (ISO), Fayetteville Regional Airport (FAY), and Newport News-Williamsburg International Airport (PHF). Aircraft would depart from airport runways, transit from the airport to military special use airspace, perform ADAIR training, transit back, and land at the airport. Training activities would use existing special use airspace near Seymour Johnson AFB (see attachment). Operations and maintenance facilities would be contracted by the service provider at the civilian airport to support the ADAIR mission. Attached is the location and airspace proposed for contract ADAIR training.

Pursuant to Section 106 of the NHPA, and consistent with Air Force Instruction 90-2002, *Air Force Interactions with Federally-Recognized Tribes*, we would appreciate a response regarding potential further engagement in government-to-government consultation on this Proposed Action. We ask your assistance in identifying whether there are areas of historic, religious, or cultural significance within the area of potential effects for this proposed undertaking. Regardless of whether the Tribe chooses to consult on this proposed project, the Air Force will comply with applicable laws and regulations in the event of an inadvertent discovery of archaeological or human remains.

Please provide information, your comments, or requests for additional information at your earliest convenience. This will ensure the Air Force has sufficient time to fully consider them when preparing the Draft Environmental Assessment. I have designated Ms. Cathryn Pesenti at 4 CES/CEIE, as my principal point of contact on this effort; you can reach her at 1095 Peterson Avenue, Seymour Johnson AFB, North Carolina 27531 or by electronic mail to cathryn.pesenti@us.af.mil. Thank you in advance for your assistance.

DONN C. YATES, Colonel, USAF
Commander

Attachment:
Special Use Airspace proposed for use by contract ADAIR training



Special Use Airspace proposed for use by contract ADAIR training

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

APR 3 0 2020

Colonel Donn C. Yates
Commander, 4th Fighter Wing
1600 Wright Brothers Ave
Seymour Johnson AFB, NC 27531

Mr. Bryan Printup
Representative
Tuscarora Nation
5226 Walmore Rd
Lewiston, NY 14092

Dear Mr. Printup:

In February, I sent you a letter briefly describing the Air Force's proposal to establish an adversary air (ADAIR) operation in support of Seymour Johnson Air Force Base (AFB), North Carolina. I would like to follow up by inviting the Tuscarora Nation to engage in government-to-government consultation with Seymour Johnson AFB on the proposal.

The Proposed Action is to contract the support of approximately 2,590 ADAIR sorties annually using 14 contractor-owned and contractor-operated aircraft. Contract ADAIR would support Seymour Johnson AFB training operating out of Kinston Regional Jetport (ISO). Aircraft would depart from airport runways, transit from the airport to military special use airspace, perform ADAIR training, transit back, and land at the airport. Training activities would use existing special use airspace near Seymour Johnson AFB. Operations and maintenance facilities would be contracted by the service provider at the civilian airport to support the ADAIR mission. No new construction or ground disturbance is included as part of the current Proposed Action.

ISO was established as a United States Navy pilot training base during World War II and conducted flying training and contract flying training until inactivated in 1957. The current terminal was constructed in 1978 and designed to support commercial use. No buildings greater than 50 years old, and associated with military use of the airfield, are known to be standing. As no ground disturbance would take place as part of the Proposed Action, no archaeological resources (surface or subsurface) would be disturbed or otherwise affected.

There are 85 National Register of Historic Places–listed historic architectural resources located beneath the existing special use airspace proposed, including a multicomponent prehistoric village site, a prehistoric pictograph site, several farmsteads and plantations, a confederate breastworks, and several shipwrecks. The High, Medium, and Low Noise Scenarios modeled for implementing contract ADAIR in the overland special use airspace would result in a negligible increase in noise

and therefore would have no effect, and consequently no impact, to architectural resources, cultural resources, or historic properties. Sorties flown in special use airspace over the Atlantic Ocean would be performed at an altitude that would not affect submerged resources.

I understand that, to date, the Tuscarora Nation has not informed Seymour Johnson AFB of any properties of religious and cultural significance associated with ISO or the special use airspace being considered to support ADAIR. We invite you to consult with us and identify any such properties that might be affected by the Proposed Action. Please let us know if any of these properties are present, along with any supporting information you are able and willing to share on their religious and cultural significance. If detailed disclosure is not appropriate, confidential consultations can be arranged to result in measures to avoid or minimize effects on Traditional Cultural Properties.

To ensure we are able to make full use of information you provide, it would be helpful to hear back from you within 30 days of receipt of this letter. The Draft Environmental Assessment (EA) and the Proposed Finding of No Significant Impact (FONSI) are available at https://www.seymourjohnson.af.mil/Home/SJAFB-Environmental-Management/. I have designated Cathryn Pesenti as my principal point of contact. She can be reached at 1095 Peterson Avenue, Seymour Johnson AFB, North Carolina 27531, by electronic mail to cathryn.pesenti@us.af.mil, or by phone at (919) 722-7455.

The Air Force is aware of the potential impact of the ongoing coronavirus (COVID-19) pandemic on the usual methods of access to information and ability to communicate, such as the mass closure of local public libraries and challenges with the sufficiency of an increasingly overburdened internet. We also appreciate the strain the COVID-19 pandemic is putting on tribal governments and individuals. The Air Force seeks to implement appropriate additional measures to ensure that all interested stakeholders have the opportunity to participate fully in this EA process.

Accordingly, please do not hesitate to contact us directly at the email address or telephone number provided above; we are available to discuss and help resolve issues involving access to the Draft EA and Proposed FONSI or the ability to comment. Thank you in advance for your consideration.

DONN C. YATES, Colonel, USAF
Commander

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

APR 30 2020

Colonel Donn C. Yates
Commander, 4th Fighter Wing
1600 Wright Brothers Ave
Seymour Johnson AFB, NC 27531

Chief Leo Henry
Tuscarora Nation
2006 Mt Hope Rd
Lewiston, NY 14092

Dear Chief Leo Henry:

In February, I sent you a letter briefly describing the Air Force's proposal to establish an adversary air (ADAIR) operation in support of Seymour Johnson Air Force Base (AFB), North Carolina. I would like to follow up by inviting the Tuscarora Nation to engage in government-to-government consultation with Seymour Johnson AFB on the proposal.

The Proposed Action is to contract the support of approximately 2,590 ADAIR sorties annually using 14 contractor-owned and contractor-operated aircraft. Contract ADAIR would support Seymour Johnson AFB training operating out of Kinston Regional Jetport (ISO). Aircraft would depart from airport runways, transit from the airport to military special use airspace, perform ADAIR training, transit back, and land at the airport. Training activities would use existing special use airspace near Seymour Johnson AFB. Operations and maintenance facilities would be contracted by the service provider at the civilian airport to support the ADAIR mission. No new construction or ground disturbance is included as part of the current Proposed Action.

ISO was established as a United States Navy pilot training base during World War II and conducted flying training and contract flying training until inactivated in 1957. The current terminal was constructed in 1978 and designed to support commercial use. No buildings greater than 50 years old, and associated with military use of the airfield, are known to be standing. As no ground disturbance would take place as part of the Proposed Action, no archaeological resources (surface or subsurface) would be disturbed or otherwise affected.

There are 85 National Register of Historic Places–listed historic architectural resources located beneath the existing special use airspace proposed, including a multicomponent prehistoric village site, a prehistoric pictograph site, several farmsteads and plantations, a confederate breastworks, and several shipwrecks. The High, Medium, and Low Noise Scenarios modeled for implementing contract ADAIR in the overland special use airspace would result in a negligible increase in noise

and therefore would have no effect, and consequently no impact, to architectural resources, cultural resources, or historic properties. Sorties flown in special use airspace over the Atlantic Ocean would be performed at an altitude that would not affect submerged resources.

I understand that, to date, the Tuscarora Nation has not informed Seymour Johnson AFB of any properties of religious and cultural significance associated with ISO or the special use airspace being considered to support ADAIR. We invite you to consult with us and identify any such properties that might be affected by the Proposed Action. Please let us know if any of these properties are present, along with any supporting information you are able and willing to share on their religious and cultural significance. If detailed disclosure is not appropriate, confidential consultations can be arranged to result in measures to avoid or minimize effects on Traditional Cultural Properties.

To ensure we are able to make full use of information you provide, it would be helpful to hear back from you within 30 days of receipt of this letter. The Draft Environmental Assessment (EA) and the Proposed Finding of No Significant Impact (FONSI) are available at https://www.seymourjohnson.af.mil/Home/SJAFB-Environmental-Management/. I have designated Cathryn Pesenti as my principal point of contact. She can be reached at 1095 Peterson Avenue, Seymour Johnson AFB, North Carolina 27531, by electronic mail to cathryn.pesenti@us.af.mil, or by phone at (919) 722-7455.

The Air Force is aware of the potential impact of the ongoing coronavirus (COVID-19) pandemic on the usual methods of access to information and ability to communicate, such as the mass closure of local public libraries and challenges with the sufficiency of an increasingly overburdened internet. We also appreciate the strain the COVID-19 pandemic is putting on tribal governments and individuals. The Air Force seeks to implement appropriate additional measures to ensure that all interested stakeholders have the opportunity to participate fully in this EA process.

Accordingly, please do not hesitate to contact us directly at the email address or telephone number provided above; we are available to discuss and help resolve issues involving access to the Draft EA and Proposed FONSI or the ability to comment. Thank you in advance for your consideration.

DONN C. YATES, Colonel, USAF
Commander

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

APR 3 0 2020

Colonel Donn C. Yates
Commander, 4th Fighter Wing
1600 Wright Brothers Ave
Seymour Johnson AFB, NC 27531

Chief William Harris
Catawba Indian Nation
996 Avenue of the Nations
Rock Hill, SC 29730

Dear Chief William Harris:

In February, I sent you a letter briefly describing the Air Force's proposal to establish an adversary air (ADAIR) operation in support of Seymour Johnson Air Force Base (AFB), North Carolina. I would like to follow up by inviting the Catawba Indian Nation to engage in government-to-government consultation with Seymour Johnson AFB on the proposal.

The Proposed Action is to contract the support of approximately 2,590 ADAIR sorties annually using 14 contractor-owned and contractor-operated aircraft. Contract ADAIR would support Seymour Johnson AFB training operating out of Kinston Regional Jetport (ISO). Aircraft would depart from airport runways, transit from the airport to military special use airspace, perform ADAIR training, transit back, and land at the airport. Training activities would use existing special use airspace near Seymour Johnson AFB. Operations and maintenance facilities would be contracted by the service provider at the civilian airport to support the ADAIR mission. No new construction or ground disturbance is included as part of the current Proposed Action.

ISO was established as a United States Navy pilot training base during World War II and conducted flying training and contract flying training until inactivated in 1957. The current terminal was constructed in 1978 and designed to support commercial use. No buildings greater than 50 years old, and associated with military use of the airfield, are known to be standing. As no ground disturbance would take place as part of the Proposed Action, no archaeological resources (surface or subsurface) would be disturbed or otherwise affected.

There are 85 National Register of Historic Places–listed historic architectural resources located beneath the existing special use airspace proposed, including a multicomponent prehistoric village site, a prehistoric pictograph site, several farmsteads and plantations, a confederate breastworks, and several shipwrecks. The High, Medium, and Low Noise Scenarios modeled for implementing contract ADAIR in the overland special use airspace would result in a negligible increase in noise

and therefore would have no effect, and consequently no impact, to architectural resources, cultural resources, or historic properties. Sorties flown in special use airspace over the Atlantic Ocean would be performed at an altitude that would not affect submerged resources.

I understand that, to date, the Catawba Indian Nation has not informed Seymour Johnson AFB of any properties of religious and cultural significance associated with ISO or the special use airspace being considered to support ADAIR. We invite you to consult with us and identify any such properties that might be affected by the Proposed Action. Please let us know if any of these properties are present, along with any supporting information you are able and willing to share on their religious and cultural significance. If detailed disclosure is not appropriate, confidential consultations can be arranged to result in measures to avoid or minimize effects on Traditional Cultural Properties.

To ensure we are able to make full use of information you provide, it would be helpful to hear back from you within 30 days of receipt of this letter. The Draft Environmental Assessment (EA) and the Proposed Finding of No Significant Impact (FONSI) are available at https://www.seymourjohnson.af.mil/Home/SJAFB-Environmental-Management/. I have designated Cathryn Pesenti as my principal point of contact. She can be reached at 1095 Peterson Avenue, Seymour Johnson AFB, North Carolina 27531, by electronic mail to cathryn.pesenti@us.af.mil, or by phone at (919) 722-7455.

The Air Force is aware of the potential impact of the ongoing coronavirus (COVID-19) pandemic on the usual methods of access to information and ability to communicate, such as the mass closure of local public libraries and challenges with the sufficiency of an increasingly overburdened internet. We also appreciate the strain the COVID-19 pandemic is putting on tribal governments and individuals. The Air Force seeks to implement appropriate additional measures to ensure that all interested stakeholders have the opportunity to participate fully in this EA process.

Accordingly, please do not hesitate to contact us directly at the email address or telephone number provided above; we are available to discuss and help resolve issues involving access to the Draft EA and Proposed FONSI or the ability to comment. Thank you in advance for your consideration.

DONN C. YATES, Colonel, USAF
Commander

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

APR 3 0 2020

Colonel Donn C. Yates
Commander, 4th Fighter Wing
1600 Wright Brothers Ave
Seymour Johnson AFB, NC 27531

Dr. Wenonah G. Haire
Tribal Historic Preservation Officer
Catawba Indian Nation
1536 Tom Steven Rd
Rock Hill, SC 29730

Dear Dr. Haire:

In February, I sent you a letter briefly describing the Air Force's proposal to establish an adversary air (ADAIR) operation in support of Seymour Johnson Air Force Base (AFB), North Carolina. I would like to follow up by inviting the Catawba Indian Nation to engage in government-to-government consultation with Seymour Johnson AFB on the proposal.

The Proposed Action is to contract the support of approximately 2,590 ADAIR sorties annually using 14 contractor-owned and contractor-operated aircraft. Contract ADAIR would support Seymour Johnson AFB training operating out of Kinston Regional Jetport (ISO). Aircraft would depart from airport runways, transit from the airport to military special use airspace, perform ADAIR training, transit back, and land at the airport. Training activities would use existing special use airspace near Seymour Johnson AFB. Operations and maintenance facilities would be contracted by the service provider at the civilian airport to support the ADAIR mission. No new construction or ground disturbance is included as part of the current Proposed Action.

ISO was established as a United States Navy pilot training base during World War II and conducted flying training and contract flying training until inactivated in 1957. The current terminal was constructed in 1978 and designed to support commercial use. No buildings greater than 50 years old, and associated with military use of the airfield, are known to be standing. As no ground disturbance would take place as part of the Proposed Action, no archaeological resources (surface or subsurface) would be disturbed or otherwise affected.

There are 85 National Register of Historic Places–listed historic architectural resources located beneath the existing special use airspace proposed, including a multicomponent prehistoric village site, a prehistoric pictograph site, several farmsteads and plantations, a confederate breastworks, and several shipwrecks. The High, Medium, and Low Noise Scenarios modeled for implementing contract ADAIR in the overland special use airspace would result in a negligible increase in noise

and therefore would have no effect, and consequently no impact, to architectural resources, cultural resources, or historic properties. Sorties flown in special use airspace over the Atlantic Ocean would be performed at an altitude that would not affect submerged resources.

I understand that, to date, the Catawba Indian Nation has not informed Seymour Johnson AFB of any properties of religious and cultural significance associated with ISO or the special use airspace being considered to support ADAIR. We invite you to consult with us and identify any such properties that might be affected by the Proposed Action. Please let us know if any of these properties are present, along with any supporting information you are able and willing to share on their religious and cultural significance. If detailed disclosure is not appropriate, confidential consultations can be arranged to result in measures to avoid or minimize effects on Traditional Cultural Properties.

To ensure we are able to make full use of information you provide, it would be helpful to hear back from you within 30 days of receipt of this letter. The Draft Environmental Assessment (EA) and the Proposed Finding of No Significant Impact (FONSI) are available at https://www.seymourjohnson.af.mil/Home/SJAFB-Environmental-Management/. I have designated Cathryn Pesenti as my principal point of contact. She can be reached at 1095 Peterson Avenue, Seymour Johnson AFB, North Carolina 27531, by electronic mail to cathryn.pesenti@us.af.mil, or by phone at (919) 722-7455.

The Air Force is aware of the potential impact of the ongoing coronavirus (COVID-19) pandemic on the usual methods of access to information and ability to communicate, such as the mass closure of local public libraries and challenges with the sufficiency of an increasingly overburdened internet. We also appreciate the strain the COVID-19 pandemic is putting on tribal governments and individuals. The Air Force seeks to implement appropriate additional measures to ensure that all interested stakeholders have the opportunity to participate fully in this EA process.

Accordingly, please do not hesitate to contact us directly at the email address or telephone number provided above; we are available to discuss and help resolve issues involving access to the Draft EA and Proposed FONSI or the ability to comment. Thank you in advance for your consideration.

DONN C. YATES, Colonel, USAF
Commander

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

APR 3 0 2020

Colonel Donn C. Yates
Commander, 4th Fighter Wing
1600 Wright Brothers Ave
Seymour Johnson AFB, NC 27531

President Deborah Dotson
Delaware Nation
PO Box 825
Anadarko, OK 73005

Dear President Deborah Dotson:

In February, I sent you a letter briefly describing the Air Force's proposal to establish an adversary air (ADAIR) operation in support of Seymour Johnson Air Force Base (AFB), North Carolina. I would like to follow up by inviting the Delaware Nation to engage in government-to-government consultation with Seymour Johnson AFB on the proposal.

The Proposed Action is to contract the support of approximately 2,590 ADAIR sorties annually using 14 contractor-owned and contractor-operated aircraft. Contract ADAIR would support Seymour Johnson AFB training operating out of Kinston Regional Jetport (ISO). Aircraft would depart from airport runways, transit from the airport to military special use airspace, perform ADAIR training, transit back, and land at the airport. Training activities would use existing special use airspace near Seymour Johnson AFB. Operations and maintenance facilities would be contracted by the service provider at the civilian airport to support the ADAIR mission. No new construction or ground disturbance is included as part of the current Proposed Action.

ISO was established as a United States Navy pilot training base during World War II and conducted flying training and contract flying training until inactivated in 1957. The current terminal was constructed in 1978 and designed to support commercial use. No buildings greater than 50 years old, and associated with military use of the airfield, are known to be standing. As no ground disturbance would take place as part of the Proposed Action, no archaeological resources (surface or subsurface) would be disturbed or otherwise affected.

There are 85 National Register of Historic Places–listed historic architectural resources located beneath the existing special use airspace proposed, including a multicomponent prehistoric village site, a prehistoric pictograph site, several farmsteads and plantations, a confederate breastworks, and several shipwrecks. The High, Medium, and Low Noise Scenarios modeled for implementing contract ADAIR in the overland special use airspace would result in a negligible increase in noise

and therefore would have no effect, and consequently no impact, to architectural resources, cultural resources, or historic properties. Sorties flown in special use airspace over the Atlantic Ocean would be performed at an altitude that would not affect submerged resources.

I understand that, to date, the Delaware Nation has not informed Seymour Johnson AFB of any properties of religious and cultural significance associated with ISO or the special use airspace being considered to support ADAIR. We invite you to consult with us and identify any such properties that might be affected by the Proposed Action. Please let us know if any of these properties are present, along with any supporting information you are able and willing to share on their religious and cultural significance. If detailed disclosure is not appropriate, confidential consultations can be arranged to result in measures to avoid or minimize effects on Traditional Cultural Properties.

To ensure we are able to make full use of information you provide, it would be helpful to hear back from you within 30 days of receipt of this letter. The Draft Environmental Assessment (EA) and the Proposed Finding of No Significant Impact (FONSI) are available at https://www.seymourjohnson.af.mil/Home/SJAFB-Environmental-Management/. I have designated Cathryn Pesenti as my principal point of contact. She can be reached at 1095 Peterson Avenue, Seymour Johnson AFB, North Carolina 27531, by electronic mail to cathryn.pesenti@us.af.mil, or by phone at (919) 722-7455.

The Air Force is aware of the potential impact of the ongoing coronavirus (COVID-19) pandemic on the usual methods of access to information and ability to communicate, such as the mass closure of local public libraries and challenges with the sufficiency of an increasingly overburdened internet. We also appreciate the strain the COVID-19 pandemic is putting on tribal governments and individuals. The Air Force seeks to implement appropriate additional measures to ensure that all interested stakeholders have the opportunity to participate fully in this EA process.

Accordingly, please do not hesitate to contact us directly at the email address or telephone number provided above; we are available to discuss and help resolve issues involving access to the Draft EA and Proposed FONSI or the ability to comment. Thank you in advance for your consideration.

DONN C. YATES, Colonel, USAF
Commander

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

APR 3 0 2020

Colonel Donn C. Yates
Commander, 4th Fighter Wing
1600 Wright Brothers Ave
Seymour Johnson AFB, NC 27531

Ms. Erin Thompson
Director of Historic Preservation & Section 106
Delaware Nation
PO Box 825
Anadarko, OK 73005

Dear Ms. Thompson:

In February, I sent you a letter briefly describing the Air Force's proposal to establish an adversary air (ADAIR) operation in support of Seymour Johnson Air Force Base (AFB), North Carolina. I would like to follow up by inviting the Delaware Nation to engage in government-to-government consultation with Seymour Johnson AFB on the proposal.

The Proposed Action is to contract the support of approximately 2,590 ADAIR sorties annually using 14 contractor-owned and contractor-operated aircraft. Contract ADAIR would support Seymour Johnson AFB training operating out of Kinston Regional Jetport (ISO). Aircraft would depart from airport runways, transit from the airport to military special use airspace, perform ADAIR training, transit back, and land at the airport. Training activities would use existing special use airspace near Seymour Johnson AFB. Operations and maintenance facilities would be contracted by the service provider at the civilian airport to support the ADAIR mission. No new construction or ground disturbance is included as part of the current Proposed Action.

ISO was established as a United States Navy pilot training base during World War II and conducted flying training and contract flying training until inactivated in 1957. The current terminal was constructed in 1978 and designed to support commercial use. No buildings greater than 50 years old, and associated with military use of the airfield, are known to be standing. As no ground disturbance would take place as part of the Proposed Action, no archaeological resources (surface or subsurface) would be disturbed or otherwise affected.

There are 85 National Register of Historic Places–listed historic architectural resources located beneath the existing special use airspace proposed, including a multicomponent prehistoric village site, a prehistoric pictograph site, several farmsteads and plantations, a confederate breastworks, and several shipwrecks. The High, Medium, and Low Noise Scenarios modeled for implementing contract ADAIR in the overland special use airspace would result in a negligible increase in noise

and therefore would have no effect, and consequently no impact, to architectural resources, cultural resources, or historic properties. Sorties flown in special use airspace over the Atlantic Ocean would be performed at an altitude that would not affect submerged resources.

I understand that, to date, the Delaware Nation has not informed Seymour Johnson AFB of any properties of religious and cultural significance associated with ISO or the special use airspace being considered to support ADAIR. We invite you to consult with us and identify any such properties that might be affected by the Proposed Action. Please let us know if any of these properties are present, along with any supporting information you are able and willing to share on their religious and cultural significance. If detailed disclosure is not appropriate, confidential consultations can be arranged to result in measures to avoid or minimize effects on Traditional Cultural Properties.

To ensure we are able to make full use of information you provide, it would be helpful to hear back from you within 30 days of receipt of this letter. The Draft Environmental Assessment (EA) and the Proposed Finding of No Significant Impact (FONSI) are available at https://www.seymourjohnson.af.mil/Home/SJAFB-Environmental-Management/. I have designated Cathryn Pesenti as my principal point of contact. She can be reached at 1095 Peterson Avenue, Seymour Johnson AFB, North Carolina 27531, by electronic mail to cathryn.pesenti@us.af.mil, or by phone at (919) 722-7455.

The Air Force is aware of the potential impact of the ongoing coronavirus (COVID-19) pandemic on the usual methods of access to information and ability to communicate, such as the mass closure of local public libraries and challenges with the sufficiency of an increasingly overburdened internet. We also appreciate the strain the COVID-19 pandemic is putting on tribal governments and individuals. The Air Force seeks to implement appropriate additional measures to ensure that all interested stakeholders have the opportunity to participate fully in this EA process.

Accordingly, please do not hesitate to contact us directly at the email address or telephone number provided above; we are available to discuss and help resolve issues involving access to the Draft EA and Proposed FONSI or the ability to comment. Thank you in advance for your consideration.

DONN C. YATES, Colonel, USAF
Commander

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

APR 3 0 2020

Colonel Donn C. Yates
Commander, 4th Fighter Wing
1600 Wright Brothers Ave
Seymour Johnson AFB, NC 27531

Chief Robert Gray
Pamunkey Indian Tribe
1054 Pocahontas Trail
King William, VA 23086

Dear Chief Robert Gray:

In February, I sent you a letter briefly describing the Air Force's proposal to establish an adversary air (ADAIR) operation in support of Seymour Johnson Air Force Base (AFB), North Carolina. I would like to follow up by inviting the Pamunkey Indian Tribe to engage in government-to-government consultation with Seymour Johnson AFB on the proposal.

The Proposed Action is to contract the support of approximately 2,590 ADAIR sorties annually using 14 contractor-owned and contractor-operated aircraft. Contract ADAIR would support Seymour Johnson AFB training operating out of Kinston Regional Jetport (ISO). Aircraft would depart from airport runways, transit from the airport to military special use airspace, perform ADAIR training, transit back, and land at the airport. Training activities would use existing special use airspace near Seymour Johnson AFB. Operations and maintenance facilities would be contracted by the service provider at the civilian airport to support the ADAIR mission. No new construction or ground disturbance is included as part of the current Proposed Action.

ISO was established as a United States Navy pilot training base during World War II and conducted flying training and contract flying training until inactivated in 1957. The current terminal was constructed in 1978 and designed to support commercial use. No buildings greater than 50 years old, and associated with military use of the airfield, are known to be standing. As no ground disturbance would take place as part of the Proposed Action, no archaeological resources (surface or subsurface) would be disturbed or otherwise affected.

There are 85 National Register of Historic Places–listed historic architectural resources located beneath the existing special use airspace proposed, including a multicomponent prehistoric village site, a prehistoric pictograph site, several farmsteads and plantations, a confederate breastworks, and several shipwrecks. The High, Medium, and Low Noise Scenarios modeled for implementing contract ADAIR in the overland special use airspace would result in a negligible increase in noise

and therefore would have no effect, and consequently no impact, to architectural resources, cultural resources, or historic properties. Sorties flown in special use airspace over the Atlantic Ocean would be performed at an altitude that would not affect submerged resources.

I understand that, to date, the Pamunkey Indian Tribe has not informed Seymour Johnson AFB of any properties of religious and cultural significance associated with ISO or the special use airspace being considered to support ADAIR. We invite you to consult with us and identify any such properties that might be affected by the Proposed Action. Please let us know if any of these properties are present, along with any supporting information you are able and willing to share on their religious and cultural significance. If detailed disclosure is not appropriate, confidential consultations can be arranged to result in measures to avoid or minimize effects on Traditional Cultural Properties.

To ensure we are able to make full use of information you provide, it would be helpful to hear back from you within 30 days of receipt of this letter. The Draft Environmental Assessment (EA) and the Proposed Finding of No Significant Impact (FONSI) are available at https://www.seymourjohnson.af.mil/Home/SJAFB-Environmental-Management/. I have designated Cathryn Pesenti as my principal point of contact. She can be reached at 1095 Peterson Avenue, Seymour Johnson AFB, North Carolina 27531, by electronic mail to cathryn.pesenti@us.af.mil, or by phone at (919) 722-7455.

The Air Force is aware of the potential impact of the ongoing coronavirus (COVID-19) pandemic on the usual methods of access to information and ability to communicate, such as the mass closure of local public libraries and challenges with the sufficiency of an increasingly overburdened internet. We also appreciate the strain the COVID-19 pandemic is putting on tribal governments and individuals. The Air Force seeks to implement appropriate additional measures to ensure that all interested stakeholders have the opportunity to participate fully in this EA process.

Accordingly, please do not hesitate to contact us directly at the email address or telephone number provided above; we are available to discuss and help resolve issues involving access to the Draft EA and Proposed FONSI or the ability to comment. Thank you in advance for your consideration.

DONN C. YATES, Colonel, USAF
Commander

From: PESENTI, CATHRYN M GS-12 USAF ACC 4 CES/CEIEA
To: [redacted]
Subject: Seymour Johnson AFB Consultation & Draft EA for Contract Adversary Air
Date: Thursday, May 7, 2020 5:22:31 AM
Attachments: Tuscarora Nation.pdf

Mr. Printup,

In consideration of the potential impact of the ongoing coronavirus (COVID-19) pandemic, please find attached an electronic copy of the government-to-government consultation letter for the Air Force's proposal to establish contract adversary air operations in support of Seymour Johnson Air Force Base, North Carolina that was sent to your mailing address this week. An identical letter was prepared for Chief Henry and mailed at the same time. Please let me know if you have any comments, questions, or issues accessing the document.

Thank you,

CATHRYN PESENTI
Environmental Planner
Seymour Johnson Air Force Base
919-722-7455

From: PESENTI, CATHRYN M GS-12 USAF ACC 4 CES/CEIEA
To: [redacted]
Subject: Seymour Johnson AFB Consultation & Draft EA for Contract Adversary Air
Date: Thursday, May 7, 2020 5:21:52 AM
Attachments: Delaware Nation.pdf

President Dotson and Ms. Thompson-Paden,

In consideration of the potential impact of the ongoing coronavirus (COVID-19) pandemic, please find attached an electronic copy of the government-to-government consultation letter for the Air Force's proposal to establish contract adversary air operations in support of Seymour Johnson Air Force Base, North Carolina that was sent to your mailing address this week. Please let me know if you have any comments, questions, or issues accessing the document.

Thank you,

CATHRYN PESENTI
Environmental Planner
Seymour Johnson Air Force Base
919-722-7455

From: PESENTI, CATHRYN M GS-12 USAF ACC 4 CES/CEIEA
To: [redacted]
Subject: Seymour Johnson AFB Consultation & Draft EA for Contract Adversary Air
Date: Thursday, May 7, 2020 5:17:24 AM
Attachments: Pamunkey Indian Tribe.pdf

Chief Gray,

In consideration of the potential impact of the ongoing coronavirus (COVID-19) pandemic, please find attached an electronic copy of the government-to-government consultation letter for the Air Force's proposal to establish contract adversary air operations in support of Seymour Johnson Air Force Base, North Carolina that was sent to your mailing address this week. Please let me know if you have any comments, questions, or issues accessing the document.

Thank you,

CATHRYN PESENTI
Environmental Planner
Seymour Johnson Air Force Base
919-722-7455

From: PESENTI, CATHRYN M GS-12 USAF ACC 4 CES/CEIEA
To: [redacted]
Subject: Seymour Johnson AFB Consultation & Draft EA for Contract Adversary Air
Date: Thursday, May 7, 2020 4:58:51 AM
Attachments: Catawba Indian Nation.pdf

Chief Harris and Dr. Haire,

In consideration of the potential impact of the ongoing coronavirus (COVID-19) pandemic, please find attached an electronic copy of the government-to-government consultation letter for the Air Force's proposal to establish contract adversary air operations in support of Seymour Johnson Air Force Base, North Carolina that was sent to your mailing address this week. Please let me know if you have any comments, questions, or issues accessing the document.

Thank you,

CATHRYN PESENTI
Environmental Planner
Seymour Johnson Air Force Base
919-722-7455

This page intentionally left blank

Responses

PAMUNKEY INDIAN TRIBE

Terry Clouthier
Cultural Resource
Director

TRIBAL GOVERNMENT
Tribal Office

1054 Pocahontas Trail
King William, VA 23086

(804) 339-1629
FAX (866) 422-3387

THPO File Number: 2020-10

Date: 03/04/2020

Colonel Donn C. Yates
Commander, 4th Fighter Wing
Department of the Airforce
1600 Wright Brothers Ave.
Seymour Johnson AFB, NC 27531

RE: Adversary Air Sorties (ADAIR). Seymour Johnson AFB, NC

Dear Mrs. Davis Hankins,

Thank you for contacting the Pamunkey Indian Tribe regarding the proposed undertaking to contract the support of approximately 2590 ADAIR sorties annually out of one of three regional airports: Kingston Regional Jetport (ISO), Fayetteville Regional Airport (FAY) or Newport News-Williamsburg International Airport (PHF). My office offers the following comments.

The Newport News-Williamsburg International Airport is within the traditional and ancestral territory of the Pamunkey Indian Tribe. As such, any ground disturbing activities associated with this proposed undertaking will be of concern at that location which include, but is not limited to, any areas used to store the planes or for operation and maintenance activities. My office has no concerns at the other two locations mentioned in the document as they are located outside of our traditional and ancestral territory.

My office formally requests an electronic copy of the draft Environmental Assessment once it is completed for our review and comments.

Thank you for considering our cultural heritage in your decision-making process.

If you have any questions feel free to email me at [redacted]

Sincerely,

Terry Clouthier Digitally signed by Terry Clouthier Date: 2020.03.04 15:32:19 -05'00'

The Delaware Nation
Historic Preservation Department
31064 State Highway 281
Anadarko, OK 73005
Phone (405)247-2448

May 28, 2020

To Whom It May Concern:

The Delaware Nation Historic Preservation Department received correspondence regarding the following referenced project(s).

Project(s): Seymour Johnson AFB Consultation & Draft EA for Contract Adversary Air

Our office is committed to protecting tribal heritage, culture and religion with particular concern for archaeological sites potentially containing burials and associated funerary objects.

The Lenape people occupied the area indicated in your letter prior to European contact until their eventual removal to our present locations. According to our files, the location of the proposed project does not endanger cultural, or religious sites of interest to the Delaware Nation. **Please continue with the project as planned** keeping in mind during construction should an archaeological site or artifacts inadvertently be uncovered, all construction and ground disturbing activities should immediately be halted until the appropriate state agencies, as well as this office, are notified (within 24 hours), and a proper archaeological assessment can be made.

Please note the Delaware Nation, the Delaware Tribe of Indians, and the Stockbridge Munsee Band of Mohican Indians are the only Federally Recognized Delaware/Lenape entities in the United States and consultation must be made only with designated staff of these three tribes. We appreciate your cooperation in contacting the Delaware Nation Historic Preservation Office to conduct proper Section 106 consultation. Should you have any questions, feel free to contact our offices at [redacted]

Erin N. Paden

Erin Paden
Director of Historic Preservation
Delaware Nation
31064 State Highway 281
Anadarko, OK 73005
Ph. [redacted]
[redacted]

From: [redacted]
To: [redacted]
Subject: RE: Follow Up on Seymour Johnson AFB Consultation & Draft EA for Contract Adversary Air
Date: Tuesday, June 2, 2020 4:47:14 AM
Attachments: Seymour Johnson AFB Consultation Draft EA for Contract Adversary Air (603 KB).msg

Good morning Chief Gray and Mr. Clouthier,

Please accept my apologies for not receiving your response from 4 March 2020 regarding the original consultation request.

It is worth mentioning here that, prior to the release of the draft EA, the proposed action was modified and the Newport News-Williamsburg International Airport (PHF) is no longer an alternative being considered in the environmental analysis; however, the proposed use of the Warning Area W-72 airspace, a portion of which is located off the Virginia coast, would remain the same as described in the original consultation request.

I have attached the Notice of Availability for the draft EA that was sent on 7 May 2020. Please note that the public comment period closes on 9 June 2020. For your convenience, I have provided a link to the document: https://www.seymourjohnson.af.mil/Portals/105/DEACAFAA.pdf

If there is any additional information you need, please don't hesitate to let me know.

Thank you,

CATHRYN PESENTI
Environmental Planner
Seymour Johnson Air Force Base
[redacted]

From: Terry Clouthier [redacted]
Sent: Thursday, May 28, 2020 2:55 PM
To: PESENTI, CATHRYN M GS-12 USAF ACC 4 CES/CEIEA [redacted]
Cc: Robert Gray [redacted]
Subject: RE: Follow Up on Seymour Johnson AFB Consultation & Draft EA for Contract Adversary Air

Good Afternoon,

My name is Terry Clouthier and I am the Cultural Resource Director for the Pamunkey Indian Tribe. Section 106, NEPA and NAGRA responses all fall under my job responsibilities and I am following up on this email sent to Chief Gray. My office received the original consultation request and responded on March 04, 2020. I have attached our response to this email.

Where is your agency currently at in regards to the draft EA that was being developed for this undertaking? As I mentioned in my response, my office looks forward to reviewing the draft EA and providing comments in regards to any plans for the Newport News-Williamsburg International

Airport (PHF) relating to this undertaking.

In the future, I respectfully request that your agency include a cc to my email on correspondence regarding Section 106, NEPA or NAGPRA in order for your requests to be responded to in a more timely manner.

Thank You.

Sincerely,

Terry Clouthier
Cultural Resource Director
Pamunkey Indian Tribe
1054 Pocahontas Trail
King William, VA 23086

From: PESENTI, CATHRYN M GS-12 USAF ACC 4 CES/CEIEA [mailto:[redacted]
Sent: Thursday, May 28, 2020 10:08 AM
To: [redacted]
Subject: Follow Up on Seymour Johnson AFB Consultation & Draft EA for Contract Adversary Air

Chief Gray,

I hope this message finds you well. I am writing to follow up with you and ensure you have received the information we have provided regarding the Air Force's proposal to establish contract adversary air operations in support of Seymour Johnson Air Force Base, North Carolina.

Please let me know if you have any comments, questions, or issues accessing the document.

Thank you,

CATHRYN PESENTI
Environmental Planner
Seymour Johnson Air Force Base
[redacted]

PAMUNKEY INDIAN TRIBE

Terry Clouthier
Cultural Resource
Director

TRIBAL GOVERNMENT
Tribal Office

1054 Pocahontas Trail
King William, VA 23086

(804) 843-2109
FAX (866) 422-3387

THPO File Number: 2020-10

Date: 06/03/2020

Colonel Donn C. Yates
Commander, 4th Fighter Wing
Department of the Airforce
1600 Wright Brothers Ave.
Seymour Johnson AFB, NC 27531

RE: Adversary Air Sorties (ADAIR). Seymour Johnson AFB, NC

Dear Colonel Yates,

Thank you for contacting the Pamunkey Indian Tribe regarding the proposed undertaking to contract the support of approximately 2590 ADAIR sorties annually out of one of three regional airports: Kinston Regional Jetport (ISO), Fayetteville Regional Airport (FAY) or Newport News-Williamsburg International Airport (PHF) and for providing the draft Environmental Assessment (EA). My office offers the following comments on the draft EA.

As the preferred alternative is to utilize the Kinston Regional Jetport (ISO), our concerns relating to direct impacts to cultural, historical and traditional properties are addressed for this proposed undertaking as this location is not within our traditional area. If the ISO preferred alternative is not utilized and the Newport News-Williamsburg International Airport (PHF) is chosen as the new location, please re-initiate consultation with my office regarding this undertaking.

The use of airspace within the Farmville Military Operation Area (MOA) and Warning Area W-72, which will be included as part of the ISO sorties, still presents possible indirect impacts to cultural, historical and traditional properties and both of these locations are within our traditional area. My office has reviewed the excellent EA and concurs with the analysis conducted that use of these airspaces will not directly or indirectly affect cultural, historical or traditional properties based on all of the environmental concerns addressed within the document as they independently relate to cultural, historical and traditional properties.

In the extremely unlikely event that any human remains or cultural, historical or traditional properties are inadvertently discovered during activities associated with the Farmville MOA or Warning Area W-72 airspaces, please cease all operations and contact our office immediately to re-initiate consultation.

Thank you for considering our cultural heritage in your decision-making process.

If you have any questions feel free to email me at [redacted]

Sincerely,

Terry Clouthier

Digitally signed by Terry Clouthier
Date: 2020.06.03 14:56:59 -04'00'

2

Appendix A-5

Coastal Zone Management Act Federal Consistency Determination

This page intentionally left blank

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

27 Mar 20

Mr. Dennis G. Goodson, P.E.
Deputy Base Engineer
4th Civil Engineer Squadron
1095 Peterson Avenue
Seymour Johnson Air Force Base, NC 27531-2355

Mr. Daniel Govoni
Federal Consistency Review Coordinator
Coastal Management Program
North Carolina Department of Environmental Quality
217 West Jones Street
Raleigh, NC 27603

North Carolina Coastal Area Management Federal Consistency Determination for Combat Adversary Air in Support of Seymour Johnson Air Force Base, North Carolina

This document provides North Carolina with a Consistency Determination under the Coastal Zone Management Act (CZMA) section 307(c)(1) (or [2]) and 15 Code of Federal Regulations (CFR) Part 930, subpart C, for the positioning of contract adversary air (ADAIR) at two potential locations in North Carolina: the Kinston Regional Jetport (ISO) and Fayetteville Regional Airport (FAY) to support training for Seymour Johnson Air Force Base (AFB), North Carolina. The information in this Consistency Determination is provided pursuant to 15 CFR § 930.39. The federally approved North Carolina Coastal Management Program administers enforceable laws, regulations, and policies of the state's certified coastal management program. The State of North Carolina can require that federal actions be consistent with the state's Coastal Zone Management Program's laws and enforceable policies. The North Carolina Department of Environmental Quality is the lead agency for the state's Coastal Management Program.

Proposed Federal Agency Activity

A Draft Environmental Assessment (EA) and proposed Finding of No Significant Impact (FONSI) are being prepared by the United States Air Force to analyze the impacts of providing dedicated contract ADAIR sorties for Combat Air Forces (CAF) training in support of Seymour Johnson AFB, North Carolina. Seymour Johnson AFB does not have the capacity to host contract ADAIR operations on base; therefore, three civilian airports are being evaluated as suitable for possible use by a contract ADAIR service provider to support Seymour Johnson AFB operations. The airports being considered are ISO and FAY in North Carolina and Newport News-Williamsburg International Airport in Virginia. Contract ADAIR would also include training sorties in special use airspace and offshore Warning Areas located off the North Carolina coastline.

1

The Proposed Action would provide dedicated contract ADAIR sorties for CAF training in support of Seymour Johnson AFB to address shortfalls in F-15E pilot training and production capability and to provide the necessary capability and capacity to employ adversary tactics across the training spectrum from basic fighter maneuvers to higher-end, advanced training missions. Training scenarios would include the use of combat tactics and procedures that differ from CAF tactics to simulate an opposing force. The elements affecting the airspace include airspace use and defensive countermeasures.

The Proposed Action would include the establishment of an estimated 91 contracted maintainers and 18 contracted pilots who would operate an estimated 14 aircraft. Three aircraft types (F-5, A-4K, and T-59 Hawk) have been identified as capable of providing contract ADAIR support to F-15E CAF aircrews stationed at Seymour Johnson AFB. One or a combination of these aircraft types may be operated by a contractor at the selected airport in support of contract ADAIR training, and selection would be based on performance capabilities of the aircraft and how those capabilities best meet mission training requirements at the installation. The facilities proposed for use at either of the two North Carolina civilian airports would include the required ramp space; maintenance space; operational space; petroleum, oil, and lubricant storage; runway access; and associated parking to support the Proposed Action. Approximately 2,590 sorties annually would support training activities within nearby special use airspace including offshore Warning Areas W-72, W-161, W-177, and W-122 (**Figure 1**). Contract ADAIR aircraft would employ defensive countermeasures (e.g., chaff and flares) in all Warning Areas. Countermeasures would not be used in overland special use airspace. No development or ground disturbance would occur on land beneath the special use airspace.

Consistency Determination

Based on the information presented above and the preliminary results of the analysis in the EA, the United States Air Force finds that the Proposed Action is consistent, to the maximum extent practicable, with the enforceable policies of the North Carolina Coastal Management Program.

Pursuant to 15 CFR § 930.41, the North Carolina Coastal Management Program has 60 days from the receipt of this letter in which to concur with or object to this Federal Consistency Determination or to request an extension under 15 CFR § 930.41(b). North Carolina's concurrence will be presumed if its response is not received by Seymour Johnson AFB on the 60th day from receipt of this determination.

Please provide your response to Ms. Cathryn Pesenti at 4 CES/CEIEA, 1095 Peterson Avenue, Seymour Johnson AFB, NC 27531, or by electronic mail to cathryn.pesenti@us.af.mil.

GOODSON.DENNIS.G.1229806528 Digitally signed by GOODSON.DENNIS.G.1229806528 Date: 2020.03.26 17:37:14 -04'00'

DENNIS G. GOODSON, P.E.
Deputy Base Civil Engineer

2

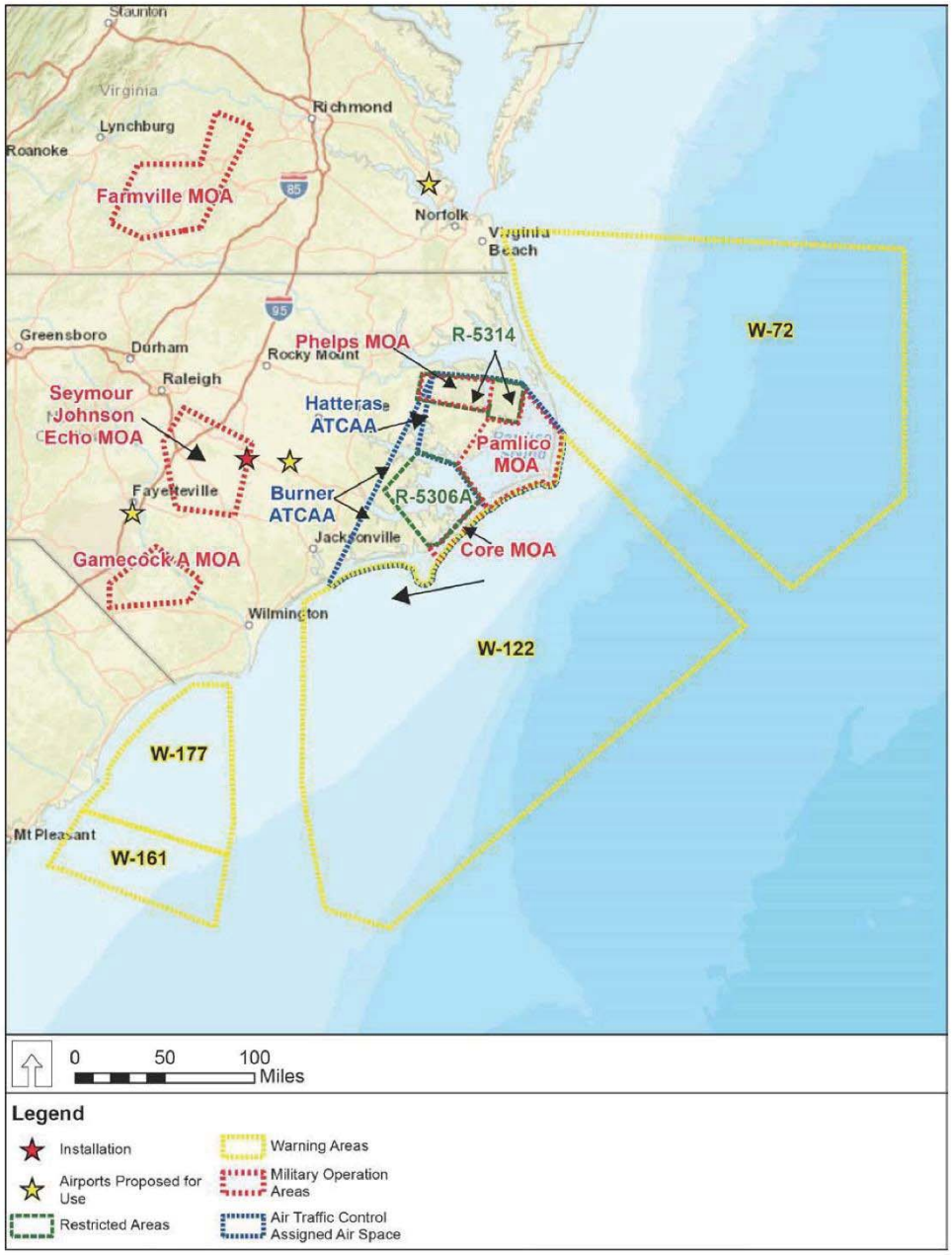


Figure 1. Special Use Airspace Proposed for Contract Adversary Air Sorties.

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

30 March 2020

Mr. Dennis G. Goodson, P.E.
Deputy Base Engineer
4th Civil Engineer Squadron
1095 Peterson Avenue
Seymour Johnson Air Force Base, NC 27531

Ms. Bettina Rayfield
Commonwealth of Virginia
Department of Environmental Quality
P.O. Box 1105
Richmond VA 23218

Dear Ms. Rayfield

As part of an Environmental Assessment for Combat Air Forces Contract Adversary Air in Support of Seymour Johnson Air Force Base, with proposed actions at Newport News-Williamsburg International Airport and off the Virginia coast, we have prepared a federal consistency determination pursuant to the Coastal Zone Management Act (CZMA) of 1972. The determination is attached.

Please forward your comments or request for additional information to Ms. Cathryn Pesenti at 4 CES/CEIEA, 1095 Peterson Avenue, Seymour Johnson AFB, North Carolina 27531 or by electronic mail to cathryn.pesenti@us.af.mil. We request your response within 60 days of receipt of this consistency determination for inclusion into the Environmental Assessment. Thank you in advance for your assistance.

Sincerely

GOODSON.DENNIS.G.1229806528

Digitally signed by GOODSON.DENNIS.G.1229806528
Date: 2020.03.30 16:15:11 -04'00'

DENNIS G. GOODSON, P.E.

Attachment:
Coastal Zone Management Act (CZMA) Federal Consistency Determination

Coastal Zone Management Act (CZMA) Federal Consistency Determination for Combat Adversary Air at Newport News-Williamsburg International Airport, Virginia in Support of Seymour Johnson Air Force Base, North Carolina

This document provides the Commonwealth of Virginia with a Consistency Determination under the Coastal Zone Management Act (CZMA) section 307(c)(1) (or [2]) and 15 Code of Federal Regulations (CFR) Part 930, subpart C, for the potential positioning of contract adversary air (ADAIR) at the Newport News-Williamsburg International Airport – Patrick Henry Field (PHF), Virginia, to support training for Seymour Johnson Air Force Base (AFB), North Carolina. The information in this Consistency Determination is provided pursuant to 15 CFR § 930.39. The federally approved Virginia Coastal Management Program is a network of Virginia state agencies and local governments that administers enforceable laws, regulations, and policies that protect the state's coastal resources and fosters sustainable development. The Commonwealth of Virginia can require that federal actions are consistent with the state's Coastal Zone Management Program's laws and enforceable policies. The Virginia Department of Environmental Quality (DEQ) is the lead agency for Virginia's networked Coastal Zone Management Program.

Proposed Federal Agency Activity

A Draft Environmental Assessment (EA) and proposed Finding of No Significant Impact (FONSI) is being prepared by the United States Air Force (Air Force) to analyze the impacts of providing dedicated contract ADAIR sorties for Combat Air Forces (CAF) training for Seymour Johnson AFB, North Carolina. Seymour Johnson AFB does not have the capacity to host contract ADAIR operations on base; therefore, three civilian airports are being evaluated as suitable for possible use by a contract ADAIR service provider to support Seymour Johnson AFB operations. Locations of these three airports include PHF, as well as Kinston Regional Jetport (ISO) and Fayetteville Regional Airport (FAY) in North Carolina. Contract ADAIR would also include training sorties in offshore Warning Areas located off the southeast Virginia coastline.

The Proposed Action would provide dedicated contract ADAIR sorties for CAF training in support of Seymour Johnson AFB to address shortfalls in F-15E pilot training and production capability and to provide the necessary capability and capacity to employ adversary tactics across the training spectrum from basic fighter maneuvers to higher-end, advanced training missions. Training scenarios would include the use of combat tactics and procedures that differ from CAF tactics to simulate an opposing force. The elements affecting PHF include contract ADAIR aircraft, facilities, maintenance, personnel, and sorties. The elements affecting the airspace include airspace use and defensive countermeasures.

The Proposed Action would include the establishment of an estimated 91 contracted maintainers and 18 contracted pilots who would operate an estimated 14 aircraft. Three aircraft types (F-5, A-4K, and T-59 Hawk) have been identified as capable of providing contract ADAIR support to F-15E CAF aircrews stationed at Seymour Johnson AFB. One or a combination of these aircraft types may be operated by a contractor at PHF in support of ADAIR training for contract ADAIR selection based on performance capabilities of the aircraft and how those capabilities best meet mission training requirements at the installation. The facilities proposed for use at PHF would include the required ramp space; maintenance space; operational space; petroleum, oil, and lubricant storage; runway access; and associated parking to support the Proposed Action. Approximately 2,590 sorties annually would support training activities within nearby special use airspace including Warning Areas W-72, W-161, W-177, and W-122 (**Figure 1**). Contract ADAIR aircraft would employ defensive countermeasures (e.g., chaff and flares) in all Warning Areas.

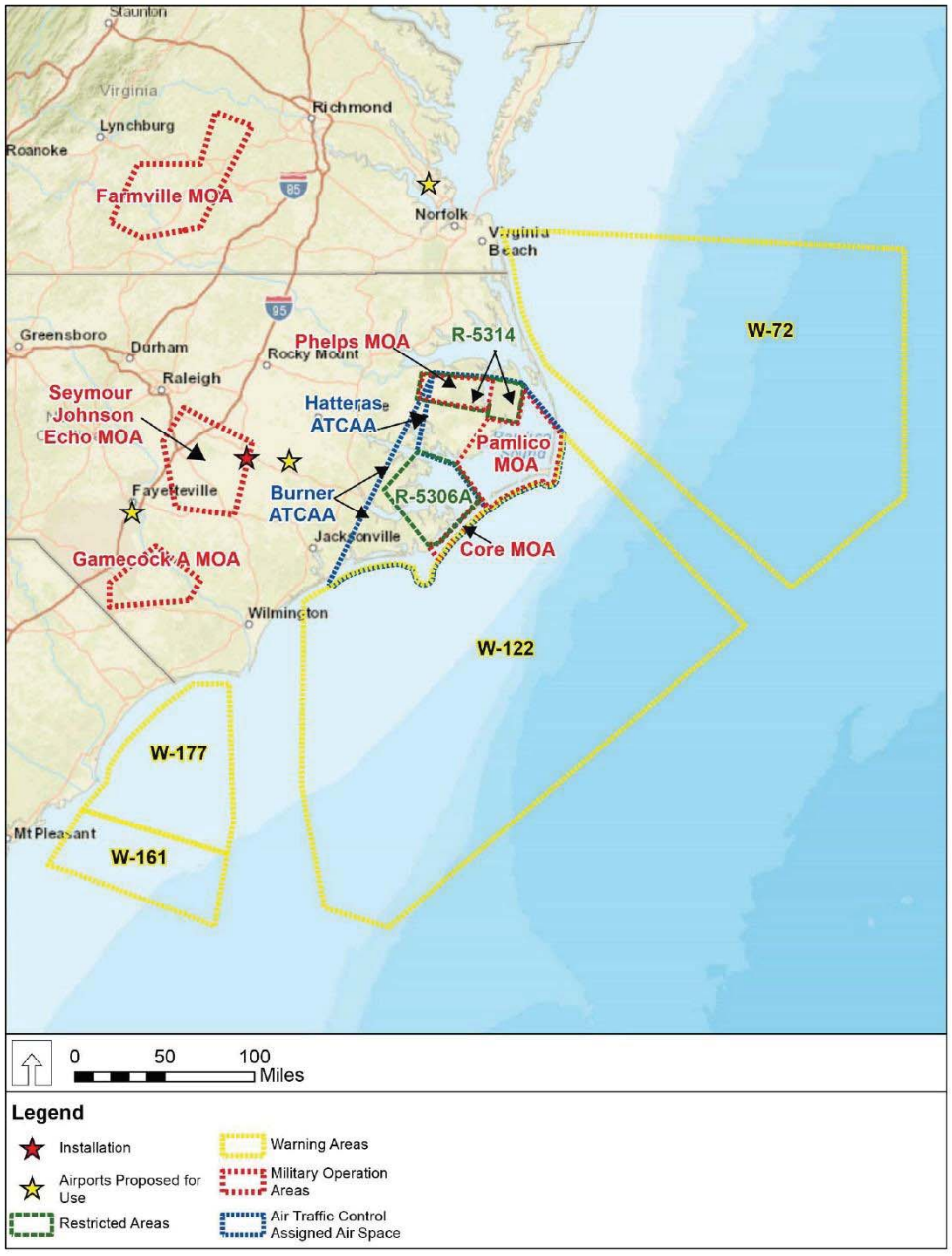


Figure 1. Special Use Airspace Proposed for Contract Adversary Air Sorties.

2

The purpose of the Proposed Action is to provide dedicated contract ADAIR sorties to improve the quality of training and readiness of pilots of the 4th Fighter Wing at Seymour Johnson AFB. Contract ADAIR support would employ adversary tactics across the training spectrum from basic fighter maneuvers to higher-end, advanced, simulated, combat training missions. By providing a dedicated contract ADAIR capability, F-15E pilots would gain more realistic air-to-air training during their training syllabus tasks. Dedicated contract ADAIR would also allow the unit to free up resources used to self-generate ADAIR and more effectively use those available flying hours. Additionally, other Air Force (4th generation) units tasked to provide ADAIR training support at Seymour Johnson AFB could recapitalize valuable flying hours to focus on increasing their own levels of proficiency and readiness.

The need for action is to provide better and more realistic training for the F-15E flight training program at Seymour Johnson AFB. Dedicated contract ADAIR is critical to improving pilot readiness as it provides realistic training opportunities to employ CAF tactics and procedures that optimize the training value of every mission. Contract ADAIR can be used in basic building block syllabus sorties or the very advanced and fluid environment of multi-aircraft air combat required by the training syllabus.

This request for a Federal Consistency Determination is related to Alternative 3 – Newport News-Williamsburg International Airport – Patrick Henry Field, which is located in Virginia, and the special use airspace located off the Virginia Coast – W-72. Alternative 3 is described below.

Alternative 3. Contract ADAIR capabilities would be established using an estimated 14 aircraft providing 2,590 annual sorties for Seymour Johnson AFB operating out of PHF located in the southeastern part of Virginia between the cities of Newport News and Williamsburg, Virginia. The contract ADAIR aircraft, maintenance, personnel, sorties, airspace use, and defensive countermeasures would be the same as previously described under the Proposed Action. There are two runways at PHF, Runway 07/25 (8,003 feet [ft] long by 150 ft wide) and Runway 02/20 (6,526 ft long by 150 ft wide). The airport is equipped with high-intensity runway lights, runway end identifier lights, and land and hold short operations as well as a medium-intensity approach lighting system with runway alignment indicator lights and visual aids on both runways. PHF has four separate aircraft parking aprons totaling 266,000 square yards. There are two existing fixed base operators (FBOs) that offer a full range of services. The two FBOs lease nearly 35,000 square feet of maintenance hangars as well as office/shop space and land. If sufficient facilities are not available at PHF, the contractor may be required to fund the renovation or construction of additional facilities. Separate environmental analysis would be completed as required. The airport is approximately 111 nautical miles (NM) from Seymour Johnson AFB's primary use airspace (W-122).

Environmental Consequences of the Proposed Action

Potential effects to the land or water uses or natural resources of Virginia from the Proposed Action are provided in the EA in the following:

- **Section 3.1.3 Water Resources.** Under the Proposed Action, there would be no ground-disturbing activities. The proposed additional contract ADAIR aircraft and personnel and associated operational and maintenance activities would not affect water quality or quantity. Under the airspace, the use of defensive countermeasures has been found to be nontoxic. Due to the rare and infrequent nature of fuel dumps as well as in-place safety precautions such as altitude restrictions, these emergency procedures are not likely to adversely affect water resources.

- **Section 3.1.4 Soil Resources.** Protection of soils was considered when evaluating potential impacts of the Proposed Action in terms of alteration of soil composition, structure, or function and any accumulation of chaff material. Effects on soils would be adverse if they alter the soil composition, structure, or function within the environment or accumulate in the soil. Under the Proposed Action, there would be no ground-disturbing activities to affect soil resources and contract ADAIR training would occur over the Atlantic Ocean at least 3 NM from shore.
- **Section 4.4 Air Quality**. Increased air emissions resulting from contract ADAIR operations at PHF are not considered significant under Alternative 3. The Proposed Action would not interfere with the region's ability to maintain compliance with National Ambient Air Quality Standards for attainment area pollutants. Warning Area W-72 is not in regulatory control areas and is beyond state jurisdictional boundaries; moreover, modeling indicates that emissions would be dispersed over a wide area and are not expected to have significant impacts on air quality within the Warning Areas.
- **Section 4.5 Biological Resources**. Noise impacts from increased operations at PHF would have a negligible, short- and long-term effect on wildlife. Risk reduction implementation measures associated with the bird/aircraft strike hazard (BASH) program would continue to reduce BASH potentially resulting in a minor impact on birds and other wildlife. No federally listed species are present at PHF; therefore, no impacts are anticipated to any listed species from aircraft operations at the airfield. A slight increase in noise and sonic booms from supersonic flights is expected in the Warning Areas during training activities; however, these negligible noise increases would not impact wildlife in the Warning Areas. The use of chaff and flares would have no direct impact on wildlife; however, small plastic caps and pistons associated with the use of defensive countermeasures could make it to the surface of the Atlantic Ocean. The Air Force has found that these small residual plastic components could be consumed by seabirds, marine mammals, and sea turtles. As such, the use of defensive countermeasures during training activities in the Warning Areas may affect but is not likely to adversely affect listed species beneath the Warning Areas. There would be no impact on designated Critical Habitat. Letters requesting concurrence with this determination were sent to the United States Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS).
- **Section 4.6 Land Use.** Under the Proposed Action, the annual number of operations would increase by 10 percent and would not impact the operational capacity or necessitate changes to the locations or dimensions of the airspace around PHF. Potential impacts on the airspace around the airfield for Alternative 3 would be negligible. Likewise, the Warning Areas proposed for use have the capacity and the dimensions necessary to support additional sorties; therefore, negligible impacts on airspace are anticipated for Alternative 3.
- **Section 4.10 Hazardous Materials and Wastes and Toxic Substances**. Hazardous wastes generated as a result of contract ADAIR operations would be stored and disposed in accordance with the PHF *Hazardous Waste Management Plan*; therefore, no impacts from managing hazardous waste are expected. It is not expected that construction or renovation would be required; therefore, no impacts are expected from asbestos-containing materials (ACM) and lead-based paint (LBP). If ACM or LPB are encountered, removal and disposal would be in accordance with the Virginia Department of Labor and Industry's regulations for ACM and applicable federal, state, and local laws for LBP. Lighting fixtures containing polychlorinated biphenyls would be disposed in accordance with federal, state, and local laws, which would result in a long-term, minor, beneficial

impact. There is a low potential for radon to pose a health hazard at PHF. As such, no impacts from radon are anticipated. There is no environmental contamination known to occur within the project area.

Enforceable Policies

The Virginia Coastal Resources Management Program contains the below enforceable policies (A-I).

A. Fisheries Management

This program stresses the conservation and enhancement of finfish and shellfish resources and the promotion of commercial and recreational fisheries to maximize food production and recreational opportunities. This program is administered by the Marine Resources Commission (VMRC) (Virginia Code § 28.2-200 through § 28.2-713) and the DGIF (Virginia Code § 29.1-100 through § 29.1-570). The State Tributyltin (TBT) Regulatory Program monitors boating activities and boat painting activities to ensure compliance with TBT regulations promulgated pursuant to the amendment. The MRC, DGIF, and Virginia Department of Agriculture and Consumer Services share enforcement responsibilities (Virginia Code § 3.1-249.59 through § 3.1-249.62).

The Proposed Action would have no impact on marine fish resources. The increased use of chaff and flares does increase the potential for plastics associated with chaff and flares to end up in aquatic ecosystems and in the ocean; however, the amount of plastic material expended in the use of chaff and flares is small, the size of the plastic material is also very small, and most of the material would fall to the ocean floor at depths below which most fish species occur. In addition, while the use of chaff and flares under the Proposed Action may have a minor adverse impact on fish species that are large enough to ingest plastic pieces that fall to the ocean floor on the small portion of the continental shelf that overlaps the boundaries of the Warning Areas, the likelihood of any large fish species encountering plastic caps from chaff and flares is extremely low.

The use of defensive countermeasures has been found to be nontoxic. Chaff chemical composition, rate of decomposition, and tendency to leach toxic chemicals under various situations paired with baseline substrate chemistry and conditions are factors that could potentially alter substrate chemistry. Silica (silicon dioxide), aluminum, and stearic acid are major components of chaff with minor quantities of copper, manganese, titanium, vanadium, and zinc in the aluminum chaff coating. All are generally prevalent in the environment, and all but titanium are either found in plants and animals and/or necessary essentials for their growth. Silica does not present a concern to chemistry as it is found in silicate minerals, the most common mineral group on Earth. Silica is more stable in acidic environments than alkaline; however, ocean waters are slightly more alkaline than neutral (USEPA, 2019). Aluminum is also very abundant in the earth's crust, forming common minerals like feldspars, micas, and clays. While acidic and extremely alkaline substrates increase the solubility of aluminum, what is left eventually oxidizes to aluminum oxide which is insoluble. Stearic acid is used in conjunction with palmitic acid to produce an anticlumping compound for chaff fibers and both degrade when exposed to light and air (Air Force, 1997). The primary material in flares is magnesium, which is not highly toxic, and it is highly unlikely organisms would ingest flare materials. Some flares utilize impulse cartridges and initiates which contain chromium and sometimes lead; the amount of these substances is expected to be very small and dispersed over great distances.

Due to the rare and infrequent nature of fuel dumps as well as in-place safety precautions such as altitude restrictions, these emergency procedures are not likely to adversely affect water resources.

The Proposed Action would not include the use of marine antifoulant paints or other materials containing TBT.

B. Subaqueous Lands Management

This management program for subaqueous lands establishes conditions for granting or denying permits to use state-owned bottomlands based on considerations of potential effects on marine and fisheries resources, wetlands, adjacent or nearby properties, anticipated public and private benefits, and water quality standards established by the Department of Environmental Quality (DEQ), Water Division. The program is administered by the VMRC (Virginia Code § 28.2–1200 through § 28.2–1213).

The Proposed Action would not impact subaqueous lands.

C. Wetlands Management

The purpose of the wetlands management program is to preserve tidal and non-tidal wetlands, prevent their despoliation, and accommodate economic development in a manner consistent with wetlands preservation.

The locations proposed for use on PHF are not located near wetlands, and no ground-disturbing activities are proposed. There would be no need to fill or alter wetlands on PHF; therefore, there are no impacts associated with wetlands on PHF under the Proposed Action.

D. Dunes Management

Dune protection is carried out pursuant to the Coastal Primary Sand Dune Protection Act and is intended to prevent destruction or alteration of primary dunes. This program is administered by the Marine Resources Commission (Virginia Code § 28.2–1400 through § 28.2–1420).

There are no sand dunes located in the project area; therefore, no impacts are anticipated.

E. Nonpoint Source Pollution Control

Virginia's Erosion and Sediment Control Law requires soil-disturbing projects to be designed to reduce soil erosion and to decrease inputs of chemical nutrients and sediments to the Chesapeake Bay, its tributaries, and other rivers and waters of the Commonwealth. This program is administered by DEQ (Virginia Code § 62.1–44.15:51 et seq.).

There would be no ground-disturbing activities, and therefore no nonpoint source pollution would be generated.

F. Point Source Pollution Control

The point source program is administered by the State Water Control Board (DEQ) pursuant to Virginia Code § 62.1–44.15. Point source pollution control is accomplished through the implementation of the National Pollutant Discharge Elimination System permit program established pursuant to Section § 402 of the federal Clean Water Act and administered in Virginia as the Virginia Pollutant Discharge Elimination System permit program. The Water Quality Certification requirements of § 401 of the Clean Water Act of 1972 is administered under the Virginia Water Protection Permit program.

This Proposed Action does not involve point source discharges subject to Section 402 of the Clean Water Act.

G. Shoreline Sanitation

The purpose of this program is to regulate the installation of septic tanks, set standards concerning soil types suitable for septic tanks, and specify minimum distances that tanks must be placed away from streams, rivers, and other waters of the Commonwealth.

The Proposed Action does not involve septic tanks.

H. Air Pollution Control

The program implements the Federal Clean Air Act to provide a legally enforceable State Implementation Plan for the attainment and maintenance of the National Ambient Air Quality Standards (NAAQS). This program is administered by the State Air Pollution Control Board (DEQ) (Virginia Code § 10.1–1300 through § 10.1–1320).

The Proposed Action will conform to the Virginia State Implementation Plan. The region is in attainment for the current ozone standard. Because of the historical nonattainment and maintenance designations for ozone, and because the 1997 Ozone NAAQS may be reinstated at this location in the near future, the primary pollutants of concern are nitrogen oxides (NO_x) and volatile organic compounds (VOCs); however, since VOC and NO_x emissions for the Proposed Action are below the 100 tons per year (tpy) *de minimis* threshold, a General Conformity determination will not be required. While carbon monoxide (CO) exceeded the *de minimis* threshold under two potential scenarios, PHF is in an attainment area for CO, thus the conformity rule is not applicable and emissions are well below the Prevention of Significant Deterioration threshold, indicating the Proposed Action should not interfere with region's ability to comply with the CO NAAQS. Furthermore, CO emissions were less than 1 percent of local (Newport News) emissions. Given the small regional contribution and the lack of a CO history in the Hampton Roads Air Quality Control Region (never a nonattainment or maintenance area for CO), the higher CO emissions associated with two of the emission scenarios are not considered significant. For the remaining pollutants, the annual emission increases are not considered significant as they are below the 100 tpy *de minimis* threshold.

I. Coastal Lands Management

Coastal Lands Management is a state-local cooperative program administered by DEQ's Water Division and 84 localities in Tidewater, Virginia established pursuant to the Chesapeake Bay Preservation Act (Virginia Code § 62.144.15:67–62.1-44.15:79) and Chesapeake Bay Preservation Area Designation and Management Regulations (Virginia Administrative Code 9 Virginia Code § 25-830-10 et seq.).

The Proposed Action does not involve land development.

Advisory Policies for Geographic Area of Particular Concern

A. Coastal Natural Resource Areas

Coastal Natural Resource Areas are areas that have been designated as vital to estuarine and marine ecosystems and/or are of great importance to areas immediately inland of the shoreline. These areas receive special attention from the Commonwealth because of their conservation, recreational, ecological, and aesthetic values. These areas include the following resources: wetlands, aquatic spawning, nursing, and feeding grounds, coastal primary sand dunes, barrier islands, significant wildlife habitat areas, public recreation areas, sand gravel resources, and underwater historic sites.

The project area may contain spawning, nursing, and/or feeding grounds for finfish and shellfish. As previously discussed, a minor adverse impact on fish species that are large enough to ingest plastic pieces from chaff and flare use that fall to the ocean floor on the small portion of the continental shelf that overlaps the boundaries of the Warning Areas could occur; however, the likelihood of any large fish species encountering plastic caps from chaff and flares is extremely low.

Implementation of the Proposed Action involves compliance with Section 7 of the Endangered Species Act, and implementing regulations (50 CFR Part 402), and requires communication with the USFWS and/or NMFS in cases where a federal action could affect listed threatened or endangered species, species proposed for listing, or candidates for listing. The primary focus of this consultation is to request a determination of whether any of these species occur in the proposal area. The Air Force found that the small residual plastic components from chaff and flare use could be consumed by seabirds, marine mammals, and sea turtles; however, due to the large area over which chaff and flare would be used (over 74,000 square miles) and the small increase in use from current levels (4.8 percent), the Air Force has determined that the use of defensive countermeasures during training activities in the Warning Areas may affect but is not likely to adversely affect listed marine mammals and sea turtles. It is not expected that either aircraft movement or noise emissions, especially at higher altitudes, would elicit a response from marine mammals or sea turtles. Noise from contract ADAIR aircraft would not increase substantially (including from sonic booms) in the Warning Areas and would therefore have no impacts on the listed marine mammal species and sea turtles. Letters requesting concurrence with this determination were sent to the USFWS and NMFS. There would be no impact on designated Critical Habitat.

The Magnuson-Stevens Fishery Conservation and Management Act (16 United States Code § 1801 et seq.) established a management system for marine fisheries resources in the United States. Congress charged National Oceanic and Atmospheric Administration Fisheries and fishery management councils, along with other federal and state/Commonwealth agencies and the fishing community, to identify habitats essential to managed species, which include marine, estuarine, and anadromous finfish, mollusks, and crustaceans. These habitats, referred to as Essential Fish Habitat (EFH), include "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." No in-water activities are proposed. The additional contract ADAIR sorties in the Warning Areas, including the use of defensive countermeasures, would have no impact on EFH.

B. Coastal Natural Hazard Areas

This policy covers areas vulnerable to continuing and severe erosion and areas susceptible to potential damage from wind-, tidal-, and storm-related events including flooding. New buildings and other structures should be designed and sited to minimize the potential for property damage due to storms or shoreline erosion. The areas of concern are highly erodible areas and coastal high hazard areas, including flood plains.

The Proposed Action does not involve construction of buildings or structures in coastal natural hazard areas.

C. Waterfront Development Areas

These areas are vital to the Commonwealth because of the limited number of areas suitable for waterfront activities. The areas of concern are commercial ports, commercial fishing piers, and community waterfronts.

The Proposed Action would not impact areas suitable for waterfront activities.

Advisory Policies for Shorefront Access Planning and Protection

A. Virginia Public Beaches

These public shoreline areas will be maintained to allow public access to recreational resources.

There are no public beaches within the project area; consequently, the Proposed Action would not affect public access to beaches.

B. Virginia Outdoors Plan (VOP)

The VOP, which is published by Virginia's Department of Conservation and Recreation (DCR), identifies recreational facilities in the Commonwealth that provide recreational access. Prior to initiating any project, consideration should be given to the proximity of the project site to recreational resources identified in the VOP.

The Proposed Action is not located near recreational resources and would have no impact on the VOP.

C. Parks, Natural Areas, and Wildlife Management Areas

The recreational values of these areas should be protected and maintained.

There are no parks, natural areas, or wildlife management areas on PHF or beneath the Warning Area proposed for use.

Under the Noise Scenarios, increases in noise from the addition of contract ADAIR flight operations in the vicinity of PHF airfield are anticipated. These impacts are primarily the elongation of the Day-Night Average Sound Level (DNL) contours along the extended centerline of Runway 0/25 and the slight expansion for the DNL contours perpendicular to the runway during ADAIR straight-in arrivals and straight-out departures. This elongated expansion increases from the High, Medium, and Low Noise Scenarios would increase the amount of Newport News Park within noise contours (**Figures 2**, **3**, and **4**). Newport News Park is adjacent to the northeastern boundary of airport property and is already within existing noise contours. Current airfield operations at PHF exceed 64,700 operations annually, and the proposed increase from contract ADAIR represents only a 9.6 percent increase from existing operations. While the increase in some areas would be noticeable, these areas are not near camping, picnic, or other recreational areas of the park. The increased operations at PHF are not expected to impact other parks or natural areas and wildlife management areas.

D. Waterfront Recreational Land Acquisition

It is the policy of the Commonwealth to protect areas, properties, lands, or any estate or interest therein, of scenic beauty, recreational utility, historical interest, or unusual features which may be acquired, preserved, and maintained for the citizens of the Commonwealth.

The Proposed Action does not limit the ability of the Commonwealth in any way to acquire, preserve, or maintain waterfront recreational lands.

E. Waterfront Recreational Facilities

Boat ramps, public landings, and bridges shall be designed, constructed, and maintained to provide points of water access when and where practicable.

The Proposed Action does not involve the design, construction, or maintenance of any boat ramps, public landings, or bridges.

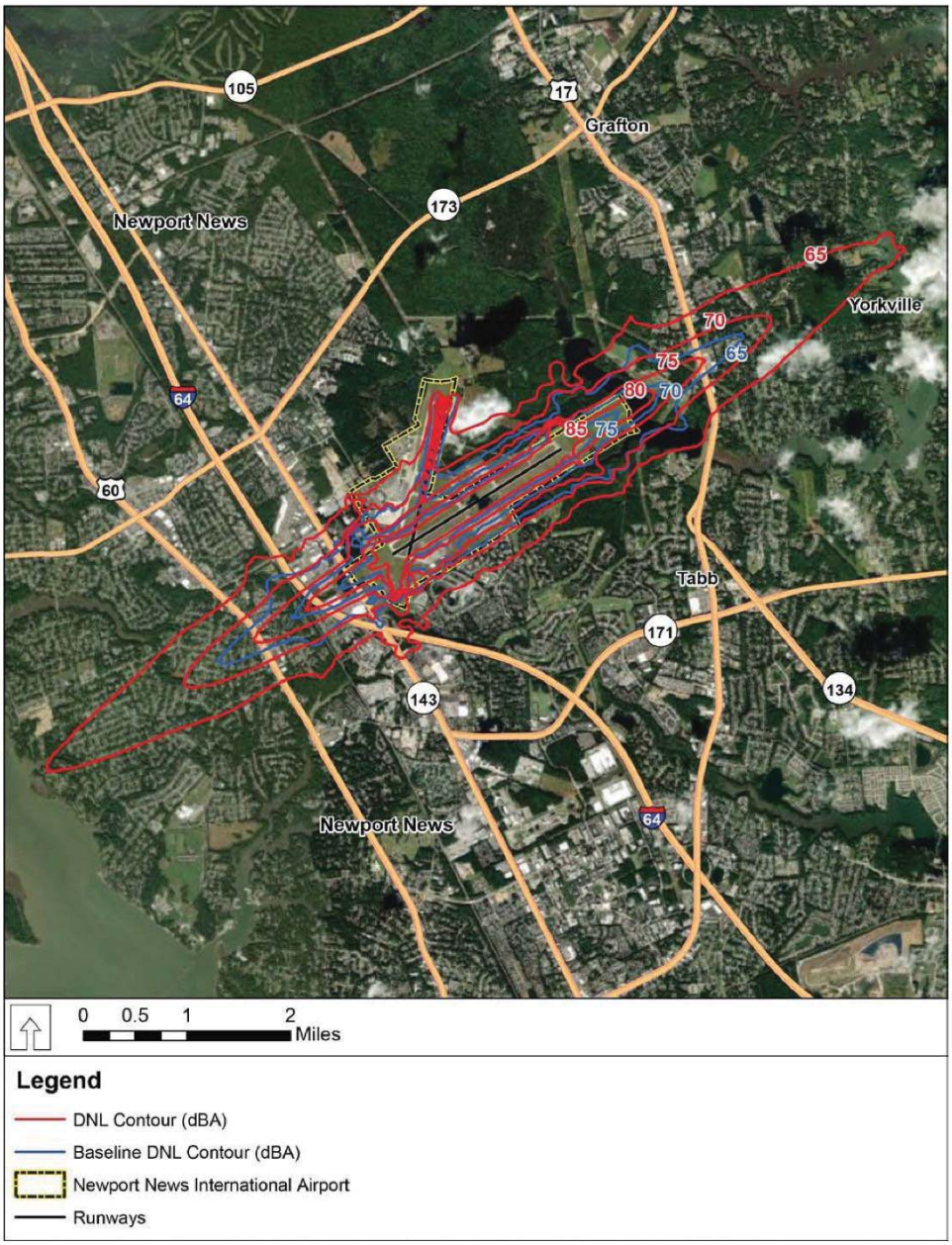


Figure 2. Comparison of High Noise Scenario and Existing Day-Night Average Sound Level Contours at Newport News-Williamsburg International Airport – Patrick Henry Field.

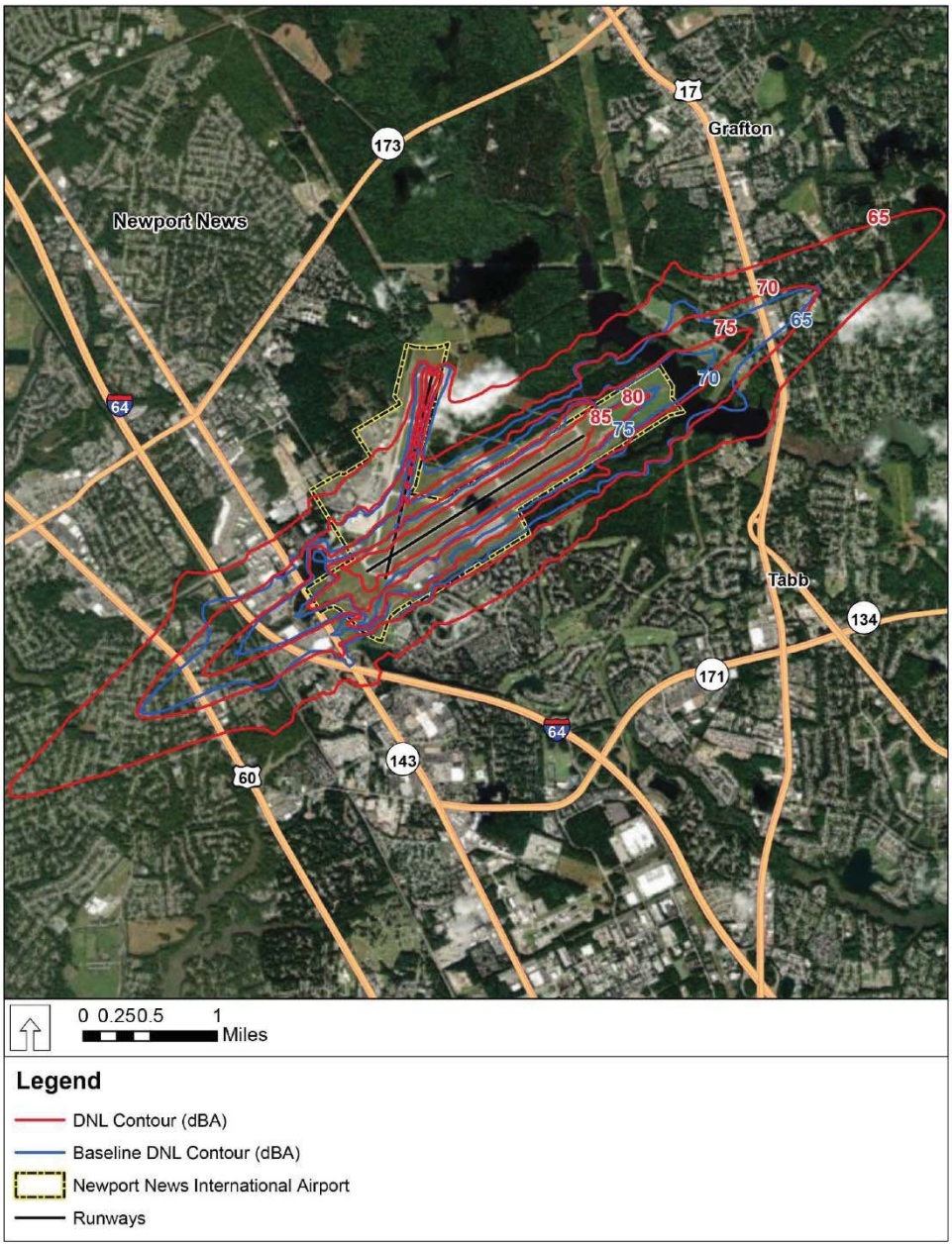


Figure 3. Comparison of Medium Noise Scenario and Existing Day-Night Average Sound Level Contours at Newport News-Williamsburg International Airport – Patrick Henry Field.

11

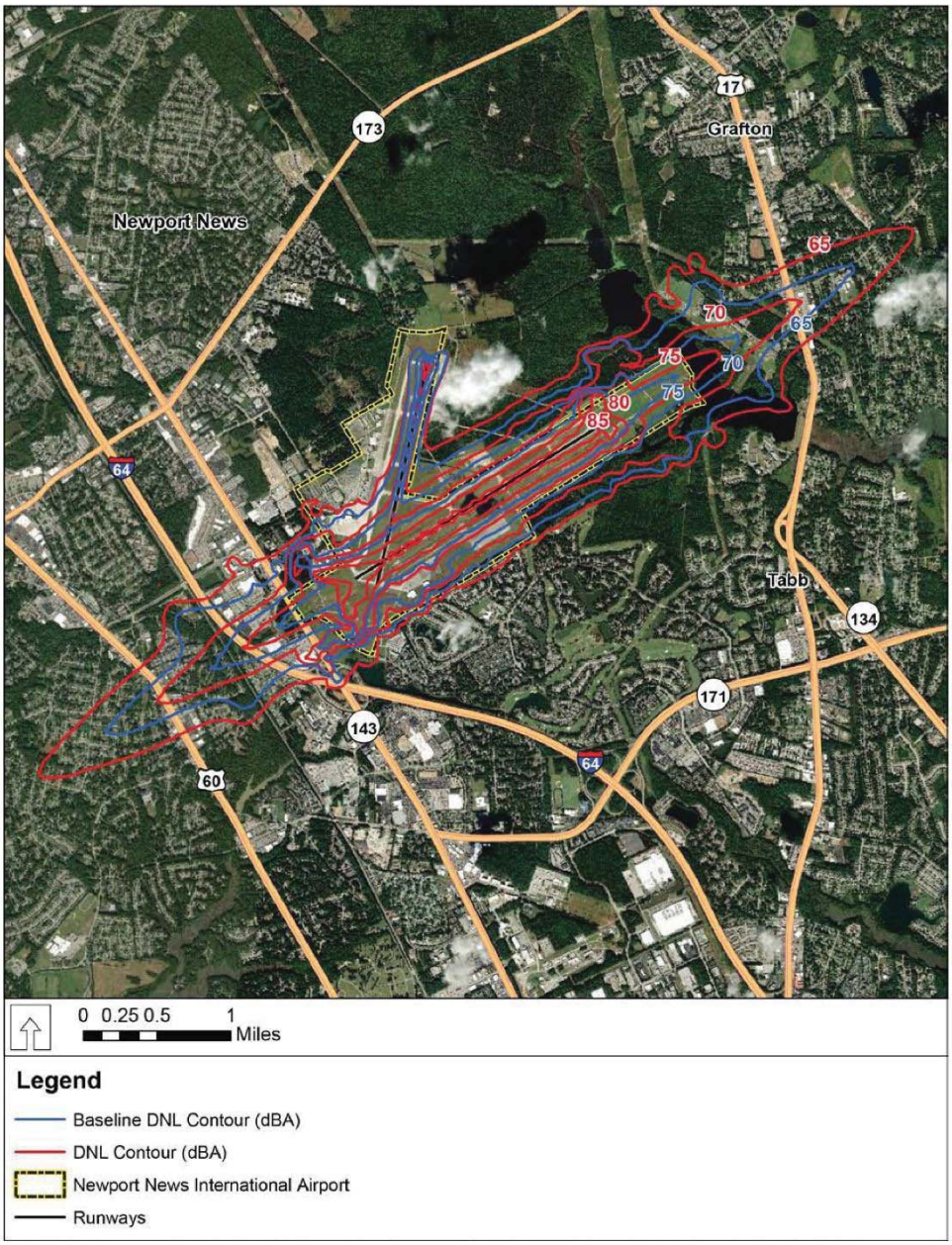


Figure 4. Comparison of Low Noise Scenario and Existing Day-Night Average Sound Level Contours at Newport News-Williamsburg International Airport – Patrick Henry Field.

F. Waterfront Historic Properties

The Commonwealth has a long history of settlement and development, and much of that history has involved both shorelines and near-shore areas. The protection and preservation of historic shorefront properties is primarily the responsibility of the Virginia Department of Historic Resources.

No shorefront properties would be affected by the Proposed Action. The Virginia Department of Historic Resources was notified about the Proposed Action and will be provided the Draft EA for review.

Consistency Determination

Based upon the information and analysis presented above and included in the EA, the Air Force finds that the Proposed Action is consistent to the maximum extent practicable with the enforceable policies of the Virginia Coastal Resources Management Program.

Pursuant to 15 CFR § 930.41, the Virginia Coastal Resources Management Program has 60 days from the receipt of this letter in which to concur with or object to this Federal Consistency Determination or to request an extension under 15 CFR § 930.41(b). Virginia's concurrence will be presumed if its response is not received by Seymour Johnson AFB on the 60th day from receipt of this determination.

References

Air Force. 1997. *Environmental Effects of Self-protection Chaff and Flares: Final Report*. Prepared for Headquarters Air Combat Command, Langley Air Force Base, Virginia.

USEPA. 2019. *Climate Change Indicators: Ocean Acidity*. <https://www.epa.gov/climate-indicators/climate-change-indicators-ocean-acidity>. Accessed April 2019.

GOODSON.DENNIS.G.1229806528
Digitally signed by GOODSON.DENNIS.G.1229806528
Date: 2020.03.30 16:18:20 -04'00'

30 March 2020
Date

DENNIS G. GOODSON, P.E.
Deputy Base Engineer
Seymour Johnson AFB, North Carolina

From: Govoni, Daniel [redacted]
Sent: Tuesday, May 26, 2020 9:58 AM
To: PESENTI, CATHRYN M GS-12 USAF ACC 4 CES/CEIEA [redacted]
Subject: [Non-DoD Source] RE: [External] Change to Combat Adversary Air in Support of Seymour Johnson AFB, NC

Hello Ms. Pesenti,

We received your consistency submission on March 27, 2020, concerning the proposed Combat Adversary Air in support of Seymour Johnson Air Force Base.

North Carolina's coastal zone management program consists of, but is not limited to, the Coastal Area Management Act, the State's Dredge and Fill Law, Chapter 7 of Title 15A of North Carolina's Administrative Code, and the land use plan of the County and/or local municipality in which the proposed project is located. It is the objective of the Division of Coastal Management (DCM) to manage the State's coastal resources to ensure that proposed federal actions would be compatible with safeguarding and perpetuating the biological, social, economic, and aesthetic values of the State's coastal waters.

DCM has reviewed the submitted information pursuant to the management objectives and enforceable policies of Subchapters 7H and 7M of Chapter 7 in Title 15A of the North Carolina Administrative Code and concurs that the proposed activity is consistent with North Carolina's approved coastal management program.

Prior to the initiation of the activities described, the applicant should obtain any required State approvals or authorizations. Should the proposed action be modified further, a revised consistency determination could be necessary. This might take the form of either a supplemental consistency determination pursuant to 15 CFR 930.46, or a new consistency determination pursuant to 15 CFR 930.36. Likewise, if further project assessments reveal environmental effects not previously considered, a supplemental consistency certification may be required. If you have any questions, please contact me at [redacted]. Thank you for your consideration of the North Carolina Coastal Management Program.

Daniel

From: PESENTI, CATHRYN M GS-12 USAF ACC 4 CES/CEIEA [redacted]
Sent: Thursday, April 16, 2020 6:11 AM
To: Govoni, Daniel [redacted]
Subject: [External] Change to Combat Adversary Air in Support of Seymour Johnson AFB, NC

CAUTION: External email. Do not click links or open attachments unless you verify. Send all suspicious email as an attachment to report.spam@nc.gov

Mr. Govoni,

Per our telephone conversation yesterday afternoon, I am providing this notification of a change to the Consistency Determination that was submitted for Combat Adversary Air in Support of Seymour Johnson AFB. The proposed action was modified and Fayetteville is no longer an alternative being considered in the environmental analysis; however, the proposed use of Kinston and the airspace would remain the same as described in the Consistency Determination.

Please let me know if you need any additional information in order to complete the evaluation of this proposed action.

Thank you for your assistance in this matter.

Regards,

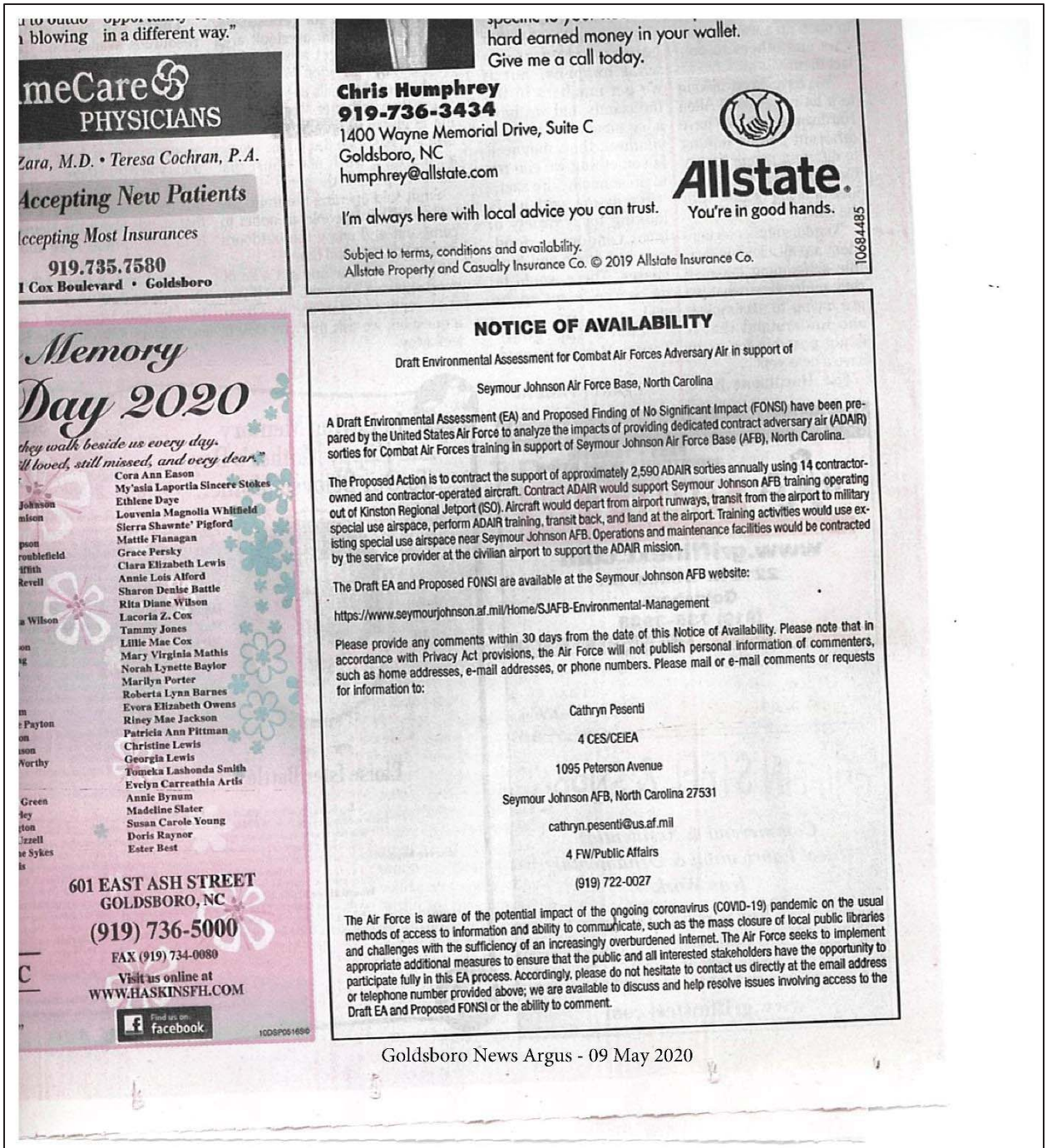
CATHRYN PESENTI, GS-12, DAF
Environmental Planner
4th Civil Engineer Squadron
Seymour Johnson Air Force Base
[redacted]

This page intentionally left blank

Appendix A-6

Draft Environmental Assessment Notices of Availability

This page intentionally left blank



in a different way."

meCare
PHYSICIANS

Zara, M.D. • Teresa Cochran, P.A.

Accepting New Patients

Accepting Most Insurances

919.735.7580

1 Cox Boulevard • Goldsboro

hard earned money in your wallet.
Give me a call today.

Chris Humphrey
919-736-3434
1400 Wayne Memorial Drive, Suite C
Goldsboro, NC
humphrey@allstate.com

I'm always here with local advice you can trust.

Allstate.
You're in good hands.

Subject to terms, conditions and availability.
Allstate Property and Casualty Insurance Co. © 2019 Allstate Insurance Co.

10684485

Memory
Day 2020

hey walk beside us every day.
ll loved, still missed, and very dear."

Cora Ann Eason
My'asia Laportia Sincere Stokes
Ethlene Daye
Louvenia Magnolia Whitfield
Sierra Shawnte' Pigford
Mattie Flanagan
Grace Persky
Clara Elizabeth Lewis
Annie Lois Alford
Sharon Denise Battle
Rita Diane Wilson
Lacoria Z. Cox
Tammy Jones
Lillie Mae Cox
Mary Virginia Mathis
Norah Lynette Baylor
Marilyn Porter
Roberta Lynn Barnes
Evora Elizabeth Owens
Riney Mae Jackson
Patricia Ann Pittman
Christine Lewis
Georgia Lewis
Tomeka Lashonda Smith
Evelyn Carreathia Artis
Annie Bynum
Madeline Slater
Susan Carole Young
Doris Raynor
Ester Best

601 EAST ASH STREET
GOLDSBORO, NC
(919) 736-5000
FAX (919) 734-0080
Visit us online at
WWW.HASKINSFH.COM
Find us on facebook

1CDSP0516S0

NOTICE OF AVAILABILITY

Draft Environmental Assessment for Combat Air Forces Adversary Air in support of

Seymour Johnson Air Force Base, North Carolina

A Draft Environmental Assessment (EA) and Proposed Finding of No Significant Impact (FONSI) have been prepared by the United States Air Force to analyze the impacts of providing dedicated contract adversary air (ADAIR) sorties for Combat Air Forces training in support of Seymour Johnson Air Force Base (AFB), North Carolina.

The Proposed Action is to contract the support of approximately 2,590 ADAIR sorties annually using 14 contractor-owned and contractor-operated aircraft. Contract ADAIR would support Seymour Johnson AFB training operating out of Kinston Regional Jetport (ISO). Aircraft would depart from airport runways, transit from the airport to military special use airspace, perform ADAIR training, transit back, and land at the airport. Training activities would use existing special use airspace near Seymour Johnson AFB. Operations and maintenance facilities would be contracted by the service provider at the civilian airport to support the ADAIR mission.

The Draft EA and Proposed FONSI are available at the Seymour Johnson AFB website:

https://www.seymourjohnson.af.mil/Home/SJAFB-Environmental-Management

Please provide any comments within 30 days from the date of this Notice of Availability. Please note that in accordance with Privacy Act provisions, the Air Force will not publish personal information of commenters, such as home addresses, e-mail addresses, or phone numbers. Please mail or e-mail comments or requests for information to:

Cathryn Pesenti

4 CES/CEIEA

1095 Peterson Avenue

Seymour Johnson AFB, North Carolina 27531

cathryn.pesenti@us.af.mil

4 FW/Public Affairs

(919) 722-0027

The Air Force is aware of the potential impact of the ongoing coronavirus (COVID-19) pandemic on the usual methods of access to information and ability to communicate, such as the mass closure of local public libraries and challenges with the sufficiency of an increasingly overburdened internet. The Air Force seeks to implement appropriate additional measures to ensure that the public and all interested stakeholders have the opportunity to participate fully in this EA process. Accordingly, please do not hesitate to contact us directly at the email address or telephone number provided above; we are available to discuss and help resolve issues involving access to the Draft EA and Proposed FONSI or the ability to comment.

Goldsboro News Argus - 09 May 2020

Kinston Free Press - 10 May 2020

NOTICE OF AVAILABILITY

Draft Environmental Assessment for Combat Air Forces Adversary Air in support of Seymour Johnson Air Force Base, North Carolina

A Draft Environmental Assessment (EA) and Proposed Finding of No Significant Impact (FONSI) have been prepared by the United States Air Force to analyze the impacts of providing dedicated contract adversary air (ADAIR) sorties for Combat Air Forces training in support of Seymour Johnson Air Force Base (AFB), North Carolina.

The Proposed Action is to contract the support of approximately 2,590 ADAIR sorties annually using 14 contractor-owned and contractor-operated aircraft. Contract ADAIR would support Seymour Johnson AFB training operating out of Kinston Regional Jetport (ISO). Aircraft would depart from airport runways, transit from the airport to military special use airspace, perform ADAIR training, transit back, and land at the airport. Training activities would use existing special use airspace near Seymour Johnson AFB. Operations and maintenance facilities would be contracted by the service provider at the civilian airport to support the ADAIR mission.

The Draft EA and Proposed FONSI are available at the Seymour Johnson AFB website:

https://www.seymourjohnson.af.mil/Home/SJAFB-Environmental-Management

Please provide any comments within 30 days from the date of this Notice of Availability. Please note that in accordance with Privacy Act provisions, the Air Force will not publish personal information of commenters, such as home addresses, e-mail addresses, or phone numbers. Please mail or e-mail comments or requests for information to:

Cathryn Pesenti
4 CES/CEIEA
1095 Peterson Avenue
Seymour Johnson AFB, North Carolina 27531
cathryn.pesenti@us.af.mil

4 FW/Public Affairs
(919) 722-0027

The Air Force is aware of the potential impact of the ongoing coronavirus (COVID-19) pandemic on the usual methods of access to information and ability to communicate, such as the mass closure of local public libraries and challenges with the sufficiency of an increasingly overburdened internet. The Air Force seeks to implement appropriate additional measures to ensure that the public and all interested stakeholders have the opportunity to participate fully in this EA process. Accordingly, please do not hesitate to contact us directly at the email address or telephone number provided above; we are available to discuss and help resolve issues involving access to the Draft EA and Proposed FONSI or the ability to comment.

EN76817487



EN74540942



APPENDIX B

NOISE

This page intentionally left blank

Appendix B-1

Sound, Noise, and Potential Effects

This page intentionally left blank

B.1 SOUND, NOISE, AND POTENTIAL EFFECTS

B.1.1 Introduction

This appendix discusses sound and noise and their potential effects on the human and natural environment. **Section B.1.2** provides an overview of the basics of sound and noise. **Section B.1.3** defines and describes the different metrics used to describe noise. The largest section, **Section B.1.4**, reviews the potential effects of noise, focusing on effects on humans but also addressing effects on property values, terrain, structures, and animals. **Section B.1.5** contains the list of references cited. **Appendix B-2** contains data used in the noise modeling process. A number of noise metrics are defined and described in this appendix. Some metrics are included for the sake of completeness when discussing each metric and to provide a comparison of cumulative noise metrics.

B.1.2 Basics of Sound

B.1.2.1 Sound Waves and Decibels

Sound consists of minute vibrations in the air that travel through the air and are sensed by the human ear. **Figure B-1** is a sketch of sound waves from a tuning fork. The waves move outward as a series of crests where the air is compressed and troughs where the air is expanded. The height of the crests and the depth of the troughs are the amplitude or sound pressure of the wave. The pressure determines its energy or intensity. The number of crests or troughs that pass a given point each second is called the frequency of the sound wave.

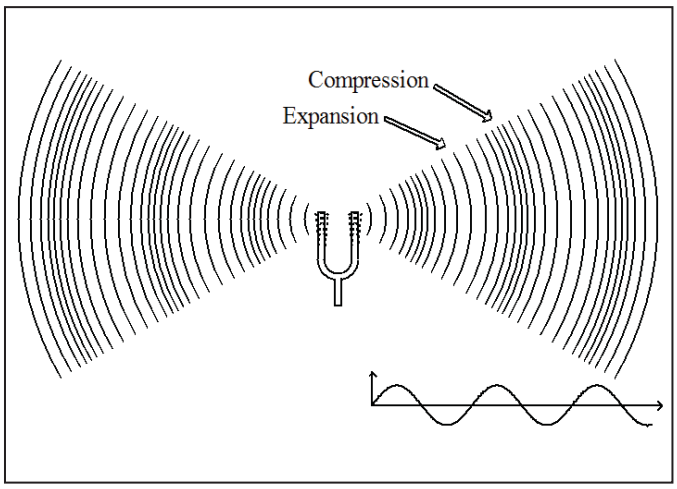


Figure B-1. Sound Waves from a Vibrating Tuning Fork.

The measurement and human perception of sound involves three basic physical characteristics: intensity, frequency, and duration.

- Intensity is a measure of the acoustic energy of the sound and related to sound pressure. The greater the sound pressure, the more energy carried by the sound and the louder the perception of that sound.
- Frequency determines how the pitch of the sound is perceived. Low-frequency sounds are characterized as rumbles or roars, while high-frequency sounds are typified by sirens or screeches.
- Duration or the length of time the sound can be detected.

The loudest sounds that can be comfortably heard by the human ear have intensities a trillion times higher than those of sounds barely heard. Because of this vast range, it is unwieldy to use a linear scale to represent the intensity of sound. As a result, a logarithmic unit known as the decibel (abbreviated dB) is used to represent the intensity of a sound. Such a representation is called a sound level. A sound level of 0 dB is approximately the threshold of human hearing and barely audible under extremely quiet listening conditions. Normal speech has a sound level of approximately 60 dB. Sound levels above 120 dB begin to be felt inside the human ear as discomfort. Sound levels between 130 and 140 dB are felt as pain (Berglund and Lindvall, 1995).

As shown on **Figure B-1**, the sound from a tuning fork spreads out uniformly as it travels from the source. The spreading causes the sound's intensity to decrease with increasing distance from the source. For a source such as an aircraft in flight, the sound level will decrease by about 6 dB for every doubling of the distance. For a busy highway, the sound level will decrease by 3 to 4.5 dB for every doubling of distance.

As sound travels from the source, it also is absorbed by the air. The amount of absorption depends on the frequency composition of the sound, temperature, and humidity conditions. Sound with high frequency content gets absorbed by the air more than sound with low frequency content. More sound is absorbed in colder and drier conditions than in hot and wet conditions. Sound is also affected by wind and temperature gradients, terrain (elevation and ground cover), and structures.

Because of the logarithmic nature of the decibel unit, sound levels cannot simply be added or subtracted and are somewhat cumbersome to handle mathematically; however, some simple rules are useful in dealing with sound levels. First, if a sound's intensity is doubled, the sound level increases by 3 dB, regardless of the initial sound level. For example:

60 dB + 60 dB = 63 dB, and
80 dB + 80 dB = 83 dB.

Second, the total sound level produced by two sounds of different levels is usually only slightly more than the higher of the two. For example:

60.0 dB + 70.0 dB = 70.4 dB.

Because the addition of sound levels is different than that of ordinary numbers, this process is often referred to as "decibel addition."

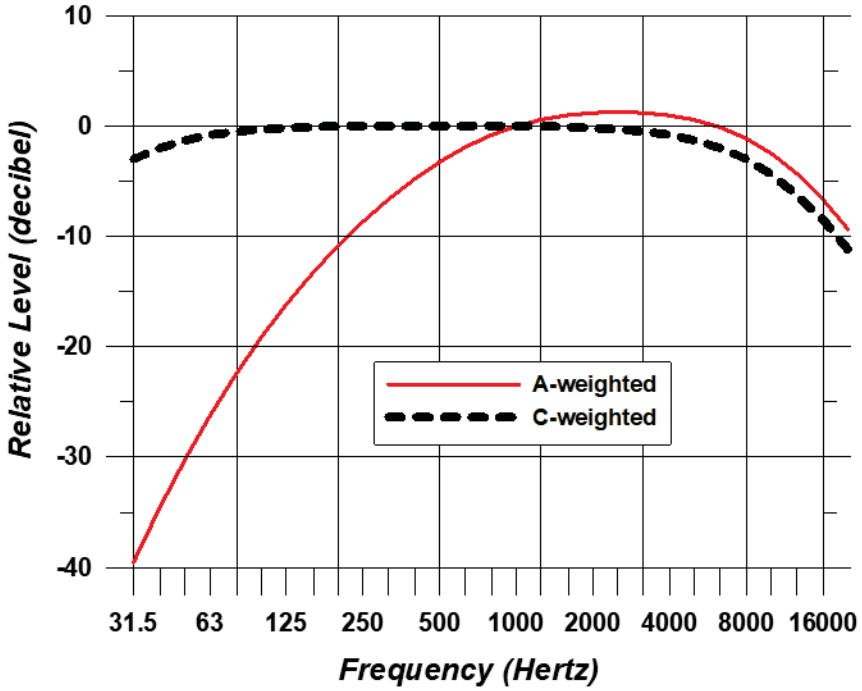
The minimum change in the sound level of individual events that an average human ear can detect is about 3 dB. On average, a person perceives a change in sound level of about 10 dB as a doubling (or halving) of the sound's loudness. This relation holds true for loud and quiet sounds. A decrease in sound level of 10 dB actually represents a 90 percent decrease in sound intensity but only a 50 percent decrease in perceived loudness because the human ear does not respond linearly.

Sound frequency is measured in terms of cycles per second or hertz (Hz). The normal ear of a young person can detect sounds that range in frequency from about 20 to 20,000 Hz. As we get older, we lose the ability to hear high frequency sounds. Not all sounds in this wide range of frequencies are heard equally. Human hearing is most sensitive to frequencies in the 1,000 to 4,000 Hz range. The notes on a piano range from just over 27 to 4,186 Hz, with middle C equal to 261.6 Hz. Most sounds (including a single note on a piano) are not simple pure tones like the tuning fork on **Figure B-1** but contain a mix, or spectrum, of many frequencies.

Sounds with different spectra are perceived differently even if the sound levels are the same. Weighting curves have been developed to correspond to the sensitivity and perception of different types of sound. A-weighting and C-weighting are the two most common weightings. These two curves, shown on **Figure B-2**, are adequate to quantify most environmental noises. A-weighting puts emphasis on the 1,000- to 4,000-Hz range where human hearing is most sensitive.

Very loud or impulsive sounds, such as explosions or sonic booms, can sometimes be felt and cause secondary effects, such as shaking of a structure or rattling of windows. These types of sounds can add to

annoyance and are best measured by C-weighted sound levels, denoted dBC. C-weighting is nearly flat throughout the audible frequency range and includes low frequencies that may not be heard but cause shaking or rattling. C-weighting approximates the human ear's sensitivity to higher intensity sounds.



Source: ANSI S1.4A -1985 "Specification of Sound Level Meters"

Figure B-2. Frequency Characteristics of A- and C-Weighting.

B.1.2.2 Sound Levels and Types of Sounds

Most environmental sounds are measured using A-weighting. They are called A-weighted sound levels and sometimes use the unit dBA or dB(A) rather than dB. When the use of A-weighting is understood, the term "A-weighted" is often omitted and the unit dB is used. Unless otherwise stated, dB units refer to A-weighted sound levels.

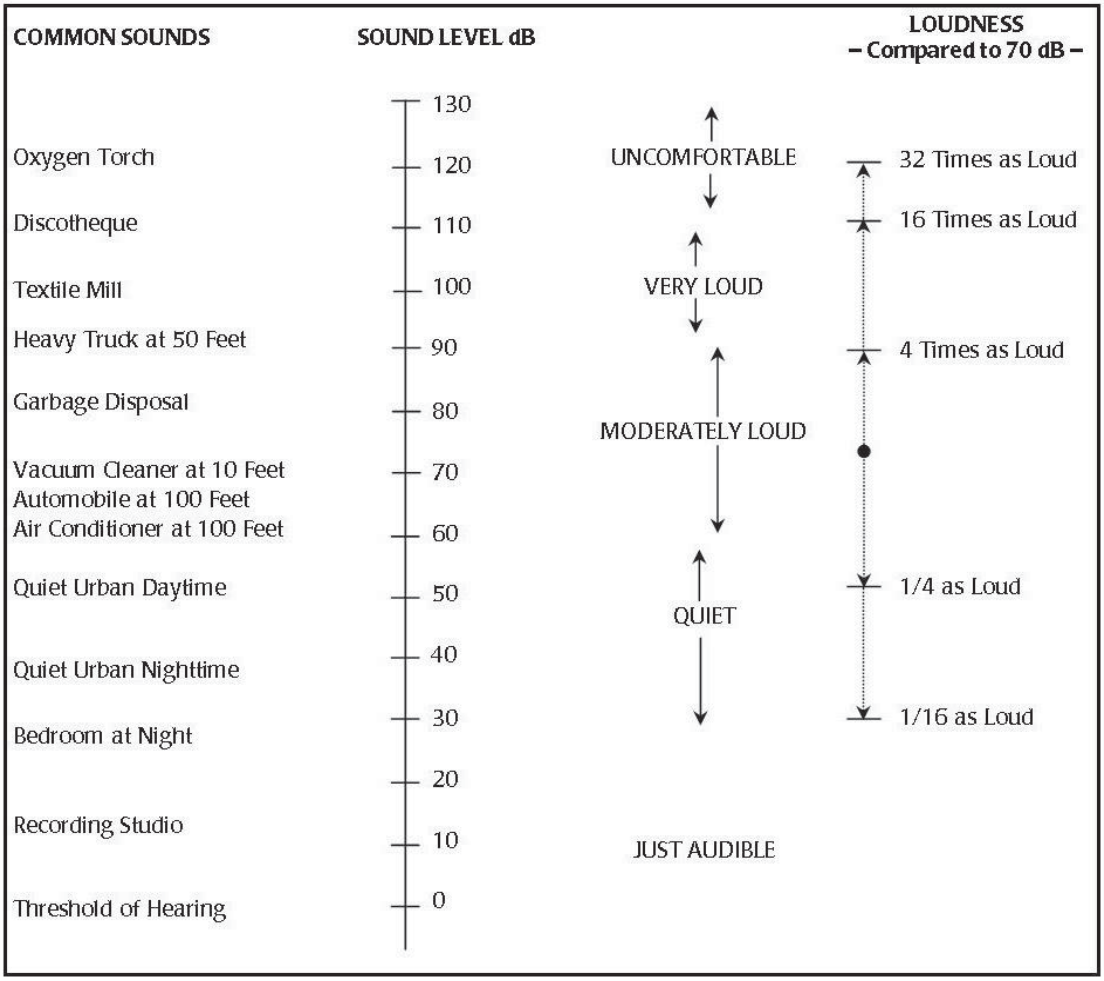
Sound becomes noise when it is unwelcome and interferes with normal activities, such as sleep or conversation. Noise is unwanted sound. Noise can become an issue when its level exceeds the ambient or background sound level. Ambient noise in urban areas typically varies from 60 to 70 dB but can be as high as 80 dB in the center of a large city. Quiet suburban neighborhoods experience ambient noise levels around 45 to 50 dB (United States Environmental Protection Agency [USEPA], 1978).

Figure B-3 shows A-weighted sound levels from common sources. Some sources, like the air conditioner and vacuum cleaner, are continuous sounds whose levels are constant for some time. Some sources, like the automobile and heavy truck, are the maximum sound during an intermittent event like a vehicle pass-by. Some sources like "urban daytime" and "urban nighttime" are averages over extended periods. A variety of noise metrics have been developed to describe noise over different time periods. These are discussed in detail in **Section B.1.3**.

Aircraft noise consists of two major types of sound events: flight (including takeoffs, landings, and flyovers) and stationary, such as engine maintenance run-ups. The former is intermittent and the latter primarily

continuous. Noise from aircraft overflights typically occurs beneath main approach and departure paths, in local air traffic patterns around the airfield, and in areas near aircraft parking ramps and staging areas. As aircraft climb, the noise received on the ground drops to lower levels, eventually fading into the background or ambient levels.

Impulsive noises are generally short, loud events. Their single-event duration is usually less than 1 second. Examples of impulsive noises are small-arms gunfire, hammering, pile driving, metal impacts during rail-yard shunting operations, and riveting. Examples of high-energy impulsive sounds are quarry/mining explosions, sonic booms, demolition, and industrial processes that use high explosives, military ordnance (e.g., armor, artillery and mortar fire, and bombs), explosive ignition of rockets and missiles, and any other explosive source where the equivalent mass of dynamite exceeds 25 grams (American National Standards Institute [ANSI], 1996).



Source: Harris, 1979

Figure B-3. Typical A-weighted Sound Levels of Common Sounds.

B.1.3 Noise Metrics

Noise metrics quantify sounds so they can be compared with each other and with their effects, in a standard way. There are a number of metrics that can be used to describe a range of situations, from a particular

individual event to the cumulative effect of all noise events over a long time. This section describes the metrics relevant to environmental noise analysis.

B.1.3.1 Single Events

Maximum Sound Level

The highest A-weighted sound level measured during a single event in which the sound changes with time is called the maximum A-weighted sound level or Maximum Sound Level and is abbreviated L_{max}. The L_{max} is depicted for a sample event in **Figure B-4**.

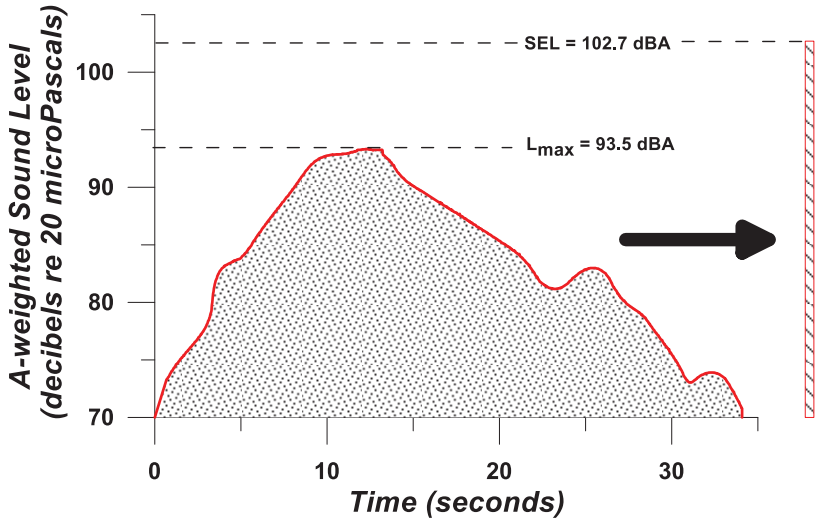
L_{max} is the maximum level that occurs over a fraction of a second. For aircraft noise, the "fraction of a second" is one-eighth of a second, denoted as "fast" response on a sound level measuring meter (ANSI, 1988). Slowly varying or steady sounds are generally measured over 1 second, denoted as "slow" response. L_{max} is important in judging if a noise event will interfere with conversation, television or radio listening, or other common activities. Although it provides some measure of the event, it does not fully describe the noise because it does not account for how long the sound is heard.

Peak Sound Pressure Level

The Peak Sound Pressure Level (L_{pk}) is the highest instantaneous level measured by a sound level measurement meter. L_{pk} is typically measured every 20 microseconds and usually based on unweighted or linear response of the meter. It is used to describe individual impulsive events such as blast noise. Because blast noise varies from shot to shot and varies with meteorological (weather) conditions, the US Department of Defense (DOD) usually characterizes L_{pk} by the metric PK 15(met), which is the L_{pk} exceeded 15 percent of the time. The "met" notation refers to the metric accounting for varied meteorological or weather conditions.

Sound Exposure Level

Sound Exposure Level (SEL) combines both the intensity of a sound and its duration. For an aircraft flyover, SEL includes the maximum and all lower noise levels produced as part of the overflight, together with how long each part lasts. It represents the total sound energy in the event. **Figure B-4** indicates the SEL for an example event, representing it as if all the sound energy were contained within 1 second.



Source: Wyle Laboratories

Figure B-4. Example Time History of Aircraft Noise Flyover.

Aircraft noise varies with time. During an aircraft overflight, noise starts at the background level, rises to a maximum level as the aircraft flies close to the observer, then returns to the background as the aircraft recedes into the distance. This is sketched on **Figure B-4**, which also indicates two metrics (L_{max} and SEL) that are described above. Over time there can be a number of events, not all the same. Because aircraft noise events last more than a few seconds, the SEL value is larger than L_{max}. It does not directly represent the sound level heard at any given time but rather the entire event. SEL provides a much better measure of aircraft flyover noise exposure than L_{max} alone.

Overpressure

The single event metrics commonly used to assess supersonic noise are overpressure in pounds per square foot and C-Weighted Sound Exposure Level (CSEL). Overpressure is the peak pressure at any location within the sonic boom footprint.

C-Weighted Sound Exposure Level

CSEL is SEL computed with C frequency weighting, which is similar to A-Weighting (discussed in **Section B.1.2.2**) except that C weighting places more emphasis on low frequencies below 1,000 hertz.

B.1.3.2 Cumulative Events

Equivalent Sound Level

Equivalent Sound Level (L_{eq}) is a "cumulative" metric that combines a series of noise events over a period of time. L_{eq} is the sound level that represents the decibel average SEL of all sounds in the time period. Just as SEL has proven to be a good measure of a single event, L_{eq} has proven to be a good measure of series of events during a given time period.

The time period of an L_{eq} measurement is usually related to some activity and is given along with the value. The time period is often shown in parenthesis (e.g., L_{eq}[24] for 24 hours). The L_{eq} from 7:00 a.m. to 3:00 p.m. may give exposure of noise for a school day.

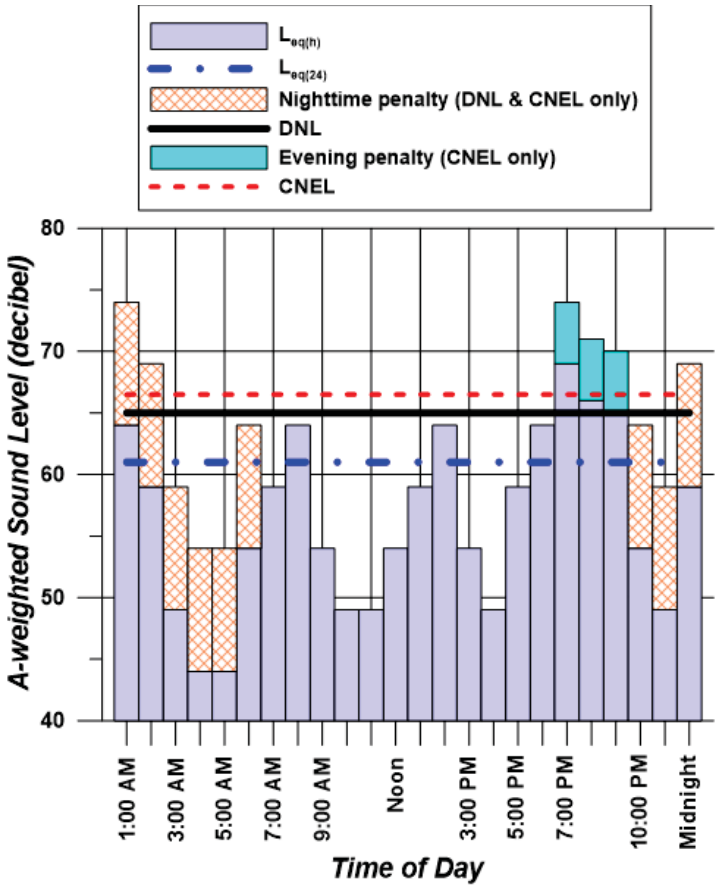
Figure B-5 gives an example of $L_{eq}(24)$ using notional hourly average noise levels (L_{eq}[h]) for each hour of the day as an example. The $L_{eq}(24)$ for this example is 61 dB.

Day-Night Average Sound Level and Community Noise Equivalent Level

Day-Night Average Sound Level (DNL or L_{dn}) is a cumulative metric that accounts for all noise events in a 24-hour period; however, unlike $L_{eq}(24)$, DNL contains a nighttime noise penalty. To account for our increased sensitivity to noise at night, DNL applies a 10-dB penalty to events during the nighttime period, defined as 10:00 p.m. to 7:00 a.m. The notations DNL and L_{dn} are both used for Day-Night Average Sound Level and are equivalent.

Community Noise Equivalent Level (CNEL) is a variation of DNL specified by law in California (California Code of Regulations Title 21, Public Works) (Wyle Laboratories, 1970). CNEL has the 10-dB nighttime penalty for events between 10:00 p.m. and 7:00 a.m. but also includes a 4.8-dB penalty for events during the evening period of 7:00 p.m. to 10:00 p.m. The evening penalty in CNEL accounts for the added intrusiveness of sounds during that period. For airports and military airfields, DNL and CNEL represent the average sound level for annual average daily aircraft events.

Figure B-5 gives an example of DNL and CNEL using notional hourly average noise levels (L_{eq}[h]) for each hour of the day as an example. Note the L_{eq}(h) for the hours between 10:00 p.m. and 7:00 a.m. have a 10-dB penalty assigned. For CNEL, the hours between 7:00 p.m. and 10:00 p.m. have a 4.8-dB penalty assigned. The DNL for this example is 65 dB. The CNEL for this example is 66 dB.



Source: Wyle Laboratories

Figure B-5. Example of $L_{eq}(24)$, DNL and CNEL Computed from Hourly Equivalent Sound Levels.

Figure B-6 shows the ranges of DNL or CNEL that occur in various types of communities. Under a flight path at a major airport the DNL may exceed 80 dB while rural areas may experience DNL less than 45 dB. The decibel summation nature of these metrics causes the noise levels of the loudest events to control the 24-hour average. As a simple example, consider a case in which only one aircraft overflight occurs during the daytime over a 24-hour period, creating a sound level of 100 dB for 30 seconds. During the remaining 23 hours, 59 minutes, and 30 seconds of the day, the ambient sound level is 50 dB. The DNL for this 24-hour period is 65.9 dB. Assume, as a second example that 10 such 30-second overflights occur during daytime hours during the next 24-hour period, with the same ambient sound level of 50 dB during the remaining 23 hours and 55 minutes of the day. The DNL for this 24-hour period is 75.5 dB. Clearly, the averaging of noise over a 24-hour period does not ignore the louder single events and tends to emphasize both the sound levels and number of those events.

A feature of the DNL metric is that a given DNL value could result from a very few noisy events or a large number of quieter events. For example, one overflight at 90 dB creates the same DNL as 10 overflights at 80 dB.

DNL or CNEL does not represent a level heard at any given time but represent long-term exposure. Scientific studies have found good correlation between the percentages of groups of people highly annoyed and the level of average noise exposure measured in DNL (Schultz, 1978; USEPA, 1978).

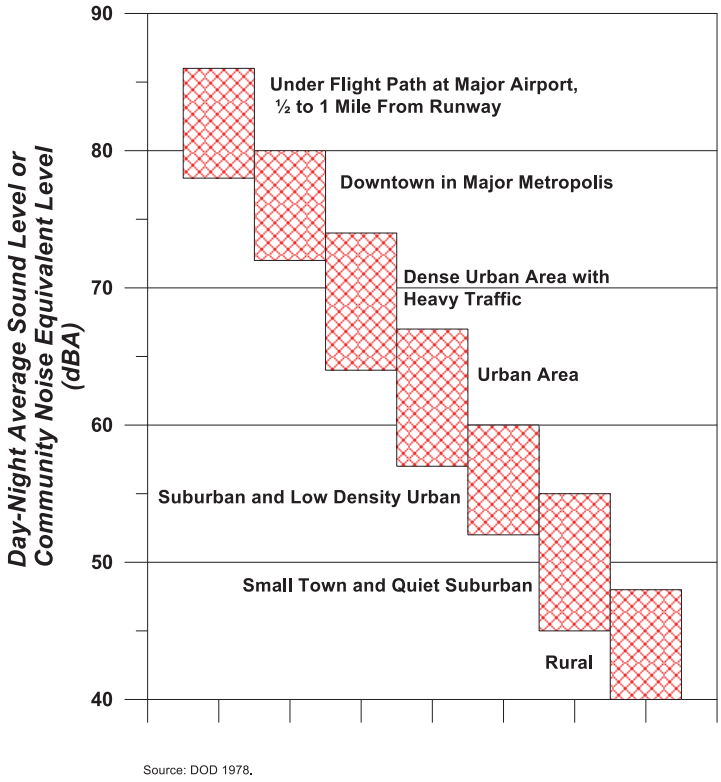


Figure B-6. Typical DNL or CNEL Ranges in Various Types of Communities.

Onset-Rate Adjusted Monthly Day-Night Average Sound Level and Onset-Rate Adjusted Monthly Community Noise Equivalent Level

Military aircraft utilizing special use airspace such as Military Training Routes, Military Operations Areas, and restricted areas generate a noise environment that is somewhat different from that around airfields. Rather than regularly occurring operations like at airfields, activity in special use airspace is highly sporadic. It is often seasonal, ranging from 10 per hour to less than 1 per week. Individual military overflight events also differ from typical community noise events in that noise from a low-altitude, high-airspeed flyover can have a rather sudden onset, with rates of up to 150 dB per second.

The cumulative daily noise metric devised to account for the "surprise" effect of the sudden onset of aircraft noise events on humans and the sporadic nature of special use airspace activity is the Onset-Rate Adjusted Monthly Day-Night Average Sound Level (L_{dnmr}). Onset rates between 15 and 150 dB per second require an adjustment of 0 to 11 dB to the event's SEL while onset rates below 15 dB per second require no adjustment to the event's SEL (Stusnick et al., 1992). The term 'monthly' in L_{dnmr} refers to the noise assessment being conducted for the month with the most operations or sorties -- the so-called busiest month.

In California, a variant of the L_{dnmr} includes a penalty for evening operations (7:00 p.m. to 10:00 p.m.) and is denoted Onset-Rate Adjusted Monthly Community Noise Equivalent Level ($CNEL_{mr}$).

B.1.3.3 Supplemental Metrics

Number-of-Events Above a Threshold Level

The Number-of-Events Above (NA) metric gives the total number of events that exceed a noise level threshold (L) during a specified period of time. Combined with the selected threshold, the metric is denoted NAL. The threshold can be either SEL or L_{max}, and it is important that this selection is shown in the nomenclature. When labeling a contour line or point of interest, NAL is followed by the number of events in parentheses. For example, where 10 events exceed an SEL of 90 dB over a given period of time, the nomenclature would be NA90SEL(10). Similarly, for L_{max} it would be NA90L_{max}(10). The period of time can be an average 24-hour day, daytime, nighttime, school day, or any other time period appropriate to the nature and application of the analysis.

NA is a supplemental metric. It is not supported by the amount of science behind DNL/CNEL, but it is valuable in helping to describe noise to the community. A threshold level and metric are selected that best meet the need for each situation. An L_{max} threshold is normally selected to analyze speech interference, while an SEL threshold is normally selected for analysis of sleep disturbance.

The NA metric is the only supplemental metric that combines single-event noise levels with the number of aircraft operations. In essence, it answers the question of how many aircraft (or range of aircraft) fly over a given location or area at or above a selected threshold noise level.

Time Above a Specified Level

The Time Above (TA) metric is the total time, in minutes, that the A-weighted noise level is at or above a threshold. Combined with the threshold level (L), it is denoted TAL. TA can be calculated over a full 24-hour annual average day, the 15-hour daytime and 9-hour nighttime periods, a school day, or any other time period of interest, provided there is operational data for that time.

TA is a supplemental metric, used to help understand noise exposure. It is useful for describing the noise environment in schools, particularly when assessing classroom or other noise sensitive areas for various scenarios. TA can be shown as contours on a map similar to the way DNL contours are drawn.

TA helps describe the noise exposure of an individual event or many events occurring over a given time period. When computed for a full day, the TA can be compared alongside the DNL in order to determine the sound levels and total duration of events that contribute to the DNL. TA analysis is usually conducted along with NA analysis, so the results show not only how many events occur, but also the total duration of those events above the threshold.

B.1.4 Noise Effects

Noise is of concern because of potential adverse effects. The following subsections describe how noise can affect communities and the environment and how those effects are quantified. The specific topics discussed are

- annoyance;
- speech interference;
- sleep disturbance;
- noise effects on children; and
- noise effects on domestic animals and wildlife.

B.1.4.1 Annoyance

With the introduction of jet aircraft in the 1950s, it became clear that aircraft noise annoyed people and was a significant problem around airports. Early studies, such as those of Rosenblith et al. (1953) and Stevens et al. (1953) showed that effects depended on the quality of the sound, its level, and the number of flights.

Over the next 20 years considerable research was performed refining this understanding and setting guidelines for noise exposure. In the early 1970s, the USEPA published its "Levels Document" (USEPA, 1974) that reviewed the factors that affected communities. DNL (still known as L_{dn} at the time) was identified as an appropriate noise metric, and threshold criteria were recommended.

Threshold criteria for annoyance were identified from social surveys, where people exposed to noise were asked how noise affects them. Surveys provide direct real-world data on how noise affects actual residents.

Surveys in the early years had a range of designs and formats and needed some interpretation to find common ground. In 1978, Schultz showed that the common ground was the number of people "highly annoyed," defined as the upper 28 percent range of whatever response scale a survey used (Schultz, 1978). With that definition, he was able to show a remarkable consistency among the majority of the surveys for which data were available. **Figure B-7** shows the result of his study relating DNL to individual annoyance measured by percent highly annoyed (%HA).

Schultz's original synthesis included 161 data points. **Figure B-8** shows a comparison of the predicted response of the Schultz data set with an expanded set of 400 data points collected through 1989 (Finegold et al., 1994). The new form is the preferred form in the United States, endorsed by the Federal Interagency Committee on Aviation Noise (FICAN, 1997). Other forms have been proposed, such as that of Fidell and Silvati (2004) but have not gained widespread acceptance.

When the goodness of fit of the Schultz curve is examined, the correlation between groups of people is high, in the range of 85 to 90 percent; however, the correlation between individuals is much lower, at 50 percent or less. This is not surprising, given the personal differences between individuals. The surveys underlying the Schultz curve include results that show that annoyance to noise is also affected by nonacoustical factors. Newman and Beattie (1985) divided the nonacoustic factors into the emotional and physical variables shown in **Table B-1**.

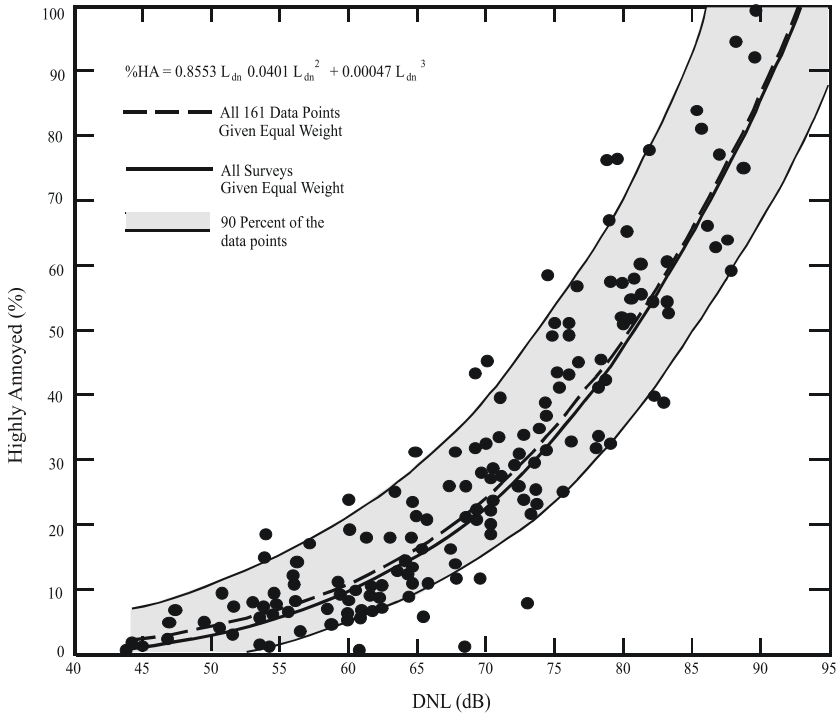


Figure B-7. Schultz Curve Relating Noise Annoyance to DNL (Schultz, 1978).

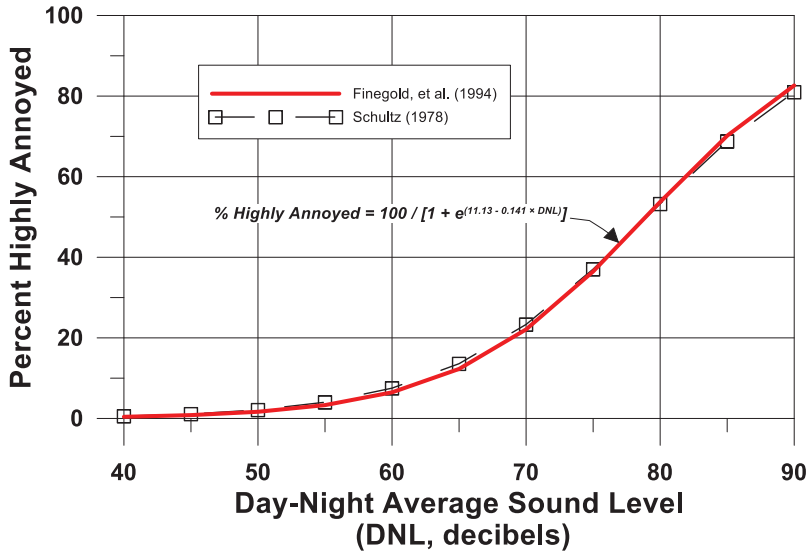


Figure B-8. Response of Communities to Noise; Comparison of Original Schultz (1978) with Finegold et al. (1994).

Table B-1
Nonacoustic Variables Influencing Aircraft Noise Annoyance

Emotional Variables
Feeling about the necessity or preventability of the noise
Judgement of the importance and value of the activity that is producing the noise
Activity at the time an individual hears the noise
Attitude about the environment
General sensitivity to noise
Belief about the effect of noise on health
Feeling of fear associated with the noise

Physical Variables
Type of neighborhood
Time of day
Season
Predictability of the noise
Control over the noise source
Length of time individual is exposed to a noise.

Schreckenberg and Schuemer (2010) examined the importance of some of these factors on short term annoyance. Attitudinal factors were identified as having an effect on annoyance. In formal regression analysis, however, sound level (L_{eq}) was found to be more important than attitude. A series of studies at three European airports showed that less than 20 percent of the variance in annoyance can be explained by noise alone (Márki, 2013).

A study by Plotkin et al. (2011) examined updating DNL to account for these factors. It was concluded that the data requirements for a general analysis were much greater than are available from most existing studies. It was noted that the most significant issue with DNL is that it is not readily understood by the public and that supplemental metrics such as TA and NA were valuable in addressing attitude when communicating noise analysis to communities (DOD, 2009a).

A factor that is partially nonacoustical is the source of the noise. Miedema and Vos (1998) presented synthesis curves for the relationship between DNL and percentage “Annoyed” and percentage “Highly Annoyed” for three transportation noise sources. Different curves were found for aircraft, road traffic, and railway noise. **Table B-2** summarizes their results. Comparing the updated Schultz curve suggests that the percentage of people highly annoyed by aircraft noise may be higher than previously thought. Miedema

and Oudshoorn (2001) authors supplemented that investigation with further derivation of percent of population highly annoyed as a function of either DNL or DENL along with the corresponding 95 percent confidence intervals with similar results.

Table B-2
Percent Highly Annoyed for Different Transportation Noise Sources

Day-Night Average Sound Level (decibels)	Percent Highly Annoyed (%HA)			
	Miedema and Vos			Schultz Combined
	Air	Road	Rail	
55	12	7	4	3
60	19	12	7	6
65	28	18	11	12
70	37	29	16	22
75	48	40	22	36

Source: Miedema and Vos, 1998

As noted by the World Health Organization (WHO), however, even though aircraft noise seems to produce a stronger annoyance response than road traffic, caution should be exercised when interpreting synthesized data from different studies (WHO, 1999).

Consistent with WHO's recommendations, the Federal Interagency Committee on Noise (FICON, 1992) considered the Schultz curve to be the best source of dose information to predict community response to noise but recommended further research to investigate the differences in perception of noise from different sources.

The International Standard (ISO 1996:1-2016) update introduced the concept of Community Tolerance Level (L_{ct}) as the day-night sound level at which 50 percent of the people in a particular community are predicted to be highly annoyed by noise exposure. L_{ct} accounts for differences between sources and/or communities when predicting the percentage highly annoyed by noise exposure. ISO also recommended a change to the adjustment range used when comparing aircraft noise to road noise. The previous edition suggested +3 to +6 dB for aircraft noise relative to road noise while the latest editions recommends an adjustment range of +5 to +8 dB. This adjustment range allows DNL to be correlated to consistent annoyance rates when originating from different noise sources (i.e., road traffic, aircraft, or railroad). This change to the adjustment range would increase the calculated percent highly annoyed at the 65-dBA DNL by approximately 2 to 5 percent greater than the previous ISO definition. **Figure B-9** depicts the estimated percentage of people highly annoyed for a given DNL using both the ISO 1996-1 estimation and the older FICON 1992 method. The results suggest that the percentage of people highly annoyed may be greater than previous thought and reliance solely on DNL for impact analysis may be insufficient if utilizing the FICON 1992 method.

The US Federal Aviation Administration (FAA) is currently conducting a major airport community noise survey at approximately 20 US airports in order to update the relationship between aircraft noise and annoyance. Results from this study have not yet been released.

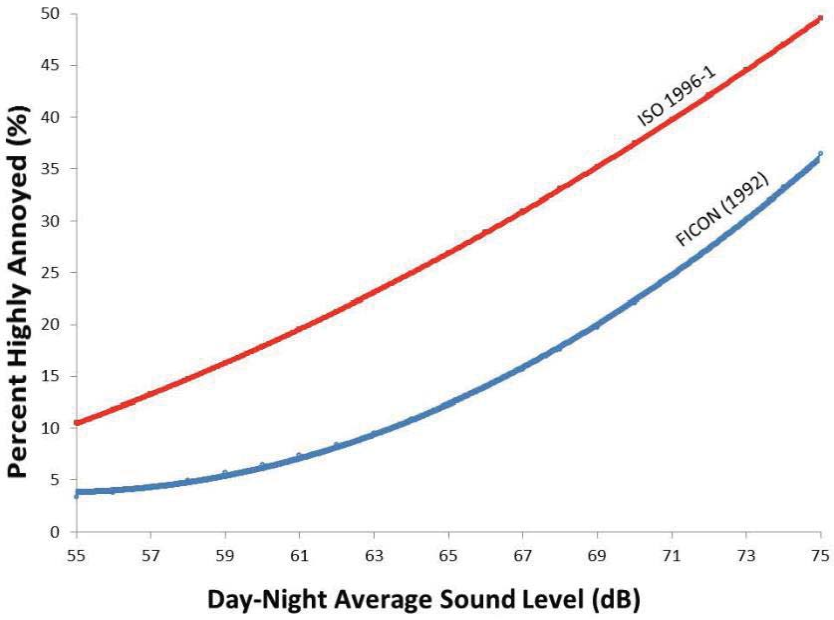


Figure B-9. Percent Highly Annoyed Comparison of ISO 1996-1 to FICON (1992).

B.1.4.2 Speech Interference

Speech interference from noise is a primary cause of annoyance for communities. Disruption of routine activities such as radio or television listening, telephone use, or conversation leads to frustration and annoyance. The quality of speech communication is important in classrooms and offices. In the workplace, speech interference from noise can cause fatigue and vocal strain in those who attempt to talk over the noise. In schools it can impair learning.

There are two measures of speech comprehension:

1. Word Intelligibility - the percent of words spoken and understood. This might be important for students in the lower grades who are learning the English language and particularly for students who have English as a Second Language.
2. Sentence Intelligibility – the percent of sentences spoken and understood. This might be important for high-school students and adults who are familiar with the language and who do not necessarily have to understand each word in order to understand sentences.

United States Federal Criteria for Interior Noise

In 1974, the USEPA identified a goal of an indoor $L_{eq}(24)$ of 45 dB to minimize speech interference based on sentence intelligibility and the presence of steady noise (USEPA, 1974). **Figure B-10** shows the effect of steady indoor background sound levels on sentence intelligibility. For an average adult with normal hearing and fluency in the language, steady background indoor sound levels of less than the 45-dB L_{eq} are expected to allow 100 percent sentence intelligibility.

The curve on **Figure B-10** shows 99 percent intelligibility at L_{eq} below 54 dB and less than 10 percent above 73 dB. Recalling that L_{eq} is dominated by louder noise events, the USEPA $L_{eq}(24)$ goal of 45 dB generally ensures that sentence intelligibility will be high most of the time.

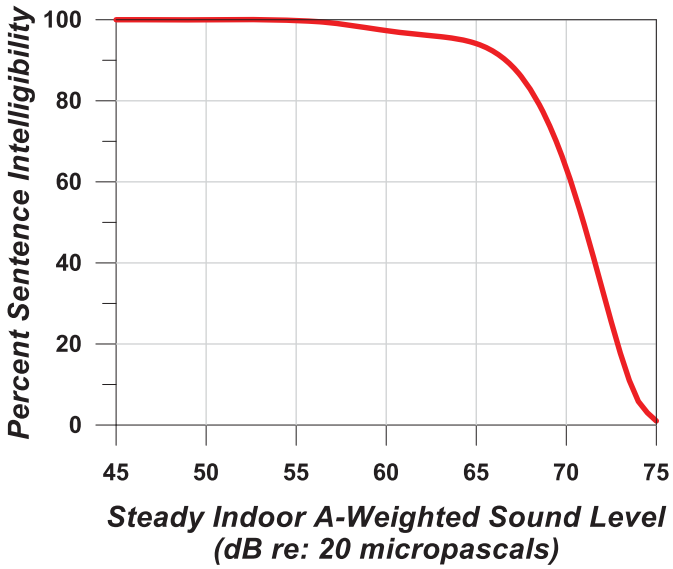


Figure B-10. Speech Intelligibility Curve (digitized from USEPA, 1974).

Classroom Criteria

For teachers to be understood, their regular voice must be clear and uninterrupted. Background noise has to be below the teacher's voice level. Intermittent noise events that momentarily drown out the teacher's voice need to be kept to a minimum. It is therefore important to evaluate the steady background level, level of voice communication, and single-event level due to aircraft overflights that might interfere with speech.

Lazarus (1990) found that for listeners with normal hearing and fluency in the language, complete sentence intelligibility can be achieved when the signal-to-noise ratio (i.e., a comparison of the level of the sound to the level of background noise) is in the range of 15 to 18 dB. The initial ANSI (2002) classroom noise standard and American Speech-Language-Hearing Association (2005) guidelines concur, recommending at least a 15-dB signal-to-noise ratio in classrooms. If the teacher's voice level is at least 50 dB, the background noise level must not exceed an average of 35 dB. The National Research Council of Canada (Bradley, 1993) and WHO (1999) agree with this criterion for background noise.

For eligibility for noise insulation funding, the FAA guidelines state that the design objective for a classroom environment is the 45-dB L_{eq} during normal school hours (FAA, 1985).

Most aircraft noise is not continuous. It consists of individual events like the one sketched on **Figure B-4**. Since speech interference in the presence of aircraft noise is caused by individual aircraft flyover events, a time-averaged metric alone, such as L_{eq}, is not necessarily appropriate. In addition to the background level criteria described above, single-event criteria that account for those noisy events are also needed.

A 1984 study by Wyle for the Port Authority of New York and New Jersey recommended using Speech Interference Level (SIL) for classroom noise criteria (Sharp and Plotkin, 1984). SIL is based on the maximum sound levels in the frequency range that most affects speech communication (500 to 2,000 Hz). The study identified an SIL of 45 dB as the goal. This would provide 90 percent word intelligibility for the short time periods during aircraft overflights. While SIL is technically the best metric for speech interference, it can be approximated by an L_{max} value. An SIL of 45 dB is equivalent to an A-weighted L_{max} of 50 dB for aircraft noise (Wesler, 1986).

Lind et al. (1998) also concluded that an L_{max} criterion of 50 dB would result in 90 percent word intelligibility. Bradley (1985) recommends SEL as a better indicator. His work indicates that 95 percent word intelligibility

would be achieved when indoor SEL did not exceed 60 dB. For typical flyover noise, this corresponds to an L_{max} of 50 dB. While WHO (1999) only specifies a background L_{max} criterion, they also note the SIL frequencies and that interference can begin at around 50 dB.

The United Kingdom Department for Education and Skills (UKDfES) established in its classroom acoustics guide a 30-minute time-averaged metric of L_{eq}(30min) for background levels and the metric of LA1,30min for intermittent noises, at thresholds of 30 to 35 dB and 55 dB, respectively. LA1,30min represents the A-weighted sound level that is exceeded 1 percent of the time (in this case, during a 30-minute teaching session) and is generally equivalent to the L_{max} metric (UKDfES, 2003).

Table B-3 summarizes the criteria discussed. Other than the FAA (1985) 45 dB L_{max} criterion, they are consistent with a limit on indoor background noise of 35 to 40 dB L_{eq} and a single event limit of 50 dB L_{max}. It should be noted that these limits were set based on students with normal hearing and no special needs. At-risk students may be adversely affected at lower sound levels.

Table B-3
Indoor Noise Level Criteria Based on Speech Intelligibility

Source	Metric/Level (dB)	Effects and Notes
Federal Aviation Administration (1985)	$L_{eq(during\ school\ hours)}$ = 45 dB	Federal assistance criteria for school sound insulation; supplemental single-event criteria may be used.
Lind et al. (1998), Sharp and Plotkin (1984), Wesler (1986)	L_{max} = 50 dB / Speech Interference Level 45	Single event level permissible in the classroom.
World Health Organization (1999)	L_{eq} = 35 dB L_{max} = 50 dB	Assumes average speech level of 50 dB and recommends signal to noise ratio of 15 dB.
American National Standards Institute (2010)	L_{eq} = 35 dB, based on Room Volume (e.g., cubic feet)	Acceptable background level for continuous and intermittent noise.
United Kingdom Department for Education and Skills (2003)	$L_{eq(30min)}$ = 30-35 dB L_{max} = 55 dB	Minimum acceptable in classroom and most other learning environs.

dB = decibel(s); L_{eq} = Equivalent Sound Level; L_{max} = Maximum Sound Level

B.1.4.3 Sleep Disturbance

Sleep disturbance is a major concern for communities exposed to aircraft noise at night. A number of studies have attempted to quantify the effects of noise on sleep. This section provides an overview of the major noise-induced sleep disturbance studies. Emphasis is on studies that have influenced US federal noise policy. The studies have been separated into two groups:

1. Initial studies performed in the 1960s and 1970s, where the research was focused on sleep observations performed under laboratory conditions.
2. Later studies performed in the 1990s up to the present, where the research was focused on field observations.

Initial Studies

The relation between noise and sleep disturbance is complex and not fully understood. The disturbance depends not only on the depth of sleep and the noise level but also on the nonacoustic factors cited for annoyance. The easiest effect on measure is the number of arousals or awakenings from noise events.

Much of the literature has therefore focused on predicting the percentage of the population that will be awakened at various noise levels.

FICON's 1992 review of airport noise issues (FICON, 1992) included an overview of relevant research conducted through the 1970s. Literature reviews and analyses were conducted from 1978 through 1989 using existing data (Griefahn, 1978; Lukas, 1978; Pearsons et. al., 1989). Because of large variability in the data, FICON did not endorse the reliability of those results.

FICON did, however, recommend an interim dose-response curve, awaiting future research. That curve predicted the percent of the population expected to be awakened as a function of the exposure to SEL. This curve was based on research conducted for the US Air Force (Finegold, 1994). The data included most of the research performed up to that point and predicted a 10 percent probability of awakening when exposed to an interior SEL of 58 dB. The data used to derive this curve were primarily from controlled laboratory studies.

Recent Sleep Disturbance Research – Field and Laboratory Studies

It was noted that early sleep laboratory studies did not account for some important factors. These included habituation to the laboratory, previous exposure to noise, and awakenings from noise other than aircraft. In the early 1990s, field studies in people's homes were conducted to validate the earlier laboratory work conducted in the 1960s and 1970s. The field studies of the 1990s (e.g., Horne, 1994) found that 80 to 90 percent of sleep disturbances were not related to outdoor noise events but rather to indoor noises and nonnoise factors. The results showed that, in real life conditions, there was less of an effect of noise on sleep than had been previously reported from laboratory studies. Laboratory sleep studies tend to show more sleep disturbance than field studies because people who sleep in their own homes are used to their environment and, therefore, do not wake up as easily (FICAN, 1997).

FICAN

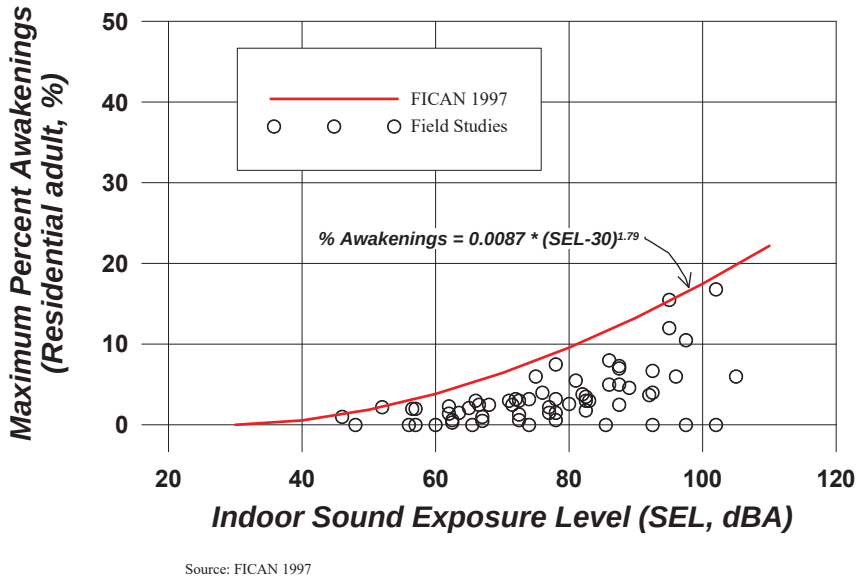
Based on this new information, in 1997 FICAN recommended a dose-response curve to use instead of the earlier 1992 FICON curve (FICAN, 1997). **Figure B-11** shows FICAN's curve, the red line, which is based on the results of three field studies shown in the figure (Ollerhead et al., 1992; Fidell et al., 1994, 1995a, 1995b), along with the data from six previous field studies.

The 1997 FICAN curve represents the upper envelope of the latest field data. It predicts the maximum percent awakened for a given residential population. According to this curve, a maximum of 3 percent of people would be awakened at an indoor SEL of 58 dB. An indoor SEL of 58 dB is equivalent to an outdoor SEL of about 83 dB, with the windows closed (73 dB with windows open).

Number of Events and Awakenings

It is reasonable to expect that sleep disturbance is affected by the number of events. The German Aerospace Center (DLR Laboratory) conducted an extensive study focused on the effects of nighttime aircraft noise on sleep and related factors (Basner, 2004). The DLR Laboratory study was one of the largest studies to examine the link between aircraft noise and sleep disturbance. It involved both laboratory and in-home field research phases. The DLR Laboratory investigators developed a dose-response curve that predicts the number of aircraft events at various values of L_{max} expected to produce one additional awakening over the course of a night. The dose-effect curve was based on the relationships found in the field studies.

Later studies by DLR Laboratory conducted in the laboratory comparing the probability of awakenings from different modes of transportation showed that aircraft noise lead to significantly lower awakening probabilities than either road or rail noise (Basner et al., 2011). Furthermore, it was noted that the probability of awakening, per noise event, decreased as the number of noise events increased. The authors concluded that by far the majority of awakenings from noise events merely replaced awakenings that would have occurred spontaneously anyway.



Source: FICAN 1997

Figure B-11. FICAN (1997) Recommended Sleep Disturbance Dose-Response Relationship.

A different approach was taken by an ANSI standards committee (ANSI, 2008). The committee used the average of the data shown on **Figure B-10** rather than the upper envelope, to predict average awakening from one event. Probability theory is then used to project the awakening from multiple noise events.

Currently, there are no established criteria for evaluating sleep disturbance from aircraft noise although recent studies have suggested a benchmark of an outdoor SEL of 90 dB as an appropriate tentative criterion when comparing the effects of different operational alternatives. The corresponding indoor SEL would be approximately 25 dB lower (at 65 dB) with doors and windows closed, and approximately 15 dB lower (at 75 dB) with doors or windows open. According to the ANSI (2008) standard, the probability of awakening from a single aircraft event at this level is between 1 and 2 percent for people habituated to the noise sleeping in bedrooms with windows closed, and between 2 to 3 percent with windows open. The probability of the exposed population awakening at least once from multiple aircraft events at the 90-dB SEL is shown in **Table B-4**.

Table B-4
Probability of Awakening from NA90SEL

Number of Aircraft Events at the 90-Decibel Sound Exposure Level for Average 9-Hour Night	Minimum Probability of Awakening at Least Once	
	Windows Closed	Windows Open
1	1%	2%
3	4%	6%
5	7%	10%
9 (1 per hour)	12%	18%
18 (2 per hour)	22%	33%
27 (3 per hour)	32%	45%

Source: DOD, 2009b

In December 2008, FICAN recommended the use of this new standard. FICAN also recognized that more research is underway by various organizations, and that work may result in changes to FICAN's position. Until that time, FICAN recommends the use of the ANSI (2008) standard (FICAN, 2008).

Summary

Sleep disturbance research still lacks the details to accurately estimate the population awakened for a given noise exposure. The procedure described in the ANSI (2008) Standard and endorsed by FICAN is based on probability calculations that have not yet been scientifically validated. While this procedure certainly provides a much better method for evaluating sleep awakenings from multiple aircraft noise events, the estimated probability of awakenings can only be considered approximate.

B.1.4.4 Noise Effects on Children

Recent studies on school children indicate a potential link between aircraft noise and both reading comprehension and learning motivation. The effects may be small but may be of particular concern for children who are already scholastically challenged.

Effects on Learning and Cognitive Abilities

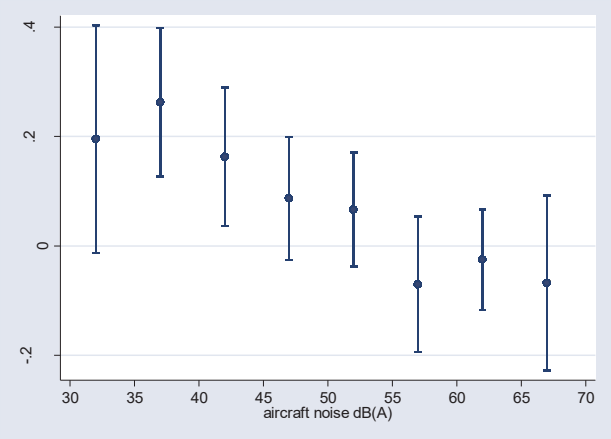
Early studies in several countries (Cohen et al., 1973, 1980, 1981; Bronzaft and McCarthy, 1975; Green et al., 1982; Evans et al., 1998; Haines et al., 2002; Lercher et al., 2003) showed lower reading scores for children living or attending school in noisy areas than for children away from those areas. In some studies noise exposed children were less likely to solve difficult puzzles or more likely to give up.

A longitudinal study reported by Evans et al. (1998), conducted prior to relocation of the old Munich airport in 1992, reported that high noise exposure was associated with deficits in long-term memory and reading comprehension in children with a mean age of 10.8 years. Two years after the closure of the airport, these deficits disappeared, indicating that noise effects on cognition may be reversible if exposure to the noise ceases. Most convincing was the finding that deficits in memory and reading comprehension developed over the 2-year follow-up for children who became newly noise exposed near the new airport; deficits were also observed in speech perception for the newly noise-exposed children.

More recently, the Road Traffic and Aircraft Noise Exposure and Children's Cognition and Health (RANCH) study (Stansfeld et al., 2005; Clark et al., 2005) compared the effect of aircraft and road traffic noise on over 2,000 children in three countries. This was the first study to derive exposure-effect associations for a range of cognitive and health effects and was the first to compare effects across countries.

The study found a linear relation between chronic aircraft noise exposure and impaired reading comprehension and recognition memory. No associations were found between chronic road traffic noise exposure and cognition. Conceptual recall and information recall surprisingly showed better performance in high road traffic noise areas. Neither aircraft noise nor road traffic noise affected attention or working memory (Stansfeld et al., 2005; Clark et al., 2006).

Figure B-12 shows RANCH's result relating noise to reading comprehension. It shows that reading falls below average (a z-score of 0) at Leq greater than 55 dB. Because the relationship is linear, reducing exposure at any level should lead to improvements in reading comprehension.



Sources: Stansfeld et al. 2005; Clark et al. 2006

Figure B-12. RANCH Study Reading Scores Varying with L_{eq}.

An observation of the RANCH study was that children may be exposed to aircraft noise for many of their childhood years and the consequences of long-term noise exposure were unknown. A follow-up study of the children in the RANCH project is being analyzed to examine the long-term effects on children's reading comprehension (Clark et al., 2009). Preliminary analysis indicated a trend for reading comprehension to be poorer at 15 to 16 years of age for children who attended noise-exposed primary schools. An additional study utilizing the same data set (Clark et al., 2012) investigated the effects of traffic-related air pollution and found little evidence that air pollution moderated the association of noise exposure on children's cognition.

There was also a trend for reading comprehension to be poorer in aircraft noise exposed secondary schools. Significant differences in reading scores were found between primary school children in the two different classrooms at the same school (Bronzaft and McCarthy, 1975). One classroom was exposed to high levels of railway noise while the other classroom was quiet. The mean reading age of the noise-exposed children was 3 to 4 months behind that of the control children. Studies suggest that the evidence of the effects of noise on children's cognition has grown stronger over recent years (Stansfeld and Clark, 2015), but further analysis adjusting for confounding factors is ongoing and needed to confirm these initial conclusions.

Studies identified a range of linguistic and cognitive factors to be responsible for children´s unique difficulties with speech perception in noise. Children have lower stored phonological knowledge to reconstruct degraded speech reducing the probability of successfully matching incomplete speech input when compared with adults. Additionally, young children are less able than older children and adults to make use of contextual cues to reconstruct noise-masked words presented in sentential context (Klatte et al., 2013).

FICAN funded a pilot study to assess the relationship between aircraft noise reduction and standardized test scores (Eagan et al., 2004; FICAN, 2007). The study evaluated whether abrupt aircraft noise reduction within classrooms, from either airport closure or sound insulation, was associated with improvements in test scores. Data were collected in 35 public schools near three airports in Illinois and Texas. The study used several noise metrics. These were, however, all computed indoor levels, which makes it hard to compare with the outdoor levels used in most other studies.

The FICAN study found a significant association between noise reduction and a decrease in failure rates for high school students but not middle or elementary school students. There were some weaker associations between noise reduction and an increase in failure rates for middle and elementary schools. Overall, the study found that the associations observed were similar for children with or without learning

difficulties, and between verbal and math/science tests. As a pilot study, it was not expected to obtain final answers but provided useful indications (FICAN, 2007).

A recent study of the effect of aircraft noise on student learning (Sharp et al., 2013) examined student test scores at a total of 6,198 US elementary schools, 917 of which were exposed to aircraft noise at 46 airports with noise exposures exceeding the 55-dBA DNL. The study found small but statistically significant associations between airport noise and student mathematics and reading test scores, after taking demographic and school factors into account. Associations were also observed for ambient noise and total noise on student mathematics and reading test scores, suggesting that noise levels per se, as well as from aircraft, might play a role in student achievement.

As part of the Noise-Related Annoyance, Cognition and Health study conducted at Frankfurt airport, reading tests were conducted on 1,209 school children at 29 primary schools. It was found that there was a small decrease in reading performance that corresponded to a 1-month reading delay; however, a recent study observing children at 11 schools surrounding Los Angeles International Airport found that the majority of distractions to elementary age students were other students followed by themselves, which includes playing with various items and daydreaming. Less than 1 percent of distractions were caused by traffic noise.

While there are many factors that can contribute to learning deficits in school-aged children, there is increasing awareness that chronic exposure to high aircraft noise levels may impair learning. This awareness has led WHO and a North Atlantic Treaty Organization (NATO) working group to conclude that daycare centers and schools should not be located near major sources of noise, such as highways, airports, and industrial sites (NATO, 2000; WHO, 1999). The awareness has also led to the classroom noise standard discussed earlier (ANSI, 2002).

B.1.4.5 Noise Effects on Animals and Wildlife

Hearing is critical to an animal's ability to react, compete, reproduce, hunt, forage, and survive in its environment. While the existing literature does include studies on possible effects of jet aircraft noise and sonic booms on wildlife, there appears to have been little concerted effort in developing quantitative comparisons of aircraft noise effects on normal auditory characteristics. Behavioral effects have been relatively well described, but the larger ecological context issues, and the potential for drawing conclusions regarding effects on populations, have not been well developed.

The relationships between potential auditory/physiological effects and species interactions with their environments are not well understood. Manci et al. (1988) assert that the consequences that physiological effects may have on behavioral patterns are vital to understanding the long-term effects of noise on wildlife. Questions regarding the effects (if any) on predator-prey interactions, reproductive success, and intraspecific behavior patterns remain.

The following discussion provides an overview of the existing literature on noise effects (particularly jet aircraft noise) on animal species. The literature reviewed here involves those studies that have focused on the observations of the behavioral effects that jet aircraft and sonic booms have on animals.

A great deal of research was conducted in the 1960s and 1970s on the effects of aircraft noise on the public and the potential for adverse ecological impacts. These studies were largely completed in response to the increase in air travel and as a result of the introduction of supersonic jet aircraft. According to Manci et al. (1988), the foundation of information created from that focus does not necessarily correlate or provide information specific to the impacts on wildlife in areas overflown by aircraft at supersonic speed or at low altitudes.

The abilities to hear sounds and noise and to communicate assist wildlife in maintaining group cohesiveness and survivorship. Social species communicate by transmitting calls of warning, introduction, and other types that are subsequently related to an individual's or group's responsiveness.

Animal species differ greatly in their responses to noise. Noise effects on domestic animals and wildlife are classified as primary, secondary, and tertiary. Primary effects are direct, physiological changes to the auditory system and most likely include the masking of auditory signals. Masking is defined as the inability of an individual to hear important environmental signals that may arise from mates, predators, or prey. There is some potential that noise could disrupt a species' ability to communicate or could interfere with behavioral patterns (Manci et al., 1988). Although the effects are likely temporal, aircraft noise may cause masking of auditory signals within exposed faunal communities. Animals rely on hearing to avoid predators, obtain food, and communicate with, and attract, other members of their species. Aircraft noise may mask or interfere with these functions. Other primary effects, such as ear drum rupture or temporary and permanent hearing threshold shifts, are not as likely given the subsonic noise levels produced by aircraft overflights.

Secondary effects may include nonauditory effects such as stress and hypertension; behavioral modifications; interference with mating or reproduction; and impaired ability to obtain adequate food, cover, or water. Tertiary effects are the direct result of primary and secondary effects and include population decline and habitat loss. Most of the effects of noise are mild enough that they may never be detectable as variables of change in population size or population growth against the background of normal variation (Bowles, 1995). Other environmental variables (e.g., predators, weather, changing prey base, ground-based disturbance) also influence secondary and tertiary effects and confound the ability to identify the ultimate factor in limiting productivity of a certain nest, area, or region (Smith et al., 1988). Overall, the literature suggests that species differ in their response to various types, durations, and sources of noise (Manci et al., 1988).

Many scientific studies have investigated the effects of aircraft noise on wildlife, and some have focused on wildlife "flight" due to noise. Animal responses to aircraft are influenced by many variables, including size, speed, proximity (both height above the ground and lateral distance), engine noise, color, flight profile, and radiated noise. The type of aircraft (e.g., fixed wing versus rotor-wing [helicopter]) and type of flight mission may also produce different levels of disturbance, with varying animal responses (Smith et al., 1988). Consequently, it is difficult to generalize animal responses to noise disturbances across species.

One result of the Manci et al. (1988) literature review was the conclusion that, while behavioral observation studies were relatively limited, a general behavioral reaction in animals from exposure to aircraft noise is the startle response. The intensity and duration of the startle response appears to be dependent on which species is exposed, whether there is a group or an individual, and whether there have been some previous exposures. Responses range from flight, trampling, stampeding, jumping, or running, to movement of the head in the apparent direction of the noise source. Manci et al. (1988) reported that the literature indicated that avian species may be more sensitive to aircraft noise than mammals.

Domestic Animals

Although some studies report that the effects of aircraft noise on domestic animals is inconclusive, a majority of the literature reviewed indicates that domestic animals exhibit some behavioral responses to military overflights but generally seem to habituate to the disturbances over a period of time. Mammals in particular appear to react to noise at sound levels higher than 90 dB, with responses including the startle response, freezing (i.e., becoming temporarily stationary), and fleeing from the sound source. Many studies on domestic animals suggest that some species appear to acclimate to some forms of sound disturbance (Manci et al., 1988). Some studies have reported such primary and secondary effects as reduced milk production and rate of milk release, increased glucose concentrations, decreased levels of hemoglobin, increased heart rate, and a reduction in thyroid activity. These latter effects appear to represent a small percentage of the findings occurring in the existing literature.

Some reviewers have indicated that earlier studies, and claims by farmers linking adverse effects of aircraft noise on livestock, did not necessarily provide clear-cut evidence of cause and effect (Cottereau, 1978). In contrast, many studies conclude that there is no evidence that aircraft overflights affect feed intake, growth, or production rates in domestic animals.

Wildlife

Studies on the effects of overflights and sonic booms on wildlife have been focused mostly on avian species and ungulates such as caribou and bighorn sheep. Few studies have been conducted on marine mammals, small terrestrial mammals, reptiles, amphibians, and carnivorous mammals. Generally, species that live entirely below the surface of the water have also been ignored due to the fact they do not experience the same level of sound as terrestrial species (National Park Service, 1994). Wild ungulates appear to be much more sensitive to noise disturbance than domestic livestock. This may be due to previous exposure to disturbances. One common factor appears to be that low-altitude flyovers seem to be more disruptive in terrain where there is little cover (Manci et al., 1988).

Some physiological/behavioral responses such as increased hormonal production, increased heart rate, and reduction in milk production have been described in a small percentage of studies. A majority of the studies focusing on these types of effects have reported short-term or no effects.

The relationships between physiological effects and how species interact with their environments have not been thoroughly studied; therefore, the larger ecological context issues regarding physiological effects of jet aircraft noise (if any) and resulting behavioral pattern changes are not well understood.

Animal species exhibit a wide variety of responses to noise. It is therefore difficult to generalize animal responses to noise disturbances or to draw inferences across species, as reactions to jet aircraft noise appear to be species-specific. Consequently, some animal species may be more sensitive than other species and/or may exhibit different forms or intensities of behavioral responses. For instance, wood ducks appear to be more sensitive and more resistant to acclimation to jet aircraft noise than Canada geese in one study. Similarly, wild ungulates seem to be more easily disturbed than domestic animals.

The literature does suggest that common responses include the “startle” or “fright” response and, ultimately, habituation. It has been reported that the intensities and durations of the startle response decrease with the numbers and frequencies of exposures, suggesting no long-term adverse effects. The majority of the literature suggests that domestic animal species (e.g., cows, horses, chickens) and wildlife species exhibit adaptation, acclimation, and habituation after repeated exposure to jet aircraft noise and sonic booms.

Animal responses to aircraft noise appear to be somewhat dependent on, or influenced by, the size, shape, speed, proximity (vertical and horizontal), engine noise, color, and flight profile of planes. Helicopters also appear to induce greater intensities and durations of disturbance behavior as compared to fixed-wing aircraft. Some studies showed that animals that had been previously exposed to jet aircraft noise exhibited greater degrees of alarm and disturbance to other objects creating noise, such as boats, people, and objects blowing across the landscape. Other factors influencing response to jet aircraft noise may include wind direction, speed, and local air turbulence; landscape structures (i.e., amount and type of vegetative cover); and, in the case of bird species, whether the animals are in the incubation/nesting phase.

B.1.5 References

American Speech-Language-Hearing Association. 2005. *Guidelines for Addressing Acoustics in Educational Settings, ASHA Working Group on Classroom Acoustics*.

ANSI. 1985. *Specification for Sound Level Meters, ANSI S1.4A-1985 Amendment to ANSI S1.4-1983*.

ANSI. 1988. *Quantities and Procedures for Description and Measurement of Environmental Sound: Part 1, ANSI S12.9-1988*.

ANSI. 1996. *Quantities and Procedures for Description and Measurement of Environmental Sound: Part 4, ANSI S12.9-1996*.

ANSI. 2002. *Acoustical Performance Criteria, Design Requirements, and Guidelines for Schools, ANSI S12.60-2002*.

ANSI. 2008. *Methods for Estimation of Awakenings with Outdoor Noise Events Heard in Homes, ANSI S12.9-2008/Part6*.

ANSI. 2010. *Acoustical Performance Criteria, Design Requirements, and Guidelines for Schools, Part 1: Permanent Schools, ANSI/ASA S12.60-2010/Part 1*.

Basner, M., H. Buess, U. Miller, G. Platt, and A. Samuel. 2004. *Aircraft Noise Effects on Sleep: Final Results of DLR Laboratory and Field Studies of 2240 Polysomnographically Recorded Subject Nights*. Internoise 2004, The 33rd International Congress and Exposition on Noise Control Engineering. 22-25 August.

Basner, M., U. Muller, and E.M. Elmenhorst. 2011. *Single and Combined Effects of Air, Road, and Rail Traffic Noise on Sleep and Recuperation*. Sleep 2011(34):11–23.

Basner, M., W. Babisch, A. Davis, M. Brink, C. Clark, S. Janssess. 2014. *Auditory and Non-auditory Effects of Noise on Health*. The Lancet 383(9925):1325-1332.

Berglund, B., and T. Lindvall, eds. 1995. *Community Noise*. Jannes Snabbtryck, Stockholm, Sweden.

Bowles, A.E. 1995. *Responses of Wildlife to Noise*, In *Wildlife and Recreationists: Coexistence through Management and Research*, R.L. Knight and K.J. Gutzwiller, eds. Island Press, Covelo, California, pp. 109-156.

Bradley, J.S. 1985. *Uniform Derivation of Optimum Conditions for Speech in Rooms*. National Research Council, Building Research Note, BRN 239, Ottawa, Canada.

Bradley, J.S. 1993. *NRC-CNRC NEF Validation Study: Review of Aircraft Noise and its Effects*. National Research Council Canada and Transport Canada, Contract Report A-1505.5.

Bronzaft, A.L., and D.P. McCarthy. 1975. *The Effects of Elevated Train Noise on Reading Ability*. Journal of Environment and Behavior 7:517-527.

Clark, C., R. Crombie, J. Head, I. van Kamp, E. van Kempen, and S.A. Stansfeld. 2012. *Does Traffic-Related Air Pollution Explain Associations of Aircraft and Road Traffic Noise Exposure on Children's Health and Cognition? A Secondary Analysis of the United Kingdom Sample from the RANCH Project*. American Journal of Epidemiology 176(4):327–337.

Clark, C., R. Martin, E. van Kempen, T. Alfred, J. Head, H.W. Davies, M.M. Haines, I.L. Barrio, M. Matheson, and S.A. Stansfeld. 2005. *Exposure-Effect Relations Between Aircraft and Road Traffic Noise Exposure at School and Reading Comprehension: the RANCH Project*. American Journal of Epidemiology 163:27-37.

Clark, C., S.A. Stansfeld, and J. Head. 2009. *The Long-Term Effects of Aircraft Noise Exposure on Children's Cognition: Findings from the UK RANCH Follow-Up Study*. In Proceedings of the Euronoise Conference. Edinburgh, Scotland. October.

Cohen, S., D.C. Glass, and J.E. Singer. 1973. *Apartment Noise, Auditory Discrimination, and Reading Ability in Children*. Journal of Experimental Social Psychology 9:407-422.

Cohen, S., G.W. Evans, D.S. Krantz. 1980. *Physiological, Motivational, and Cognitive Effects of Aircraft Noise on Children: Moving from Laboratory to Field*. American Psychologist 35:231-243.

Cohen, S., G.W. Evans, D.S. Krantz. 1981. *Aircraft Noise and Children: Longitudinal and Cross-sectional Evidence on Adaptation to Noise and the Effectiveness of Noise Abatement.* Journal of Personality and Social Psychology 40:331-345.

Cottereau, P. 1978. *The Effect of Sonic Boom from Aircraft on Wildlife and Animal Husbandry*, In *Effects of Noise on Wildlife*, Academic Press, New York, New York, pp. 63-79.

DOD. 1978. *Environmental Protection: Planning in the Noise Environment*. AFMAN 19-10/ TM 5-803-2/NAVFAC P-970.

DOD. 2009a. *Improving Aviation Noise Planning, Analysis, and Public Communication with Supplemental Metrics*. Defense Noise Working Group Technical Bulletin. December.

DOD. 2009b. *Sleep Disturbance from Aviation Noise*. Defense Noise Working Group Technical Bulletin. November.

Eagan, M.E., G. Anderson, B. Nicholas, R. Horonjeff, and T. Tivnan. 2004. *Relation Between Aircraft Noise Reduction in Schools and Standardized Test Scores*. Washington, DC, FICAN.

Evans, G.W., M. Bullinger, and S. Hygge. 1998. *Chronic Noise Exposure and Physiological Response: A Prospective Study of Children Living Under Environmental Stress*. Psychological Science 9:75-77.

FAA. 1985. *Airport Improvement Program (AIP) Handbook*. Order No. 100.38.

FICAN. 1997. *Effects of Aviation Noise on Awakenings from Sleep*. June.

FICAN. 2007. *Findings of the FICAN Pilot Study on the Relationship Between Aircraft Noise Reduction and Changes in Standardised Test Scores*. Washington, DC, FICAN.

FICAN. 2008. *FICAN Recommendation for Use of ANSI Standard to Predict Awakenings from Aircraft Noise*. December.

FICON. 1992. *Federal Agency Review of Selected Airport Noise Analysis Issues*. August.

Fidell, S., and L. Silvati. 2004. *Parsimonious Alternatives to Regression Analysis for Characterizing Prevalence Rates of Aircraft Noise Annoyance*. Noise Control Engineering Journal 52:56–68.

Fidell, S., K. Pearsons, B. Tabachnick, R. Howe, L. Silvati, and D.S. Barber. 1995a. *Field Study of Noise-Induced Sleep Disturbance*. Journal of the Acoustical Society of America 98(2):1025-1033.

Fidell, S., K. Pearsons, R. Howe, B. Tabachnick, L. Silvati, and D.S. Barber. 1994. *Noise-Induced Sleep Disturbance in Residential Settings*. AL/OE-TR-1994-0131, Wright Patterson AFB, OH, Armstrong Laboratory, Occupational and Environmental Health Division.

Fidell, S., R. Howe, B. Tabachnick, K. Pearsons, and M. Sneddon. 1995b. *Noise-induced Sleep Disturbance in Residences near Two Civil Airports*. NASA Contractor Report 198252.

Finegold, L.S., C.S. Harris, and H.E. von Gierke. 1994. *Community Annoyance and Sleep Disturbance: Updated Criteria for Assessing the Impact of General Transportation Noise on People*. Noise Control Engineering Journal 42(1):25-30.

Green, K.B., B.S. Pasternack, and R.E. Shore. 1982. *Effects of Aircraft Noise on Reading Ability of School-Age Children.* Archives of Environmental Health 37(1):24-31.

Griefahn, B. 1978. *Research on Noise Disturbed Sleep Since 1973*. Proceedings of Third International Congress on Noise as a Public Health Problem, pp. 377-390 (as appears in NRC-CNRC NEF Validation Study: (2) Review of Aircraft Noise and Its Effects, A-1505.1, p. 31).

Haines, M.M., S.A. Stansfeld, J. Head, and R.F.S. Job. 2002. *Multilevel Modelling of Aircraft Noise on Performance Tests in Schools around Heathrow Airport London*. Journal of Epidemiology and Community Health 56:139-144.

Harris, C.M. 1979. *Handbook of Noise Control*. McGraw-Hill Book Co.

Horne, J.A., F.L. Pankhurst, L.A. Reyner, K. Hume, and I.D. Diamond. 1994. *A Field Study of Sleep Disturbance: Effects of Aircraft Noise and Other Factors on 5,742 Nights of Actimetrically Monitored Sleep in a Large Subject Sample*. American Sleep Disorders Association and Sleep Research Society: Sleep 17(2):146–195.

Klatte M., K. Bergström, and T. Lachmann. 2013. *Does Noise Affect Learning? A Short Review on Noise Effects on Cognitive Performance in Children*. Frontiers in Psychology 4:578.

Lazarus, H. 1990. *New Methods for Describing and Assessing Direct Speech Communication Under Disturbing Conditions*. Environment International 16:373-392.

Lercher, P., G.W. Evans, and M. Meis. 2003. *Ambient Noise and Cognitive Processes Among Primary School Children*. Journal of Environment and Behavior 35:725-735.

Lind, S.J., K. Pearsons, and S. Fidell. 1998. *Sound Insulation Requirements for Mitigation of Aircraft Noise Impact on Highline School District Facilities*. Volume I, BBN Systems and Technologies, BBN Report No. 8240.

Lukas, J.S. 1978. *Noise and Sleep: A Literature Review and a Proposed Criterion for Assessing Effect*, In Daryl N. May, ed., *Handbook of Noise Assessment*, Van Nostrand Reinhold Company: New York, pp. 313-334.

Manci, K.M., D.N. Gladwin, R. Villella, and M.G Cavendish. 1988. *Effects of Aircraft Noise and Sonic Booms on Domestic Animals and Wildlife: A Literature Synthesis*. US Fish and Wildlife Service National Ecology Research Center, Ft. Collins, Colorado, NERC-88/29. 88 pp.

Márki, F. 2013. *Outcomes of EU COSMA (Community Oriented Solutions to Minimise Aircraft Noise Annoyance) Project.* Budapest University of Technology and Economics, London. May.

Miedema, H.M., and C.G. Oudshoorn. 2001. *Annoyance from Transportation Noise: Relationships with Exposure Metrics DNL and DENL and Their Confidence Intervals*. Environmental Health Perspectives 109.4:409–416.

Miedema, H.M., and H. Vos. 1998. *Exposure-Response Relationships for Transportation Noise*. Journal of the Acoustical Society of America 104(6):3432–3445. December.

National Park Service. 1994. *Report to Congress: Report on Effects of Aircraft Overflights on the National Park System*. Prepared Pursuant to Public Law 100-91, The National Parks Overflights Act of 1987. 12 September.

NATO. 2000. *The Effects of Noise from Weapons and Sonic Booms, and the Impact on Humans, Wildlife, Domestic Animals and Structures*. Final Report of the Working Group Study Follow-up Program to the Pilot Study on Aircraft Noise, Report No. 241. June.

Newman, J.S., and K.R. Beattie. 1985. *Aviation Noise Effects*. US Department of Transportation, Federal Aviation Administration Report No. FAA-EE-85-2.

Ollerhead, J.B., C.J. Jones, R.E. Cadoux, A. Woodley, B.J. Atkinson, J.A. Horne, F. Pankhurst, L. Reyner, K.I. Hume, F. Van, A. Watson, I.D. Diamond, P. Egger, D. Holmes, and J. McKean. 1992. *Report of a Field Study of Aircraft Noise and Sleep Disturbance*. Commissioned by the UK Department of Transport for the 36 UK Department of Safety, Environment and Engineering, London, England: Civil Aviation Authority. December.

Pearsons, K.S., D.S. Barber, and B.G. Tabachnick. 1989. *Analyses of the Predictability of Noise-Induced Sleep Disturbance*. US Air Force Report HSD-TR-89-029. October.

Plotkin, K.J., B.H. Sharp, T. Connor, R. Bassarab, I. Flindell, and D. Schreckenberg. 2011. *Updating and Supplementing the Day-Night Average Sound Level (DNL)*. Wyle Report 11-04, DOT/FAA/AEE/2011-03. June.

Rosenblith, W.A., K.N. Stevens, and Staff of Bolt, Beranek, and Newman. 1953. *Handbook of Acoustic Noise Control, Vol. 2, Noise and Man*. US Air Force Report WADC TR-52-204.

Schreckenberg, D., and R. Schuemer. 2010. *The Impact of Acoustical, Operational and Non-Auditory Factors on Short-Term Annoyance Due to Aircraft Noise*. 39th International Congress on Noise Control Engineering (Inter-Noise 2010), Noise and Sustainability, Lisbon, Portugal. 13 - 16 June 2010.

Schultz, T.J. 1978. *Synthesis of Social Surveys on Noise Annoyance*. Journal of the Acoustical Society of America 64(2):377-405. August.

Sharp, B., T. Connor, D. McLaughlin, C. Clark, S. Stansfeld, and J. Hervey. 2013. *Assessing Aircraft Noise Conditions Affecting Student Learning*, ACRP Web Document 16, http://www.trb.org/Aviation1/Blurbs/170328.aspx Airport Cooperative Research Program, Transportation Research Board, Washington, DC.

Sharp, B.H., and K.J. Plotkin. 1984. *Selection of Noise Criteria for School Classrooms*. Wyle Research Technical Note TN 84-2 for the Port Authority of New York and New Jersey. October.

Smith, D.G., D.H. Ellis, and T.H. Johnston. 1988. *Raptors and Aircraft*, In R.L Glinski, B. Gron-Pendelton, M.B. Moss, M.N. LeFranc, Jr., B.A. Millsap, and S.W. Hoffman, eds., Proceedings of the Southwest Raptor Management Symposium, National Wildlife Federation, Washington, DC, pp. 360-367.

Stansfeld, S.A., and C. Clark. 2015. *Health Effects of Noise Exposure in Children*. Current Environmental Health Reports 2(2):171-178.

Stansfeld, S.A., B. Berglund, and C. Clark, I. Lopez-Barrio, P. Fischer, E. Öhrström, M.M. Haines, J. Head, S. Hygge, and I. van Kamp, B.F. Berry, on Behalf of the RANCH Study Team. 2005. *Aircraft and Road Traffic Noise and Children's Cognition and Health: A Cross-National Study*. Lancet 365:1942-1949.

Stevens, K.N., W.A. Rosenblith, and R.H. Bolt. 1953. *Neighborhood Reaction to Noise: A Survey and Correlation of Case Histories (A).* Journal of the Acoustical Society of America 25:833.

Stusnick, E., K.A. Bradley, J.A. Molino, and G. DeMiranda. 1992. *The Effect of Onset Rate on Aircraft Noise Annoyance, Volume 2: Rented Home Experiment*. Wyle Laboratories Research Report WR 92-3. March.

UKDfES. 2003. *Building Bulletin 93, Acoustic Design of Schools - A Design Guide*. London: The Stationary Office.

USEPA. 1974. *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*. USEPA Report 550/9-74-004. March.

USEPA. 1978. *Protective Noise Levels*. Office of Noise Abatement and Control, Washington, DC. USEPA Report 550/9-79-100. November.

Wesler, J.E. 1986. *Priority Selection of Schools for Soundproofing*. Wyle Research Technical Note TN 96-8 for the Port Authority of New York and New Jersey. October.

WHO. 1999. *Guidelines for Community Noise*. Berglund, B., T. Lindvall, and D. Schwela, eds.

Wyle Laboratories. 1970. *Supporting Information for the Adopted Noise Regulations for California Airports*. Wyle Report WCR 70-3(R).

Appendix B-2

Noise Modeling

This page intentionally left blank

B.2 NOISE MODELING AT KINSTON REGIONAL JETPORT

The following sections describe input data used in the noise modeling process for the Kinston Regional Jetport (ISO) considered in the Proposed Action. These data were developed in coordination with the United States Air Force (Air Force) Air Combat Command (ACC), Air Force Civil Engineer Center (AFCEC), Seymour Johnson Air Force Base (AFB), and personnel at ISO.

B.2.1 Kinston Regional Jetport Operations

The first step in estimating the effects of the contractor-owned/contractor-operated (COCO) adversary air (ADAIR) action was to determine the baseline operations at ISO. Flight tracks are based on Terminal Procedure Publications for ISO with further refinement based on communications with ISO personnel. Operations at ISO were created from information gathered from the Flightaware database, during a site visit made in October 2019, and from follow up communications with ISO operators and personnel. Operations by aircraft from Seymour Johnson AFB occur at ISO. F-15Es and KC-135Rs perform closed pattern operations at ISO. The KC-135Rs are scheduled to be replaced by KC-46 aircraft and expected to perform similar operations at ISO. Because of this, the baseline operations were modeled with KC-135R operations at ISO, and all ADAIR scenarios had KC-46 aircraft modeled as performing operations at ISO in place of the KC-135Rs.

The baseline has a total of 20,624 operations at ISO. These operations include civilian and military aircraft operations and are listed in **Table B-5**, partitioned into aircraft type and organization.

Modeling of the noise emissions from civilian operations was done with the Aviation Environmental Design Tool (AEDT). Modeling of the noise emissions from the military and COCO ADAIR aircraft was done with the NOISEMAP program.

Modeling of the Proposed Action at ISO included an estimated 2,720 sorties at the airport by COCO ADAIR aircraft. Trips off the airport for maintenance and some pilot proficiency time are proposed for 130 of the 2,720 sorties. The balance of 2,590 sorties would be dedicated to ADAIR training activity with the Seymour Johnson AFB F-15Es in special use airspace. **Table B-6** contains the operations modeled for the baseline as well as the 6,208 COCO ADAIR aircraft operations.

A SORTIE IS A SINGLE FLIGHT, BY ONE AIRCRAFT, FROM TAKEOFF TO LANDING WHILE A SORTIE-OPERATION IS THE USE OF ONE AIRSPACE UNIT (E.G., MILITARY OPERATIONS AREA) BY ONE AIRCRAFT. THE NUMBER OF SORTIE-OPERATIONS IS USED TO QUANTIFY THE NUMBER OF USES BY AIRCRAFT AND TO ACCURATELY MEASURE POTENTIAL IMPACTS (E.G., NOISE, AIR QUALITY, AND SAFETY IMPACTS). A SORTIE-OPERATION IS NOT A MEASURE OF HOW LONG AN AIRCRAFT USES AN AIRSPACE UNIT, NOR DOES IT INDICATE THE NUMBER OF AIRCRAFT IN AN AIRSPACE UNIT DURING A GIVEN PERIOD; IT IS A MEASUREMENT FOR THE NUMBER OF TIMES A SINGLE AIRCRAFT USES A PARTICULAR AIRSPACE UNIT.

This page intentionally left blank

Table B-5
Baseline Operations at Kinston Regional Jetport

Category	Subcategory	Representing Aircraft Types	Modeled Aircraft ID (if different)	Departures			Nonoverhead Arrivals			Overhead Arrivals			Closed Patterns*			Totals		
				Day (7am-10pm)	Night (10pm-7am)	Total	Day (7am-10pm)	Night (10pm-7am)	Total	Day (7am-10pm)	Night (10pm-7am)	Total	Day (7am-10pm)	Night (10pm-7am)	Total	Day (7am-10pm)	Night (10pm-7am)	Total
Military	Transient Aircraft	Fighters	AV-8B	47	3	50	47	3	50	-	-	-	138	8	146	232	14	246
		4-engine turboprops	C-130E	16	-	16	16	-	16	-	-	-	48	-	48	80	-	80
		2-engine turboprops	C-123	674	35	709	674	35	709	-	-	-	1,942	102	2,044	3,290	172	3,462
		Transports	B-757	275	14	289	275	14	289	-	-	-	794	42	836	1,344	70	1,414
		Helos	AH64	160	9	169	160	9	169	-	-	-	460	24	484	780	42	822
	Seymour Johnson Aircraft	F-15E		333	-	333	167	-	167	166	-	166	2,000	-	2,000	2,666	-	2,666
		KC-135		52	-	52	52	-	52	-	-	-	312	-	312	416	-	416
Based Aircraft	Civilian	Small Prop	GASEPF	488	-	488	488	-	488	-	-	-	2,578	-	2,578	3,554	-	3,554
		Small Jet	GIV	1,109	-	1,109	1,109	-	1,109	-	-	-	0	-	-	2,218	-	2,218
		Helos	TH-55	319	-	319	319	-	319	-	-	-	1,688	-	1,688	2,326	-	2,326
Transient Civilian	Cargo	Antonov-124	B747-800	22	-	22	22	-	22	-	-	-	-	-	-	44	-	44
	Air Carrier	RJ	EMB145	26	-	26	26	-	26	-	-	-	-	-	-	52	-	52
	Air Taxi and GA Jet	Cessna Citation CJ1-CJ4, II & V	CNA525C	238	8	246	238	8	246	-	-	-	-	-	-	476	16	492
		Cessna Citation 560XL, others	CNA560XL	260	8	268	260	8	268	-	-	-	-	-	-	520	16	536
		Gulfstream GIV, G150, G280, V, others	GIV	356	4	360	356	4	360	-	-	-	-	-	-	712	8	720
		Dornier 328	D0328	46	-	46	46	-	46	-	-	-	-	-	-	92	-	92
	GA 2-engine turboprop or piston	Cessna 441, others	Cessna 441	122	6	128	122	6	128	-	-	-	-	-	-	244	12	256
	GA 1-engine turboprop or piston	Cessna 172, others	GASEPF	598	16	614	598	16	614	-	-	-	-	-	-	1,196	32	1,228
Military				**1,557**	**61**	**1,618**	**1,391**	**61**	**1,452**	**166**	**-**	**166**	**5,694**	**176**	**5,870**	8,808	298	9,106
Civilian				**3,584**	**42**	**3,626**	**3,584**	**42**	**3,626**	**-**	**-**	**-**	**4,266**	**0**	**4,266**	**11,434**	**84**	**11,518**
Totals				**5,141**	**103**	**5,244**	**4,975**	**103**	**5,078**	**166**	**-**	**166**	**9,960**	**176**	**10,136**	**20,242**	**382**	**20,624**

Note:
* Each closed pattern is counted as two operations: one operation for the part of the closed pattern where the aircraft is leaving the runway and one operation for the part of the pattern where the aircraft returns to the runway.

Table B-6
Baseline Operations at Kinston Regional Jetport Plus Contractor-Owned/Contractor-Operated Adversary Aircraft Operations

Category	Subcategory	Representing Aircraft Types	Modeled Aircraft ID (if different)	Departures			Nonoverhead Arrivals			Overhead Arrivals			Closed Patterns[1]			Totals		
				Day (7am-10pm)	Night (10pm-7am)	Total	Day (7am-10pm)	Night (10pm-7am)	Total	Day (7am-10pm)	Night (10pm-7am)	Total	Day (7am-10pm)	Night (10pm-7am)	Total	Day (7am-10pm)	Night (10pm-7am)	Total
Military	Transient Aircraft	Fighters	AV-8B	47	3	50	47	3	50	-	-	-	138	8	146	232	14	246
		4-engine turboprops	C-130E	16	-	16	16	-	16	-	-	-	48	-	48	80	-	80
		2-engine turboprops	C-123	674	35	709	674	35	709	-	-	-	1,942	102	2,044	3,290	172	3,462
		Transports	B-757	275	14	289	275	14	289	-	-	-	794	42	836	1,344	70	1,414
		Helos	AH64	160	9	169	160	9	169	-	-	-	460	24	484	780	42	822
	Seymour Johnson Aircraft	F-15E		333	-	333	167	-	167	166	-	166	2,000	-	2,000	2,666	-	2,666
		KC-135		52	-	52	52	-	52	-	-	-	312	-	312	416	-	416
Based Aircraft	COCO ADAIR[2]	A-4K, F-5, T-59	A-4C, F-5E, T-45	2,671	49	2,720	1,311	49	1,360	1,360	-	1,360	768	-	768	6,110	98	6,208
	Civilian	Small Prop	GASEPF	488	-	488	488	-	488	-	-	-	2,578	-	2,578	3,554	-	3,554
		Small Jet	GIV	1,109	-	1,109	1,109	-	1,109	-	-	-	-	-	-	2,218	-	2,218
		Helos	TH-55	319	-	319	319	-	319	-	-	-	1,688	-	1,688	2,326	-	2,326
Transient Civilian	Cargo	Antonov-124	B747-800	22	-	22	22	-	22	-	-	-	-	-	-	44	-	44
	Air Carrier	RJ	EMB145	26	-	26	26	-	26	-	-	-	-	-	-	52	-	52
	Air Taxi and GA Jet	Cessna Citation CJ1-CJ4, II & V	CNA525C	238	8	246	238	8	246	-	-	-	-	-	-	476	16	492
		Cessna Citation 560XL, others	CNA560XL	260	8	268	260	8	268	-	-	-	-	-	-	520	16	536
		Gulfstream GIV, G150, G280, V, others	GIV	356	4	360	356	4	360	-	-	-	-	-	-	712	8	720
		Dornier 328	D0328	46	-	46	46	-	46	-	-	-	-	-	-	92	-	92
	GA 2-engine turboprop or piston	Cessna 441, others	Cessna 441	122	6	128	122	6	128	-	-	-	-	-	-	244	12	256
	GA 1-engine turboprop or piston	Cessna 172, others	GASEPF	598	16	614	598	16	614	-	-	-	-	-	-	1,196	32	1,228
Military				**1,557**	**61**	**1,618**	**1,391**	**61**	**1,452**	**166**	**0**	**166**	**5,694**	**176**	**5,870**	**8,808**	**298**	**9,106**
Civilian				**6,255**	**91**	**6,346**	**4,895**	**91**	**4,986**	**1,360**	**-**	**1,360**	**5,034**	**-**	**5,034**	**17,544**	**182**	**17,726**
Totals				**7,812**	**152**	**7,964**	**6,286**	**152**	**6,438**	**1,526**	**-**	**1,526**	**10,728**	**176**	**10,904**	**26,352**	**480**	**26,832**

Notes:
[1] Each closed pattern is counted as two operations: one operation for the part of the closed pattern where the aircraft is leaving the runway and one operation for the part of the pattern where the aircraft returns to the runway.
[2] Contractor-owned/contractor-operated (COCO) adversary air (ADAIR) aircraft are counted as civilian operations by Air Traffic Control.

B.2.2 Runway and Flight Track Use

This section describes the flight tracks used by the aircraft operating at ISO as well as the runway utilization. Utilization percentages are provided for each runway in **Table B-7**. Flight track maps for all aircraft (fixed-wing and helicopter) are presented on **Figure B-13** (departures), **Figure B-14** (arrivals), and **Figure B-15** (closed patterns). Closed pattern flight tracks represent aircraft patterns that depart and arrive on the same runway. Example flight profiles that use closed pattern flight tracks are touch and go operations under visual flight rules conditions.

Table B-7
Runway Usage for Aircraft at Kinston Regional Jetport

Aircraft Category	Subcategory	Modeled Aircraft ID	Runway ID (or heading for helos)	Departures		Nonoverhead Arrivals		Overhead Arrivals		VFR Closed Patterns		IFR Closed Patterns	
				Day (7am-10pm)	Night (10pm-7am)	Day (7am-10pm)	Night (10pm-7am)	Day (7am-10pm)	Night (10pm-7am)	Day (7am-10pm)	Night (10pm-7am)	Day (7am-10pm)	Night (10pm-7am)
Military Transient	Other	All Planes in Subcategory	05	90%	90%	90%	90%	-	-	90%	90%	100%	100%
			23	10%	10%	10%	10%	-	-	10%	10%	0%	0%
	Seymour Johnson	F-15	05	90%	90%	90%	90%	90%	90%	90%	90%	100%	100%
			23	10%	10%	10%	10%	10%	10%	10%	10%	0%	0%
		KC-135	05	90%	90%	90%	90%	-	-	90%	90%	100%	100%
			23	10%	10%	10%	10%	-	-	10%	10%	0%	0%
Based Aircraft	COCO ADAIR	A-4K, F-5, T-59	05	90%	90%	90%	90%	90%	90%	90%	90%	-	-
			23	10%	10%	10%	10%	10%	10%	10%	10%	-	-
	Civilian	All Planes in Subcategory	05	90%	90%	90%	90%	-	-	90%	90%	100%	100%
			23	10%	10%	10%	10%	-	-	10%	10%	0%	0%
Civilian	Cargo	Antonov-124	05	90%	90%	90%	90%	-	-	90%	90%	100%	100%
			23	10%	10%	10%	10%	-	-	10%	10%	0%	0%
	Air Carrier	All Planes in Subcategory	05	90%	90%	90%	90%	-	-	90%	90%	100%	100%
			23	10%	10%	10%	10%	-	-	10%	10%	0%	0%
	Air Taxi and GA Jet	All Planes in Subcategory	05	90%	90%	90%	90%	-	-	90%	90%	100%	100%
			23	10%	10%	10%	10%	-	-	10%	10%	0%	0%
	GA 2-engine turboprop or piston	Cessna 441	05	90%	90%	90%	90%	-	-	90%	90%	100%	100%
			23	10%	10%	10%	10%	-	-	10%	10%	0%	0%
	GA 2-engine turboprop or piston	GASEPF	05	90%	90%	90%	90%	-	-	90%	90%	100%	100%
			23	10%	10%	10%	10%	-	-	10%	10%	0%	0%

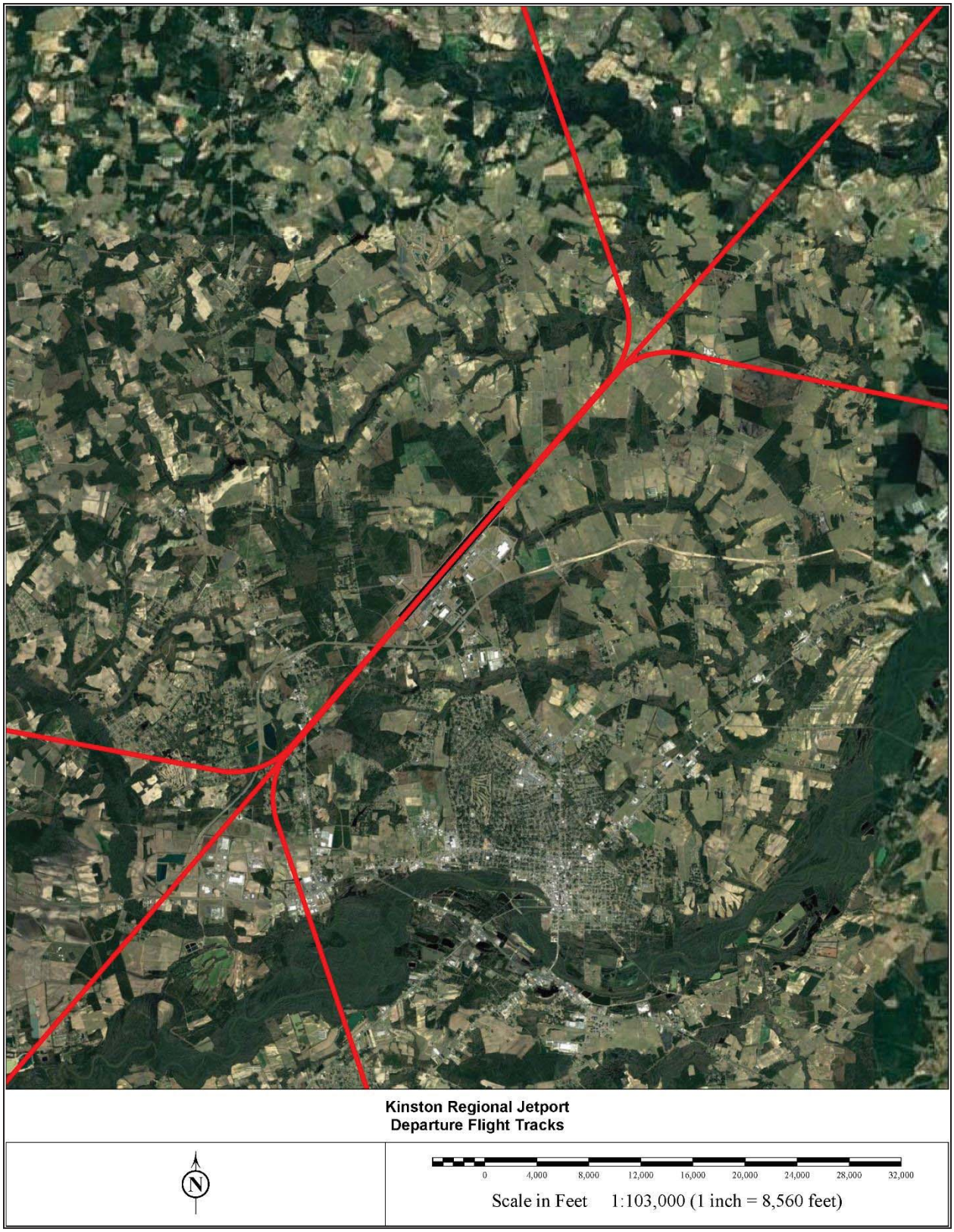


Figure B-13. Departure Flight Tracks at Kinston Regional Jetport.

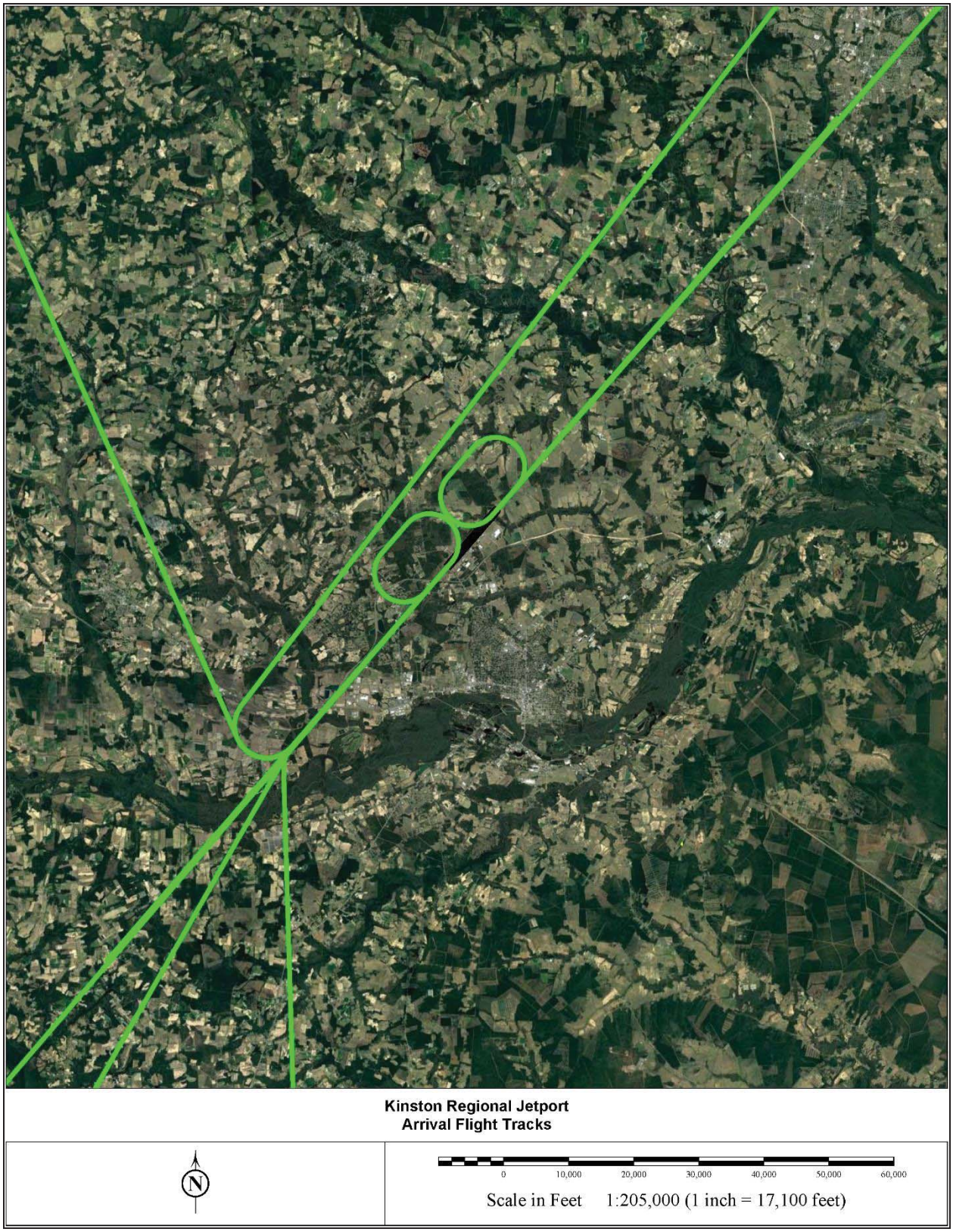


Figure B-14. Arrival Flight Tracks at Kinston Regional Jetport.

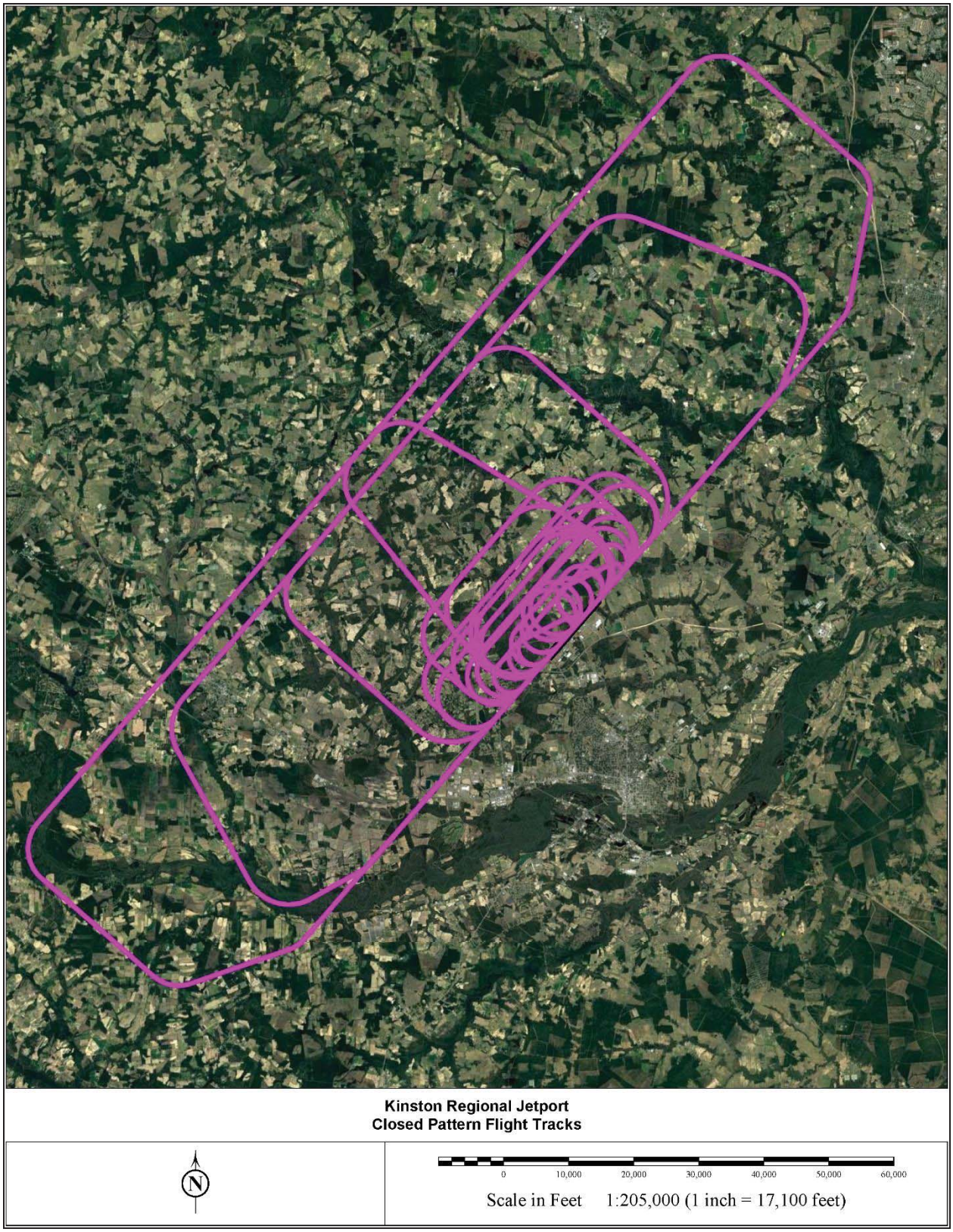


Figure B-15. Closed Pattern Flight Tracks at Kinston Regional Jetport.

B.2.3 Flight Profiles and Aircraft

Table B-8 shows the possible aircraft types to be used by COCO ADAIR. It displays the High, Medium, and Low Noise Scenarios for three surrogate aircraft types. The Air Force identified three categories of ADAIR capabilities (A, B, and C) that would fulfill the needs of fighter squadrons. The 4th Fighter Wing at Seymour Johnson AFB is designated as needing the capabilities of Category B. To fulfill the requirements of a category, a contractor could provide a variety of aircraft with the appropriate specifications. Because the type of aircraft for contract ADAIR are not known at this time, representative noise surrogates were selected for the lowest through highest potential noise emission scenarios for the types of aircraft that contractors may select to provide for each of the categories. To model a given noise scenario for a certain category, all contract ADAIR flight operations were assigned to the surrogate. All three scenarios for Category B were modeled separately for ISO.

Table B-8
Aircraft Scenarios

Category	High Noise Scenario	Medium Noise Scenario	Low Noise Scenario
B	A-4K (A-4C surrogate)	F-5 (F-5E surrogate)	T-59 Hawk (T-45 surrogate)

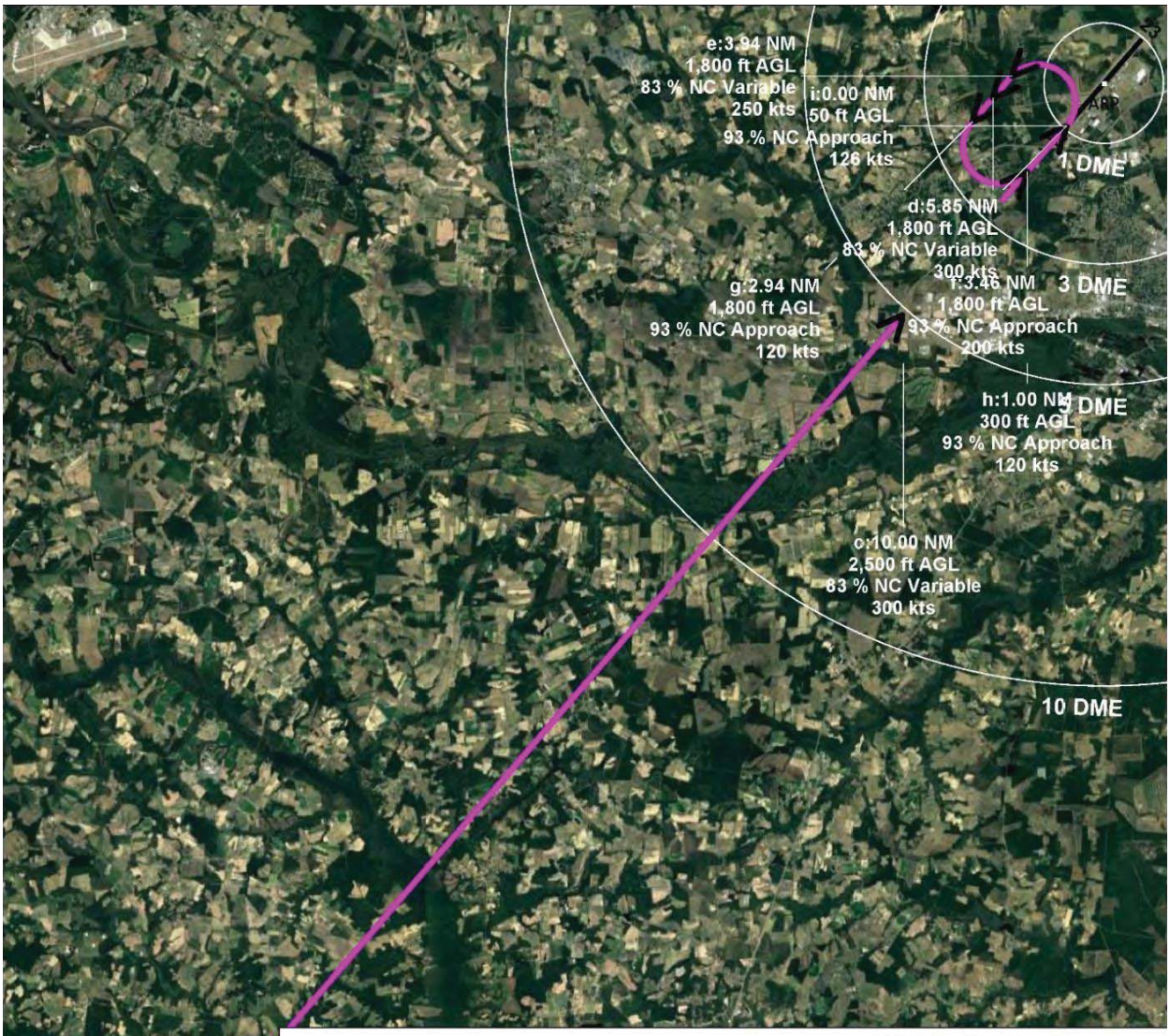
The Category B aircraft were modeled as the T-45 for the Low Noise Scenario, the F-5E for the Medium Noise Scenario, and the A-4C for the High Noise Scenario. Because it is unknown which aircraft type or combination thereof that the contractor would bring to ISO, each scenario was modeled separately as if it were the only aircraft in the contract ADAIR inventory.

Representative profiles provide the speed and power setting of each type of aircraft as a function of distance along the flight track for the representative maneuvers. For modeling purposes, the appropriate profile was used for all flight tracks that conform to that maneuver type. For example, all overhead break arrival tracks utilize the representative profile for modeling that maneuver.

The operations tables (**Tables B-5** and **B-6**) can be used with the runway usage table (**Table B-7**) to understand the distribution of the following representative profiles that were modeled on tracks associated with each runway. One important point to note in looking at flight profiles: the description of the power setting indicates the aircraft's configuration. For modeling noise emissions, there are two different configurations. Any description with the words Approach or Parallel indicates that the aircraft is fully configured for arrival (landing gear down, flaps set, etc.). All other descriptions in the profile indicate the aircraft is not fully configured for arrival.

B.2.3.1 COCO ADAIR Aircraft Representative Flight Profiles

Flight Profiles for COCO ADAIR High Noise Scenario A-4N (A-4C Surrogate)



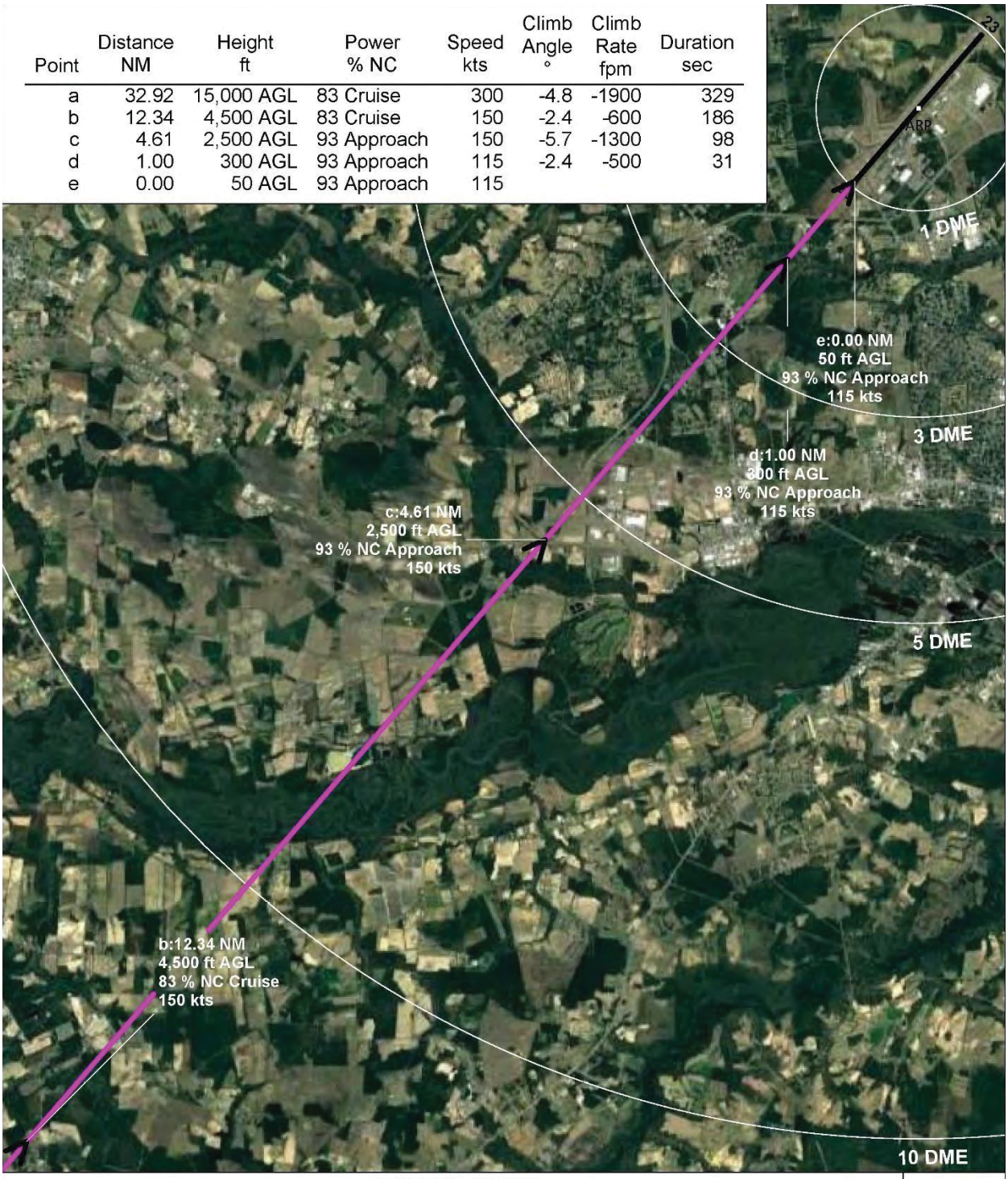
Point	Distance NM	Height ft	Power % NC	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	49.37	11,000 AGL	83 Variable	300	-3.6	-1900	206
b	32.25	4,410 AGL	83 Variable	300	-0.8	-400	267
c	10.00	2,500 AGL	83 Variable	300	-1.6	-800	50
d	5.85	1,800 AGL	83 Variable	300	0.0	0	25
e	3.94	1,800 AGL	83 Variable	250	0.0	0	8
f	3.46	1,800 AGL	93 Approach	200	0.0	0	12
g	2.94	1,800 AGL	93 Approach	120	-7.3	-1500	58
h	1.00	300 AGL	93 Approach	120	-2.4	-500	29
i	0.00	50 AGL	93 Approach	126			

Flight Profile ADHA01
ADAIR Cat B High
Flight Track: 05OHA1

0 10,000 20,000 30,000 40,000 50,000

Scale in Feet 1:167,000 (1 inch = 13,900 feet)

Point	Distance NM	Height ft	Power % NC	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	32.92	15,000 AGL	83 Cruise	300	-4.8	-1900	329
b	12.34	4,500 AGL	83 Cruise	150	-2.4	-600	186
c	4.61	2,500 AGL	93 Approach	150	-5.7	-1300	98
d	1.00	300 AGL	93 Approach	115	-2.4	-500	31
e	0.00	50 AGL	93 Approach	115			



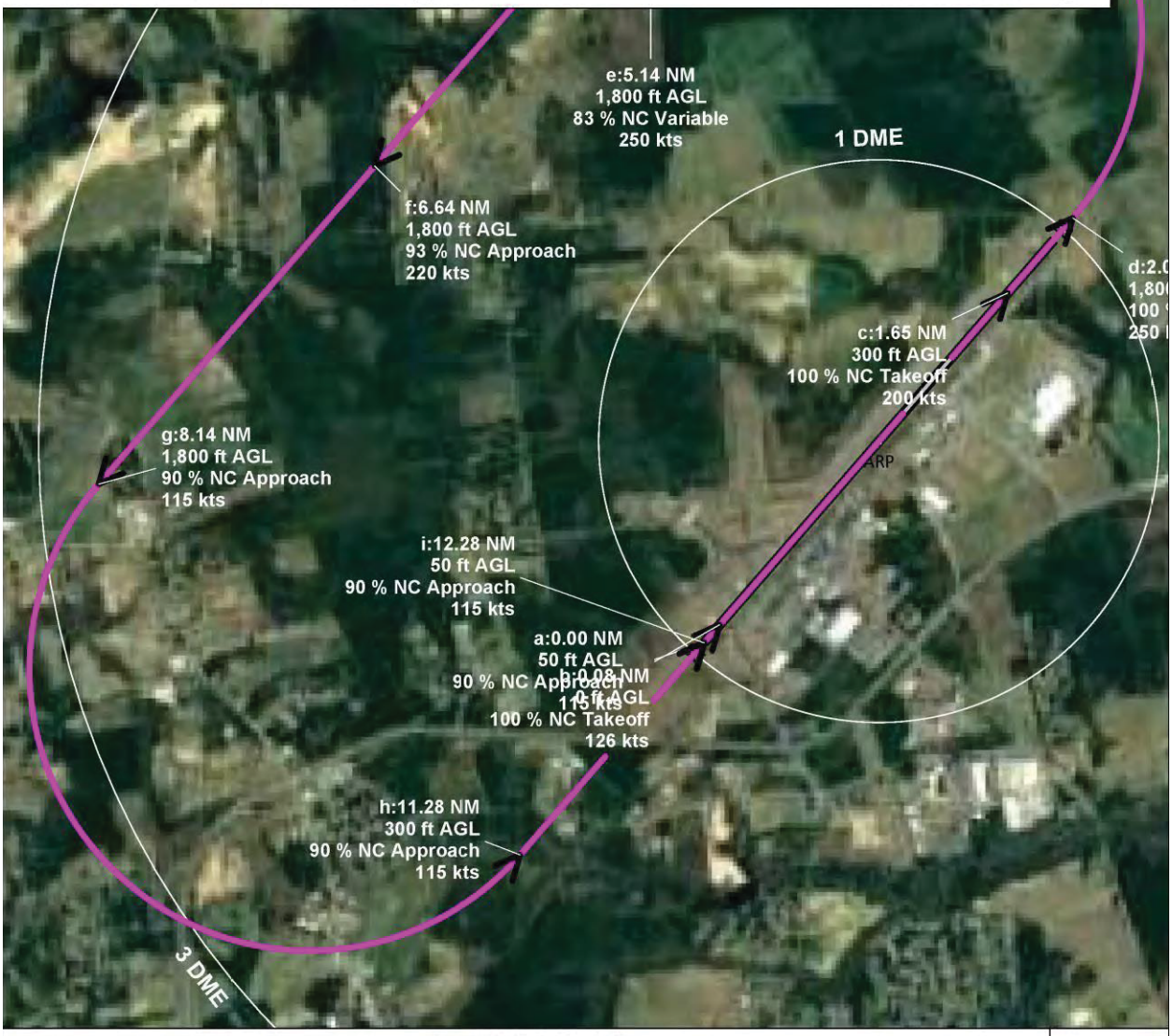
Flight Profile ADHA02
ADAIR Cat B High
Flight Track: 05A01

0 4,000 8,000 12,000 16,000 20,000 24,000 28,000

Scale in Feet 1:84,100 (1 inch = 7,000 feet)

N

Point	Distance NM	Height ft	Power % NC	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec	Notes
a	0.00	50 AGL	90 Approach	115	-5.7	-1200	2	
b	0.08	0 AGL	100 Takeoff	126	1.8	500	35	
c	1.65	300 AGL	100 Takeoff	200	34.9	15900	6	
d	2.00	1,800 AGL	100 Variable	250	0.0	0	45	
e	5.14	1,800 AGL	83 Variable	250	0.0	0	23	
f	6.64	1,800 AGL	93 Approach	220	0.0	0	32	
g	8.14	1,800 AGL	90 Approach	115	-4.5	-900	98	
h	11.28	300 AGL	90 Approach	115	-2.4	-500	31	
i	12.28	50 AGL	90 Approach	115				Threshold crossing

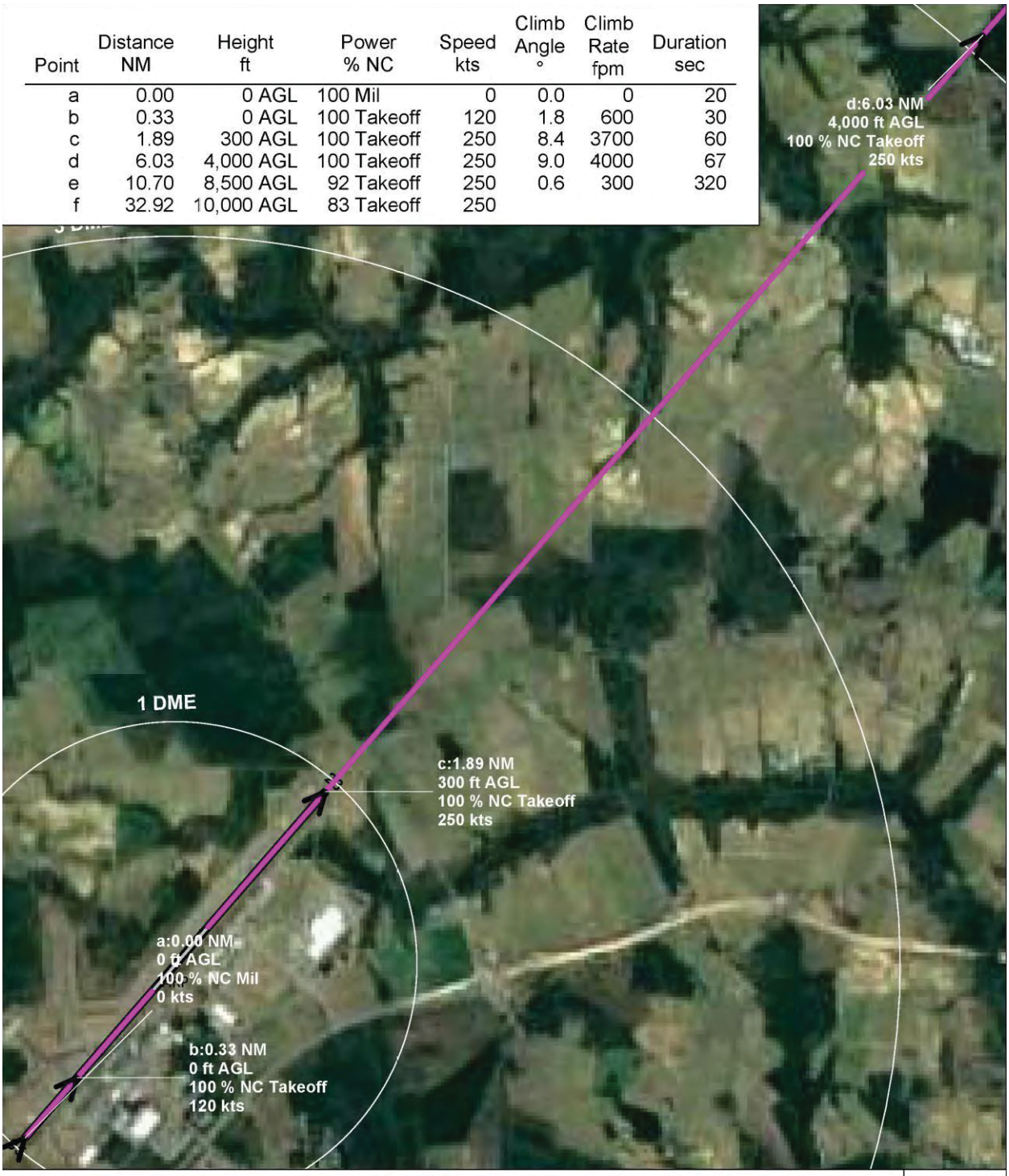


Flight Profile ADHC01
ADAIR Cat B High
Flight Track: 05CP01

0 2,000 4,000 6,000 8,000 10,000

Scale in Feet 1:35,700 (1 inch = 2,970 feet)

Point	Distance NM	Height ft	Power % NC	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	0.00	0 AGL	100 Mil	0	0.0	0	20
b	0.33	0 AGL	100 Takeoff	120	1.8	600	30
c	1.89	300 AGL	100 Takeoff	250	8.4	3700	60
d	6.03	4,000 AGL	100 Takeoff	250	9.0	4000	67
e	10.70	8,500 AGL	92 Takeoff	250	0.6	300	320
f	32.92	10,000 AGL	83 Takeoff	250			

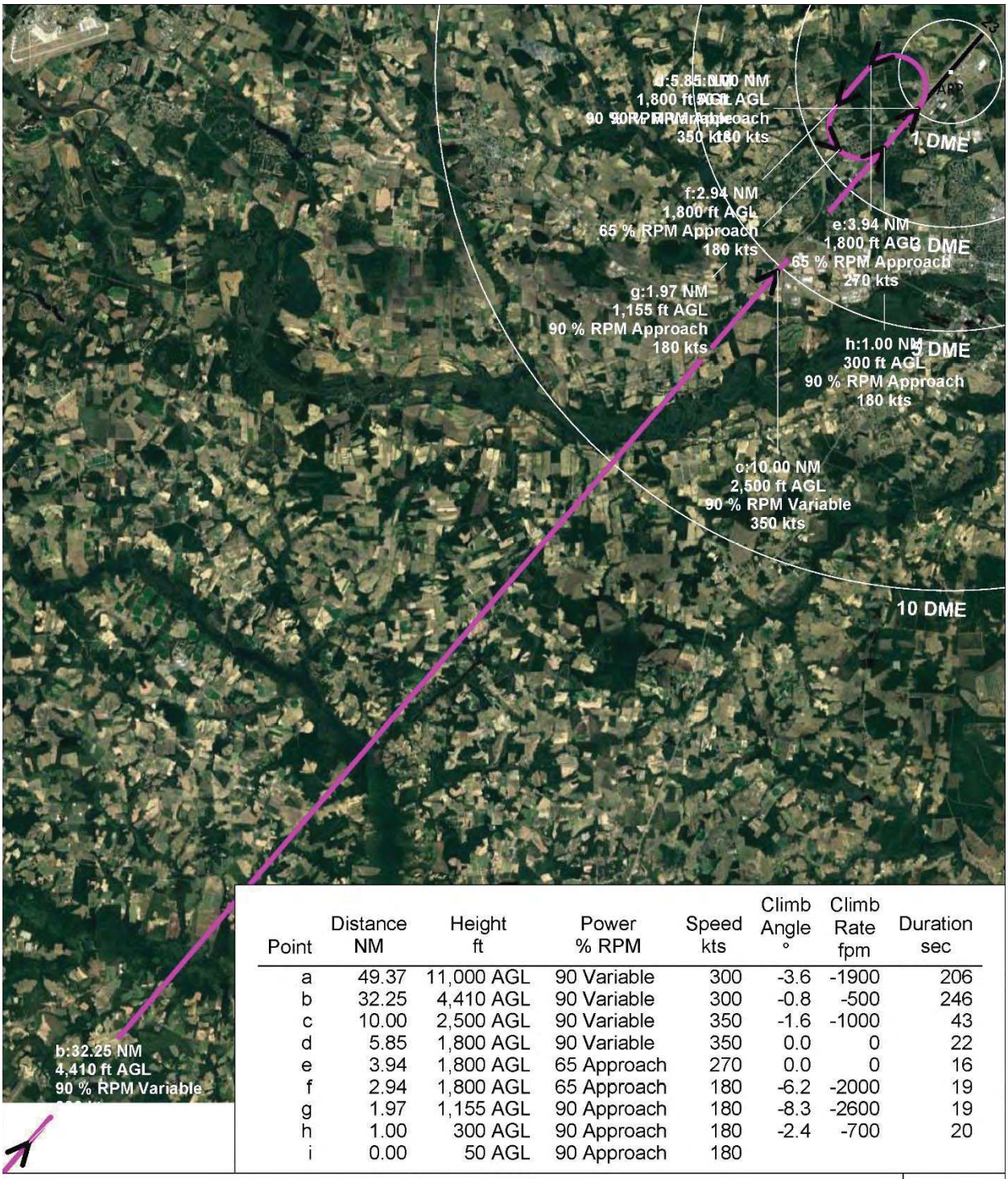


Flight Profile ADHD01
ADAIR Cat B High
Flight Track: 05D01

0 2,000 4,000 6,000 8,000 10,000

Scale in Feet 1:35,600 (1 inch = 2,970 feet)

Flight Profiles for COCO ADAIR Medium Noise Scenario F-5 (F-5E Surrogate)



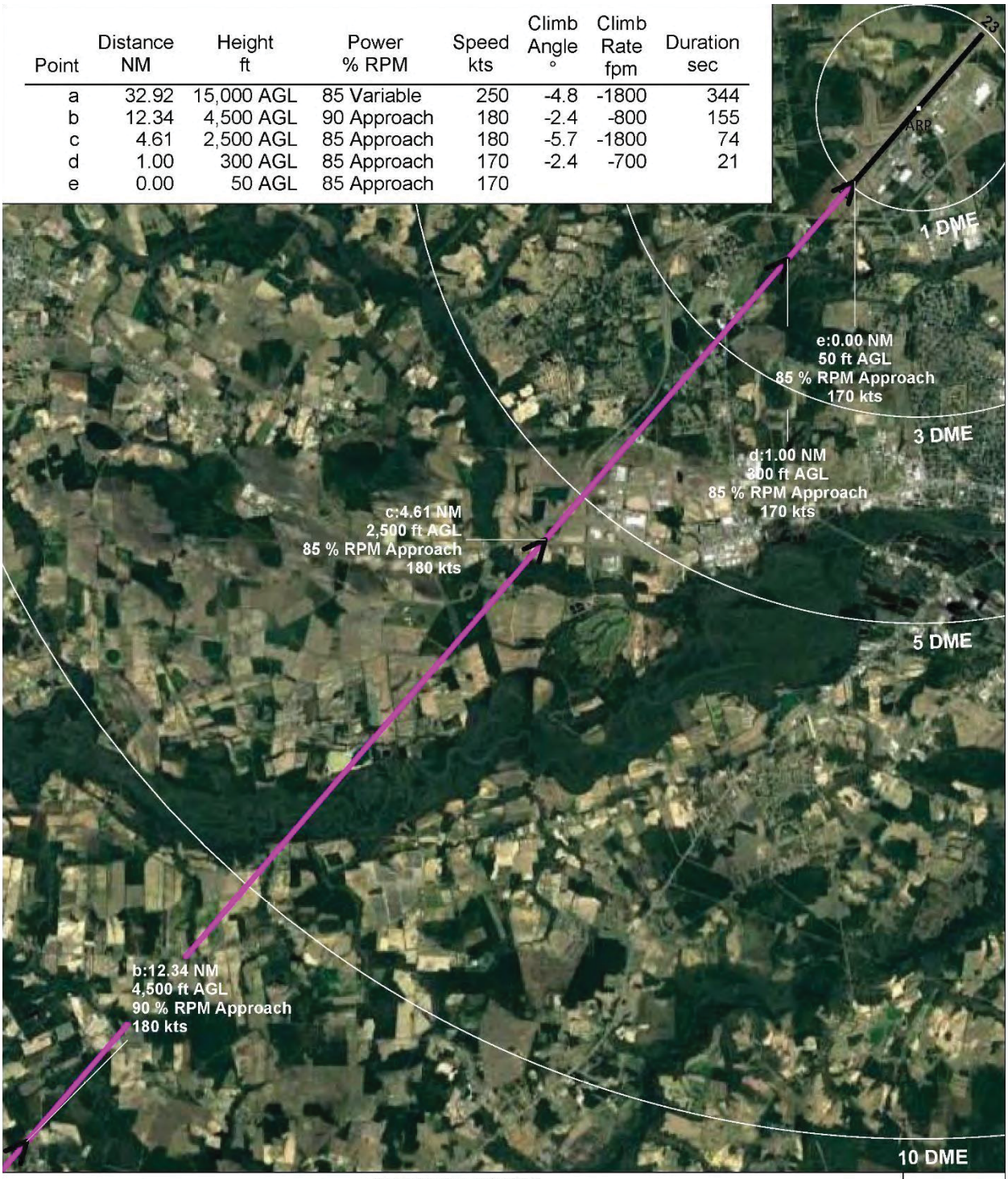
Point	Distance NM	Height ft	Power % RPM	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	49.37	11,000 AGL	90 Variable	300	-3.6	-1900	206
b	32.25	4,410 AGL	90 Variable	300	-0.8	-500	246
c	10.00	2,500 AGL	90 Variable	350	-1.6	-1000	43
d	5.85	1,800 AGL	90 Variable	350	0.0	0	22
e	3.94	1,800 AGL	65 Approach	270	0.0	0	16
f	2.94	1,800 AGL	65 Approach	180	-6.2	-2000	19
g	1.97	1,155 AGL	90 Approach	180	-8.3	-2600	19
h	1.00	300 AGL	90 Approach	180	-2.4	-700	20
i	0.00	50 AGL	90 Approach	180			

Flight Profile ADMA01
ADAIR Cat B Med
Flight Track: 05OHA1

0 10,000 20,000 30,000 40,000 50,000

Scale in Feet 1:167,000 (1 inch = 13,900 feet)

Point	Distance NM	Height ft	Power % RPM	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	32.92	15,000 AGL	85 Variable	250	-4.8	-1800	344
b	12.34	4,500 AGL	90 Approach	180	-2.4	-800	155
c	4.61	2,500 AGL	85 Approach	180	-5.7	-1800	74
d	1.00	300 AGL	85 Approach	170	-2.4	-700	21
e	0.00	50 AGL	85 Approach	170			



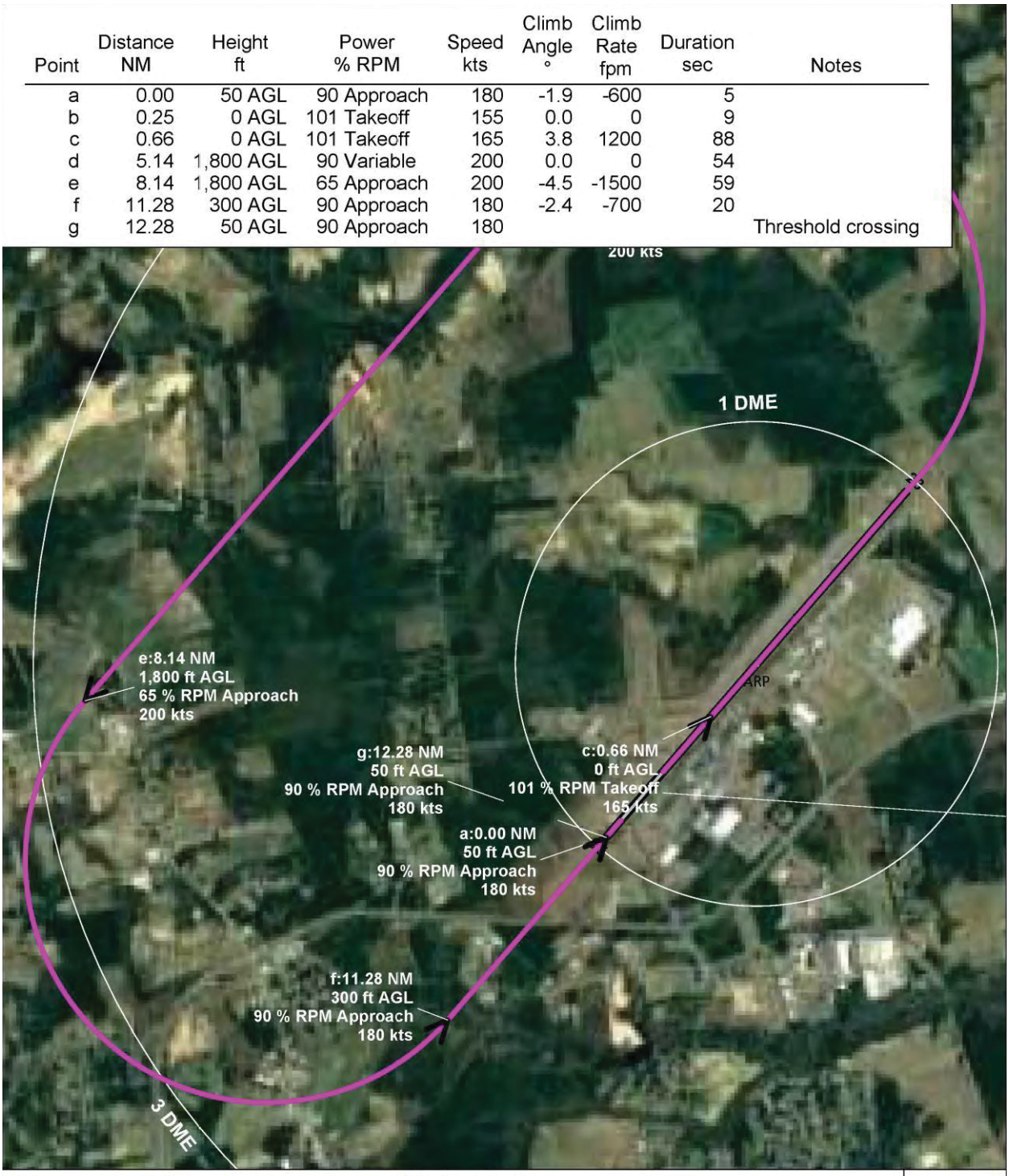
Flight Profile ADMA02
ADAIR Cat B Med
Flight Track: 05A01

0 4,000 8,000 12,000 16,000 20,000 24,000 28,000

Scale in Feet 1:84,100 (1 inch = 7,000 feet)

N

Point	Distance NM	Height ft	Power % RPM	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec	Notes
a	0.00	50 AGL	90 Approach	180	-1.9	-600	5	
b	0.25	0 AGL	101 Takeoff	155	0.0	0	9	
c	0.66	0 AGL	101 Takeoff	165	3.8	1200	88	
d	5.14	1,800 AGL	90 Variable	200	0.0	0	54	
e	8.14	1,800 AGL	65 Approach	200	-4.5	-1500	59	
f	11.28	300 AGL	90 Approach	180	-2.4	-700	20	
g	12.28	50 AGL	90 Approach	180				Threshold crossing

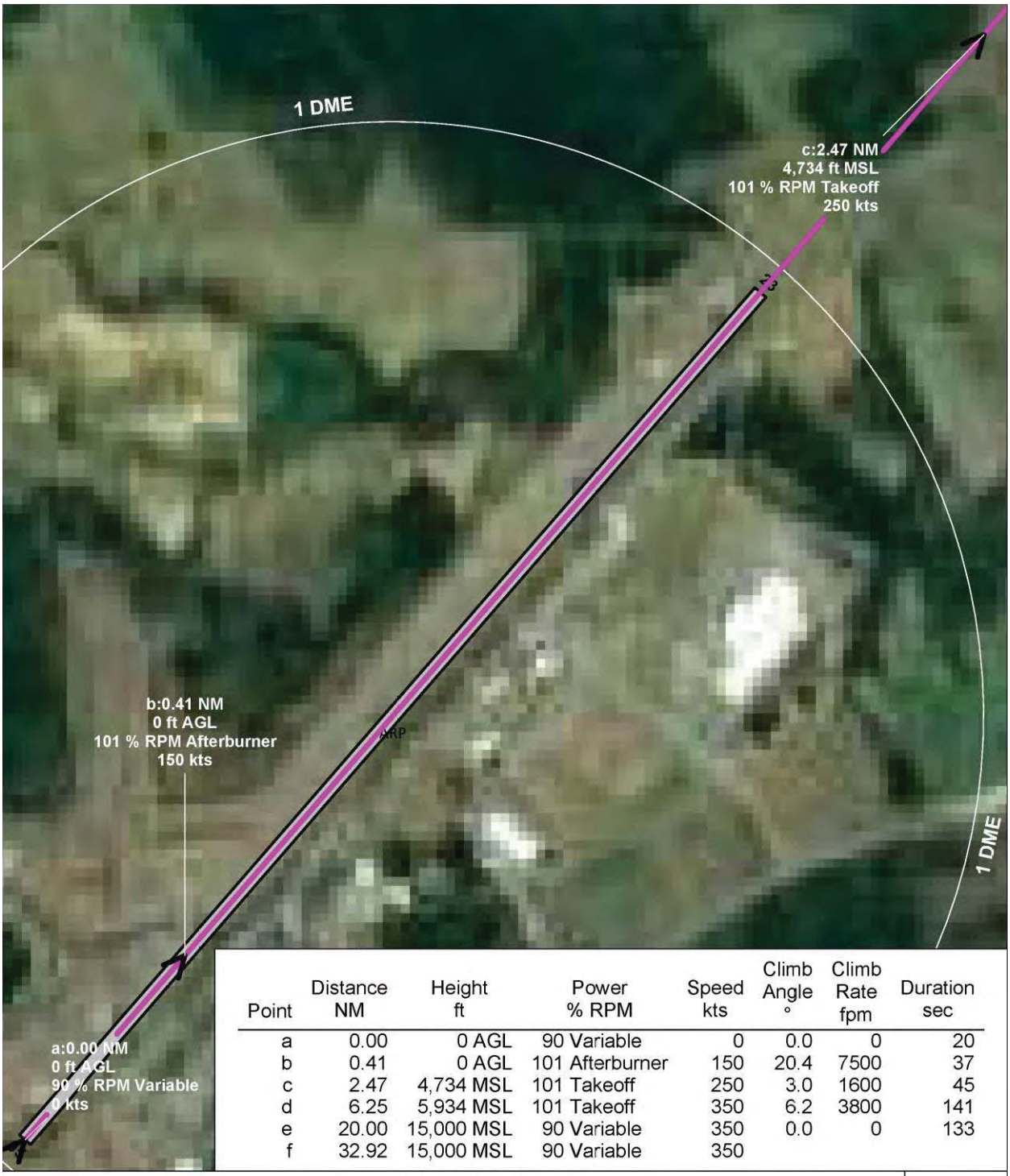


Flight Profile ADMC01
ADAIR Cat B Med
Flight Track: 05CP01

0 2,000 4,000 6,000 8,000 10,000

Scale in Feet 1:35,700 (1 inch = 2,970 feet)

N



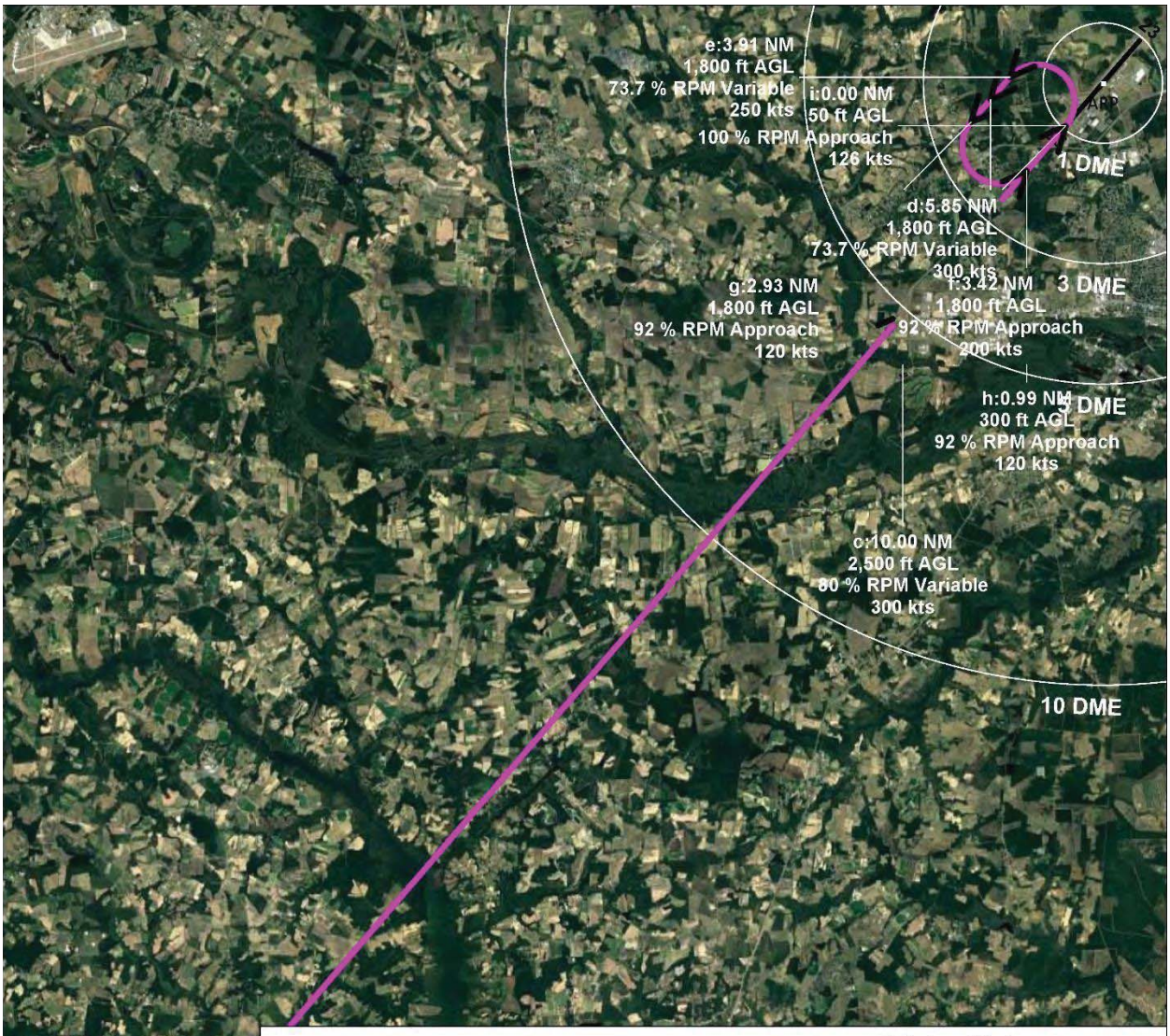
Point	Distance NM	Height ft	Power % RPM	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	0.00	0 AGL	90 Variable	0	0.0	0	20
b	0.41	0 AGL	101 Afterburner	150	20.4	7500	37
c	2.47	4,734 MSL	101 Takeoff	250	3.0	1600	45
d	6.25	5,934 MSL	101 Takeoff	350	6.2	3800	141
e	20.00	15,000 MSL	90 Variable	350	0.0	0	133
f	32.92	15,000 MSL	90 Variable	350			

Flight Profile ADMD01
ADAIR Cat B Med
Flight Track: 05D01

0 400 800 1,200 1,600 2,000 2,400 2,800 3,200 3,600 4,000 4,400 4,800

Scale in Feet 1:14,600 (1 inch = 1,210 feet)

Flight Profiles for COCO ADAIR Low Noise Scenario T-59 Hawk (T-45 Surrogate)



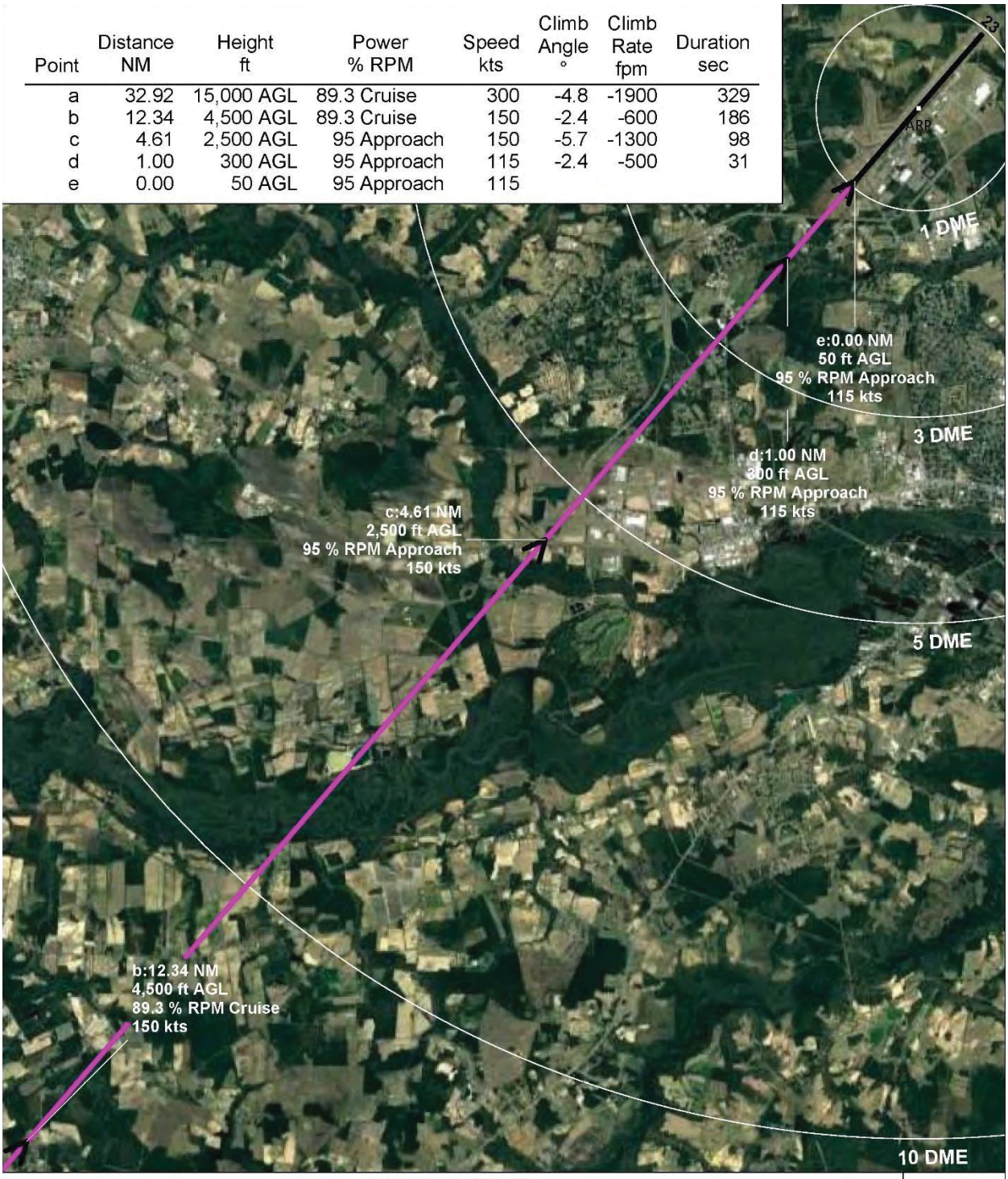
Point	Distance NM	Height ft	Power % RPM	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	49.37	11,000 AGL	80 Variable	300	-3.6	-1900	206
b	32.25	4,410 AGL	80 Variable	300	-0.8	-400	267
c	10.00	2,500 AGL	80 Variable	300	-1.6	-800	50
d	5.85	1,800 AGL	73.7 Variable	300	0.0	0	25
e	3.91	1,800 AGL	73.7 Variable	250	0.0	0	8
f	3.42	1,800 AGL	92 Approach	200	0.0	0	11
g	2.93	1,800 AGL	92 Approach	120	-7.3	-1500	58
h	0.99	300 AGL	92 Approach	120	-2.4	-500	29
i	0.00	50 AGL	100 Approach	126			

Flight Profile ADLA01
ADAIR Cat B Low
Flight Track: 05OHA1

0 10,000 20,000 30,000 40,000 50,000

Scale in Feet 1:167,000 (1 inch = 13,900 feet)

Point	Distance NM	Height ft	Power % RPM	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	32.92	15,000 AGL	89.3 Cruise	300	-4.8	-1900	329
b	12.34	4,500 AGL	89.3 Cruise	150	-2.4	-600	186
c	4.61	2,500 AGL	95 Approach	150	-5.7	-1300	98
d	1.00	300 AGL	95 Approach	115	-2.4	-500	31
e	0.00	50 AGL	95 Approach	115			



Flight Profile ADLA02
ADAIR Cat B Low
Flight Track: 05A01

0 4,000 8,000 12,000 16,000 20,000 24,000 28,000

Scale in Feet 1:84,100 (1 inch = 7,000 feet)

N

Point	Distance NM	Height ft	Power % RPM	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec	Notes
a	0.00	50 AGL	87.5 Approach	115	-5.7	-1200	2	
b	0.08	0 AGL	100 Takeoff	126	1.8	400	44	
c	1.65	300 AGL	100 Takeoff	130	4.6	1100	97	
d	5.14	2,000 AGL	85.5 Variable	130	-1.3	-300	42	
e	6.64	1,800 AGL	90 Approach	130	0.0	0	44	
f	8.14	1,800 AGL	87.5 Approach	115	-4.5	-900	98	
g	11.28	300 AGL	87.5 Approach	115	-2.4	-500	31	
h	12.28	50 AGL	87.5 Approach	115				Threshold crossing

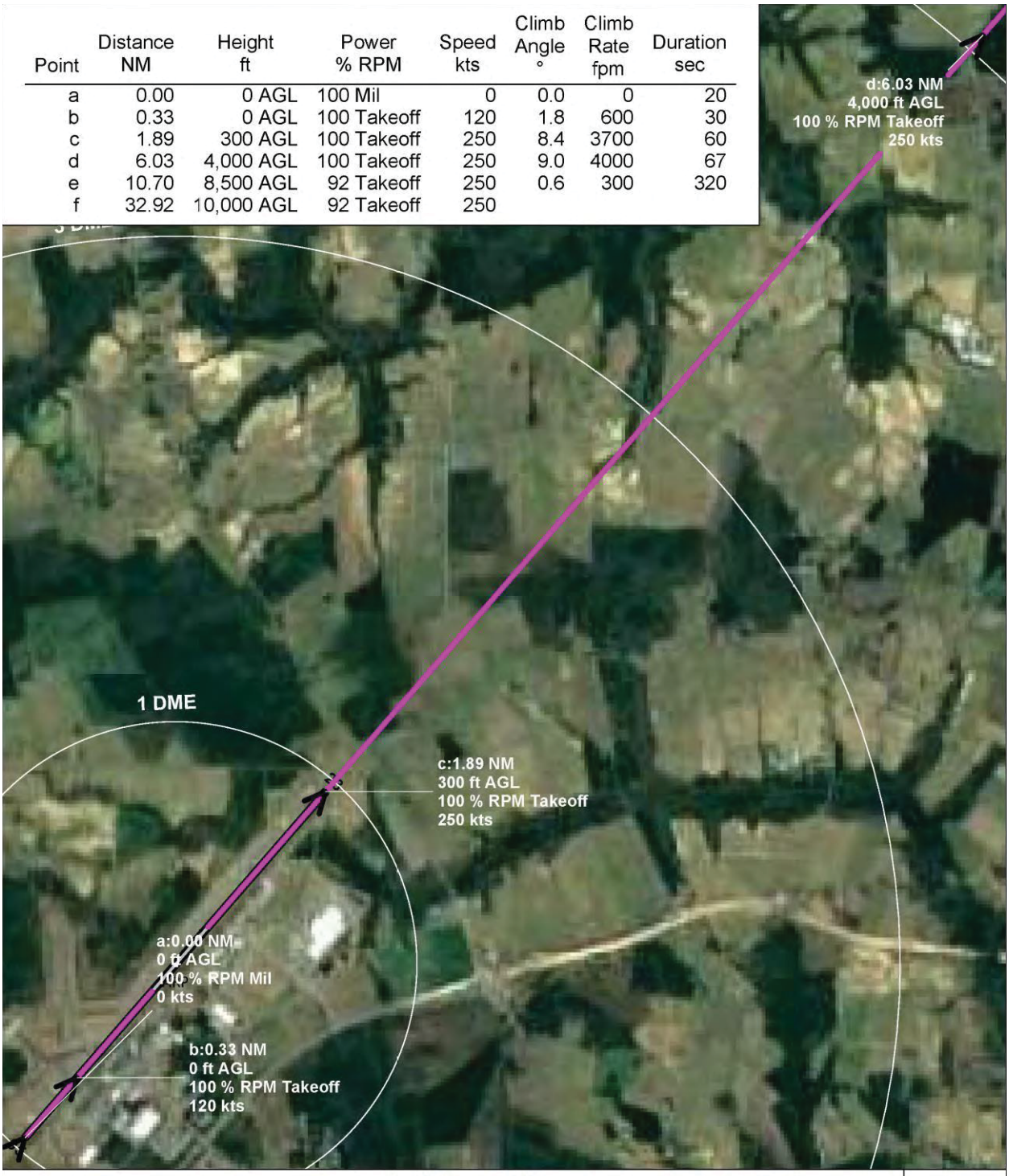


Flight Profile ADLC01
ADAIR Cat B Low
Flight Track: 05CP01

0 2,000 4,000 6,000 8,000 10,000

Scale in Feet 1:35,700 (1 inch = 2,970 feet)

Point	Distance NM	Height ft	Power % RPM	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	0.00	0 AGL	100 Mil	0	0.0	0	20
b	0.33	0 AGL	100 Takeoff	120	1.8	600	30
c	1.89	300 AGL	100 Takeoff	250	8.4	3700	60
d	6.03	4,000 AGL	100 Takeoff	250	9.0	4000	67
e	10.70	8,500 AGL	92 Takeoff	250	0.6	300	320
f	32.92	10,000 AGL	92 Takeoff	250			



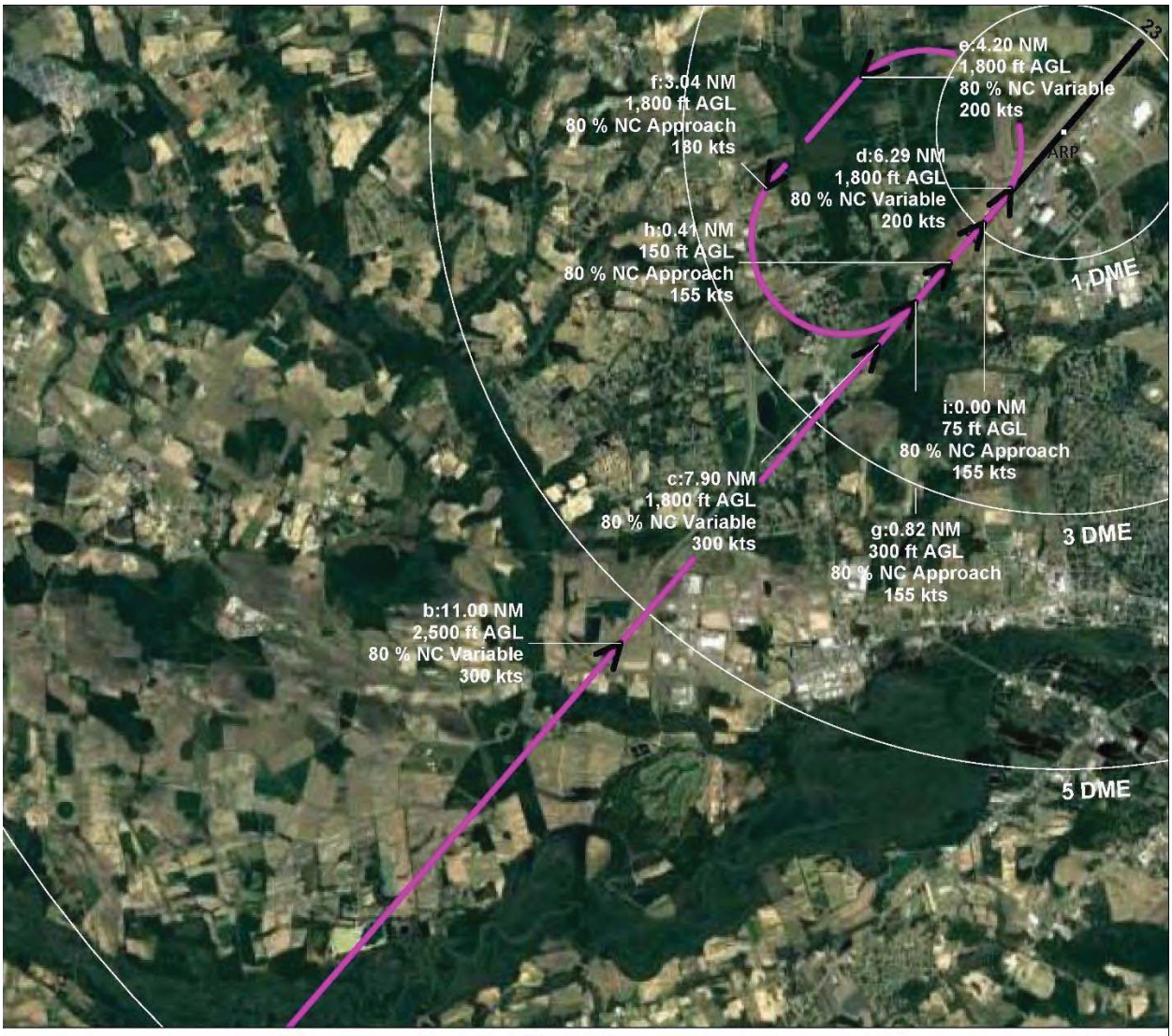
Flight Profile ADLD01
ADAIR Cat B Low
Flight Track: 05D01

0 2,000 4,000 6,000 8,000 10,000

Scale in Feet 1:35,600 (1 inch = 2,970 feet)

B.2.3.2 Seymour Johnson Air Force Base Aircraft Representative Flight Profiles

F-15E



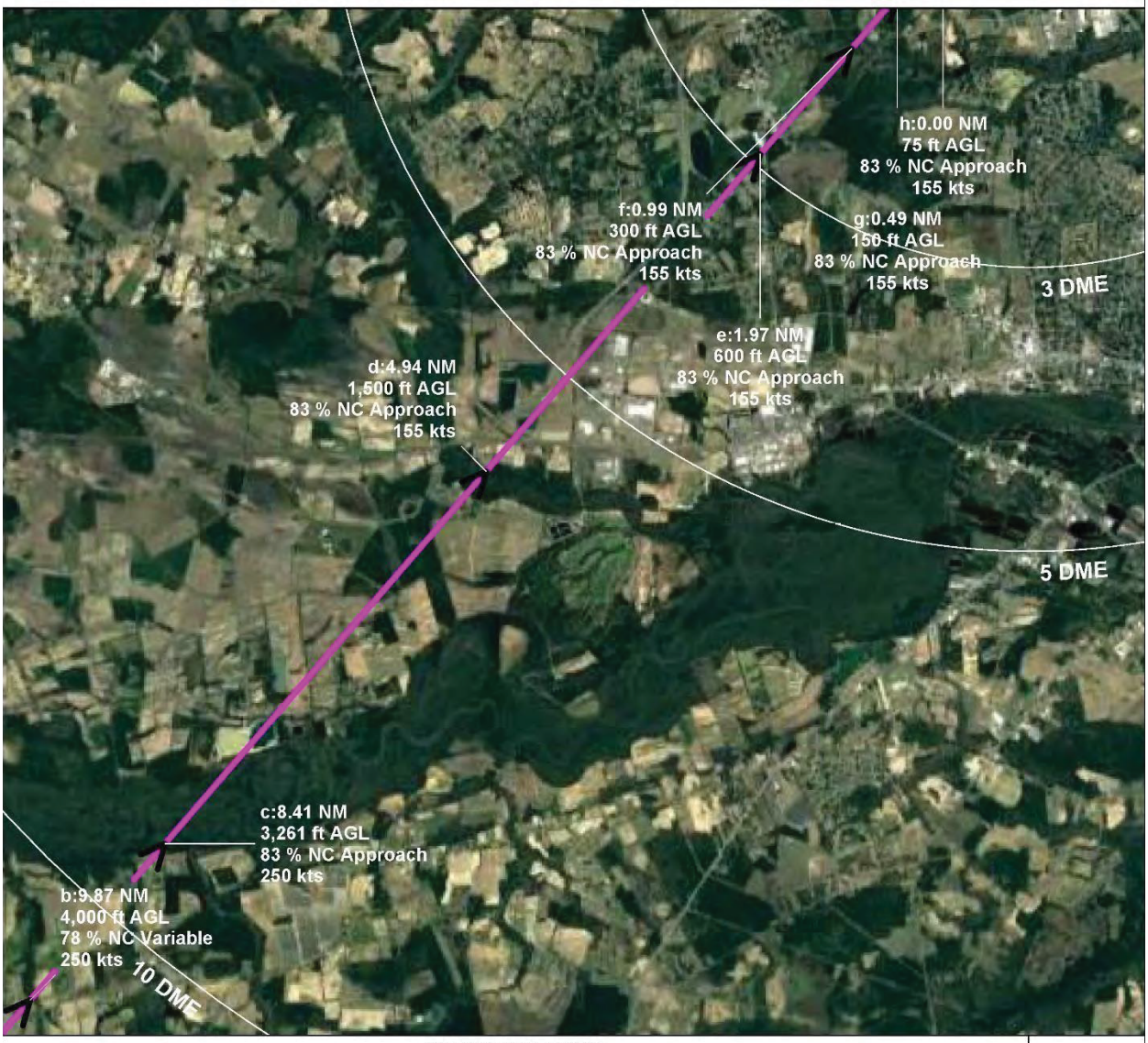
Point	Distance NM	Height ft	Power % NC	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec	Notes
a	18.10	4,000 AGL	80 Variable	300	-2.0	-1100	85	-2.9 deg, -1520 fpm, 59 sec
b	11.00	2,500 AGL	80 Variable	300	-2.1	-1100	37	-1.3 deg, -660 fpm, 63 sec
c	7.90	1,800 AGL	80 Variable	300	0.0	0	23	0.0 deg, 0 fpm, 23 sec
d	6.29	1,800 AGL	80 Variable	200	0.0	0	38	0.0 deg, 0 fpm, 38 sec
e	4.20	1,800 AGL	80 Variable	200	0.0	0	22	0.0 deg, 0 fpm, 22 sec
f	3.04	1,800 AGL	80 Approach	180	-6.3	-1900	48	-6.3 deg, -1870 fpm, 48 sec
g	0.82	300 AGL	80 Approach	155	-3.4	-900	10	-3.4 deg, -940 fpm, 10 sec
h	0.41	150 AGL	80 Approach	155	-1.7	-500	10	-1.7 deg, -470 fpm, 10 sec
i	0.00	75 AGL	80 Approach	155				

Flight Profile F15A1
Based F-15E
Flight Track: 05OHA2

0 4,000 8,000 12,000 16,000 20,000 24,000

Scale in Feet 1:78,900 (1 inch = 6,580 feet)

Point	Distance NM	Height ft	Power % NC	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec	Notes
a	19.75	9,000 AGL	78 Variable	350	-4.8	-2500	118	-4.8 deg, -2520 fpm, 118 sec
b	9.87	4,000 AGL	78 Variable	250	-4.8	-2100	21	-4.8 deg, -2100 fpm, 21 sec
c	8.41	3,261 AGL	83 Approach	250	-4.8	-1700	62	-4.8 deg, -1700 fpm, 62 sec
d	4.94	1,500 AGL	83 Approach	155	-2.9	-800	69	-2.9 deg, -780 fpm, 69 sec
e	1.97	600 AGL	83 Approach	155	-2.9	-800	23	-2.9 deg, -780 fpm, 23 sec
f	0.99	300 AGL	83 Approach	155	-2.9	-800	11	-2.9 deg, -780 fpm, 11 sec
g	0.49	150 AGL	83 Approach	155	-1.4	-400	11	-1.4 deg, -390 fpm, 11 sec
h	0.00	75 AGL	83 Approach	155				



Flight Profile F15A2
Based F-15E
Flight Track: 05A01

0 4,000 8,000 12,000 16,000 20,000

Scale in Feet 1:69,500 (1 inch = 5,790 feet)

N



Point	Distance NM	Height ft	Power % NC	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec	Notes
a	0.00	75 AGL	78 Approach	145	-8.5	-2100	2	-8.5 deg, -2030 fpm, 2 sec
b	0.08	0 AGL	90 Takeoff	125	0.2	100	8	0.2 deg, 80 fpm, 8 sec
c	0.49	10 AGL	90 Takeoff	250	8.0	3900	15	8.0 deg, 3900 fpm, 15 sec
d	1.65	1,000 AGL	88 Variable	300	2.9	1300	36	2.9 deg, 1320 fpm, 36 sec
e	4.28	1,800 AGL	84 Variable	220	0.0	0	27	0.0 deg, 0 fpm, 27 sec
f	5.84	1,800 AGL	84 Approach	193	0.0	0	14	0.0 deg, 0 fpm, 14 sec
g	6.58	1,800 AGL	84 Approach	180	-6.9	-2000	44	-6.9 deg, -2030 fpm, 44 sec
h	8.63	300 AGL	78 Approach	155	-2.6	-700	20	-2.6 deg, -680 fpm, 20 sec
i	9.46	75 AGL	78 Approach	145				

Flight Profile F15CP1
Based F-15E
Flight Track: 05CP02

0 1,000 2,000 3,000 4,000 5,000 6,000 7,000 8,000 9,000
Scale in Feet 1:27,600 (1 inch = 2,300 feet)

Point	Distance NM	Height ft	Power % NC	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec	Notes
a	0.00	0 AGL	90 Max Zone 5 A/B	0	1.0	100	22	1.0 deg, 140 fpm, 22 s
b	0.49	50 AGL	91 Afterburner	160	1.0	300	9	1.0 deg, 350 fpm, 9 se
c	0.99	100 AGL	91 Afterburner	250	8.5	3800	9	8.5 deg, 3760 fpm, 9 s
d	1.65	700 AGL	92 Variable	250	15.4	7000	19	15.4 deg, 6710 fpm, 1
e	2.96	2,900 AGL	92 Variable	250	21.8	10100	9	21.8 deg, 9400 fpm, 9
f	3.62	4,500 AGL	92 Variable	250	8.1	3600	33	8.1 deg, 3580 fpm, 33
g	5.92	6,500 AGL	92 Variable	250	8.3	3700	57	8.3 deg, 3650 fpm, 57
h	9.87	10,000 AGL	92 Variable	250	6.7	3000	142	6.7 deg, 2930 fpm, 14
i	19.75	17,000 AGL	92 Variable	250				

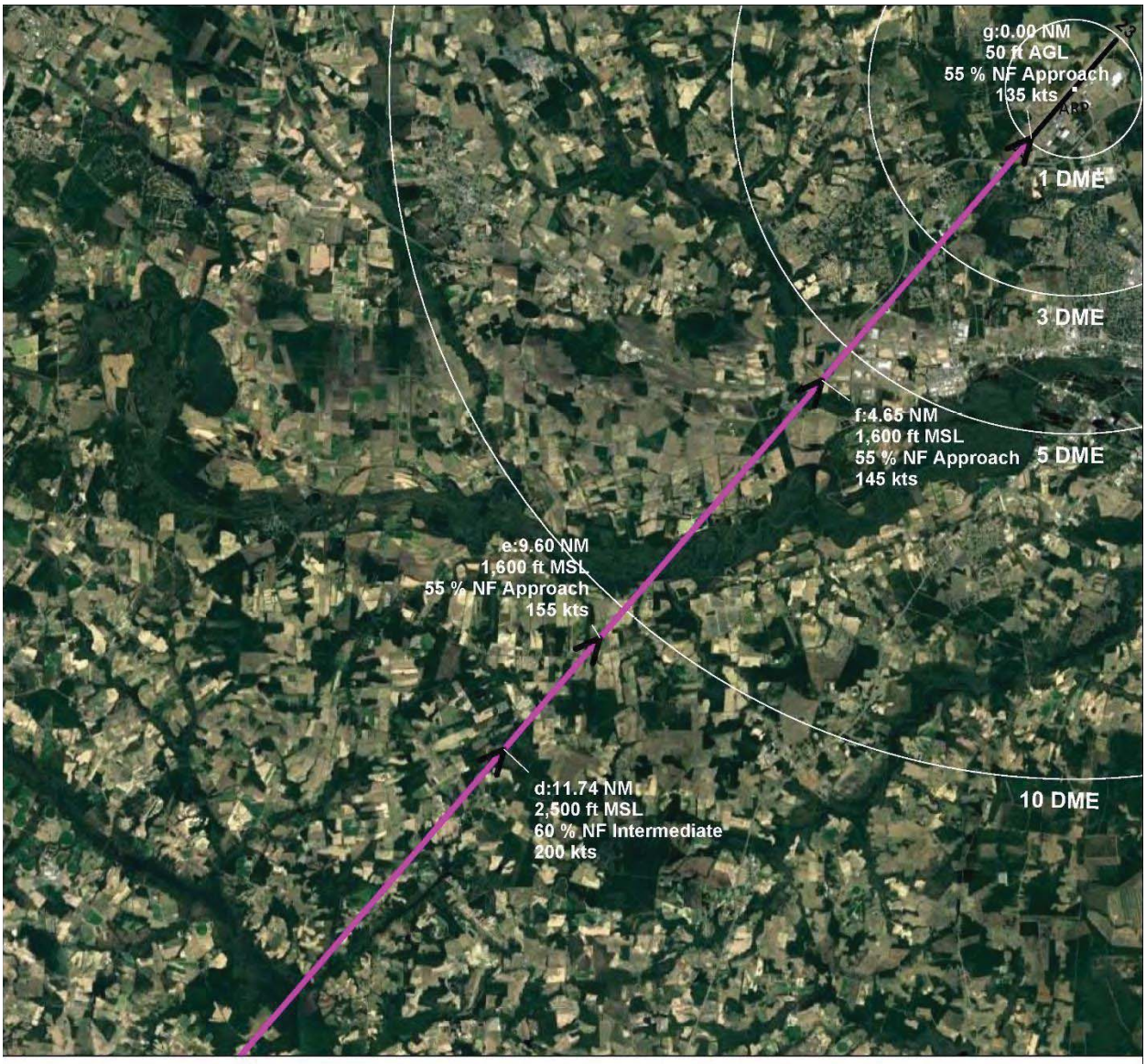


Flight Profile F15D1
Based F-15E
Flight Track: 05D01

0 1,000 2,000 3,000 4,000 5,000 6,000 7,000

Scale in Feet 1:21,400 (1 inch = 1,780 feet)

KC-135

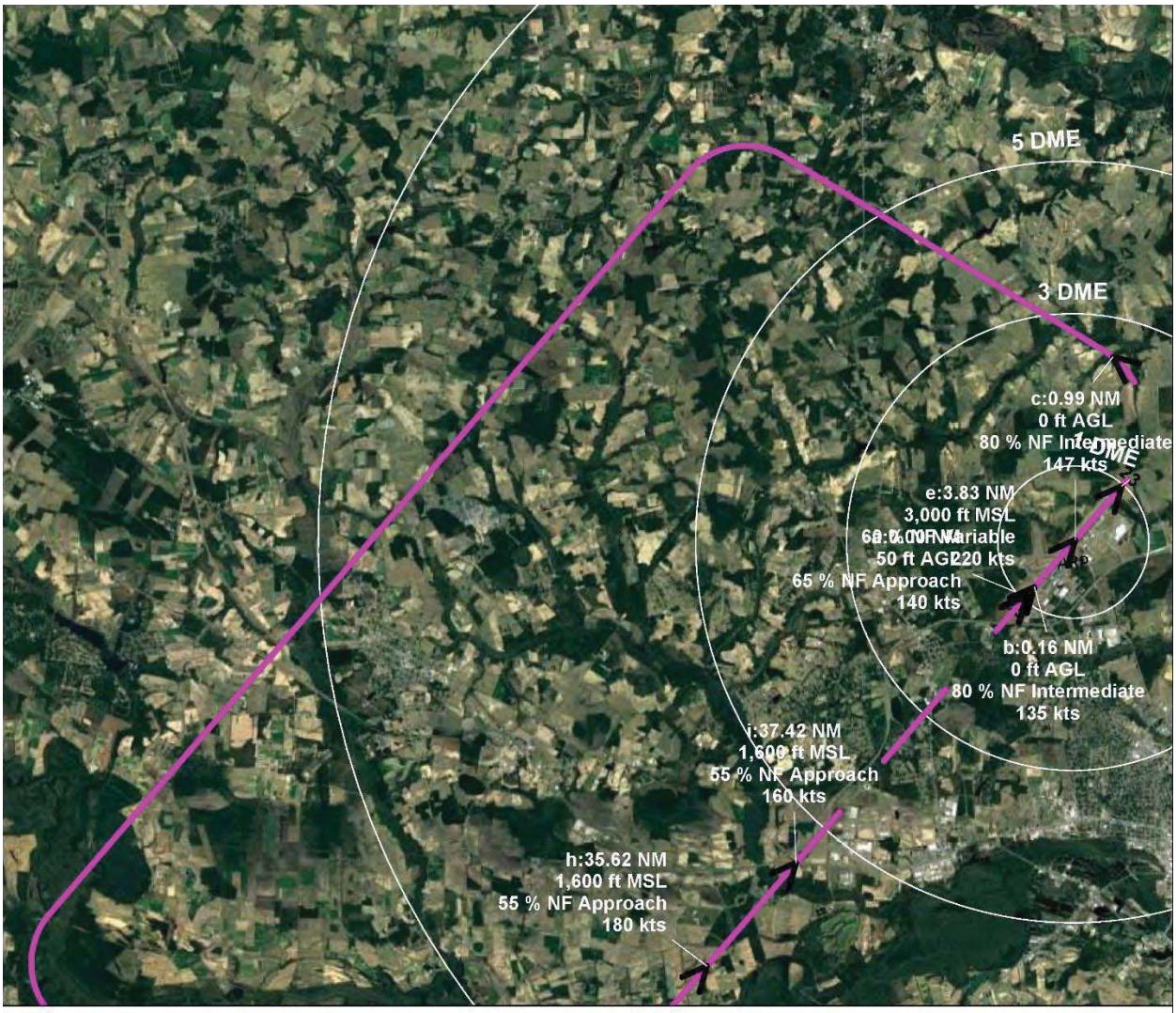


Point	Distance NM	Height ft	Power % NF	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec	Notes
a	41.14	7,000 MSL	60 Intermediate	230	-2.0	-800	78	
b	36.50	6,000 MSL	60 Intermediate	200	-1.3	-500	256	
c	22.28	4,000 MSL	60 Intermediate	200	-1.3	-500	190	
d	11.74	2,500 MSL	60 Intermediate	200	-4.0	-1200	43	
e	9.60	1,600 MSL	55 Approach	155	0.0	0	119	Gear Down, Level Off 2NM
f	4.65	1,600 MSL	55 Approach	145	-2.9	-700	120	FAF
g	0.00	50 AGL	55 Approach	135				At the Threshold

Flight Profile KC135RA01
Based KC-135R
Flight Track: 05A01

0 4,000 8,000 12,000 16,000 20,000 24,000 28,000 32,000 36,000 40,000 44,000 48,000

Scale in Feet 1:143,000 (1 inch = 11,900 feet)



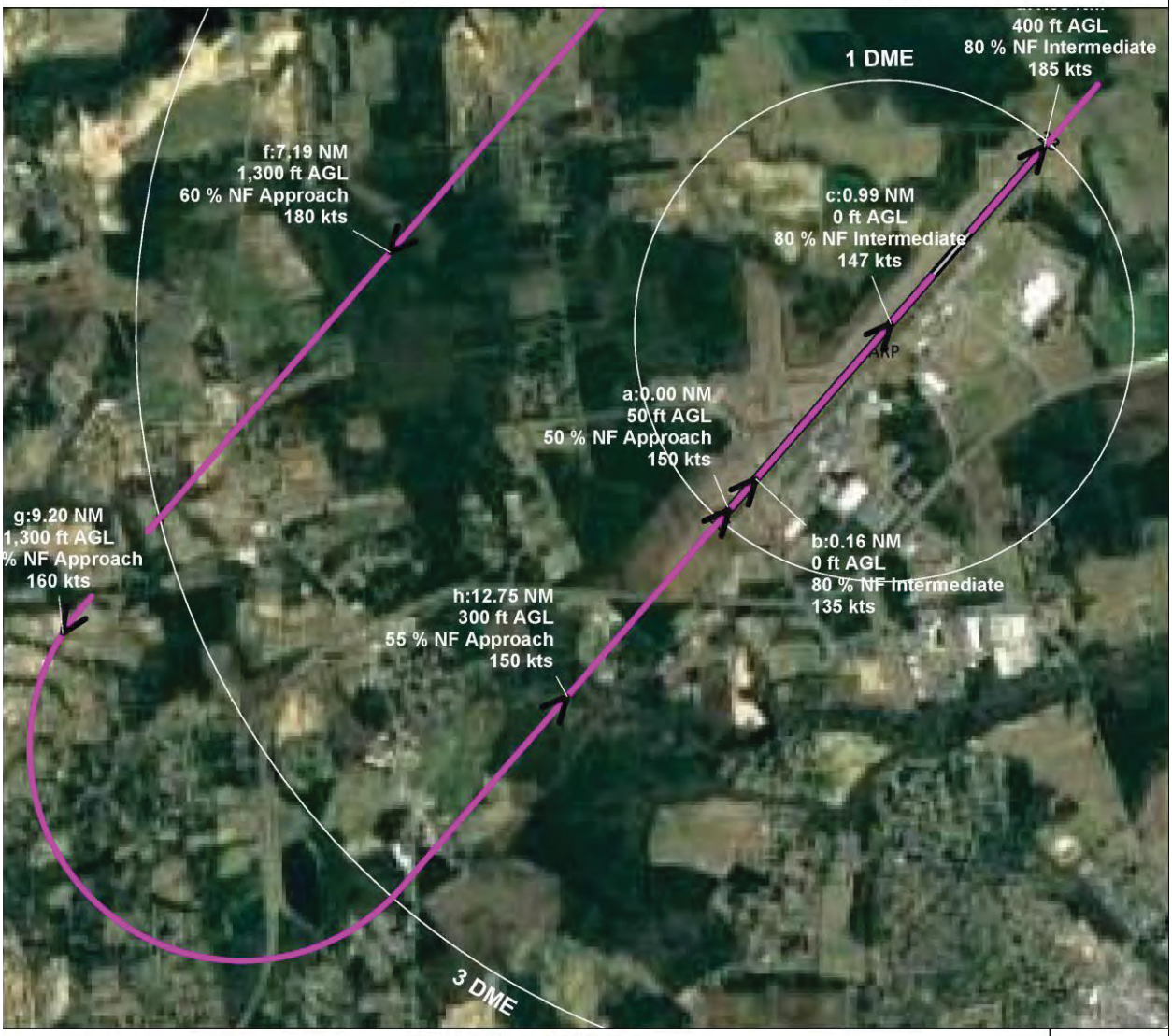
Point	Distance NM	Height ft	Power % NF	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec	Notes
a	0.00	50 AGL	65 Approach	140	-2.9	-700	4	At the Threshold
b	0.16	0 AGL	80 Intermediate	135	0.0	0	21	1000 FT TOUCHDOWN
c	0.99	0 AGL	80 Intermediate	147	4.0	1200	20	6000 FT LIFTOFF
d	1.93	400 AGL	80 Intermediate	185	12.2	4400	34	
e	3.83	3,000 MSL	60 Variable	220	0.0	0	382	
f	27.20	3,000 MSL	60 Variable	220	-1.5	-600	53	
g	30.27	2,500 MSL	65 Variable	200	-1.6	-500	101	
h	35.62	1,600 MSL	55 Approach	180	0.0	0	38	drop gear & flaps
i	37.42	1,600 MSL	55 Approach	160	-2.9	-800	112	
j	42.09	50 AGL	55 Approach	140				

Flight Profile KC135RC01
Based KC-135R
Flight Track: 05CP03 - RADAR PATTERN RWY HDG TURN TO 180

0 4,000 8,000 12,000 16,000 20,000 24,000 28,000 32,000 36,000 40,000 44,000

Scale in Feet 1:133,000 (1 inch = 11,100 feet)

Point	Distance NM	Height ft	Power % NF	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec	Notes
a	0.00	50 AGL	50 Approach	150	-2.9	-700	4	At the Threshold upated
b	0.16	0 AGL	80 Intermediate	135	0.0	0	21	1000 FT TOUCHDOWN
c	0.99	0 AGL	80 Intermediate	147	4.0	1200	20	6000 FT LIFTOFF
d	1.93	400 AGL	80 Intermediate	185	2.8	900	60	
e	4.95	1,300 AGL	55 Variable	180	0.0	0	45	updated power 2 Dec 15
f	7.19	1,300 AGL	60 Approach	180	0.0	0	43	GEAR DOWN, updated pov
g	9.20	1,300 AGL	55 Approach	160	-2.6	-700	83	updated power 2 Dec 15
h	12.75	300 AGL	55 Approach	150	-2.4	-600	24	1 NM, updated as updated
i	13.74	50 AGL	50 Approach	150				updated as updated power



Flight Profile KC135RC05
Based KC-135R
Flight Track: 05CP04 - KC-135R VFR PATTERN

0 2,000 4,000 6,000 8,000 10,000 12,000

Scale in Feet 1:40,100 (1 inch = 3,340 feet)

Point	Distance NM	Height ft	Power % NF	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec	Note
a	0.00	0 AGL	60 60% RPM Eng Runup	0	0.0	0	47	
b	0.99	0 AGL	92 Max Rated Thrust	150	2.2	600	19	TRT 6000 FT LI
c	1.86	200 AGL	92 Max Rated Thrust	185	12.7	5000	33	Clean, Accelerat
d	3.83	3,000 MSL	92 Max Rated Thrust	250	3.6	1600	150	
e	14.27	7,000 MSL	85 Intermediate	250	3.3	1400	125	
f	22.94	10,000 MSL	85 Intermediate	250	9.4	4500	134	
g	32.92	20,000 MSL	85 Intermediate	285				



Flight Profile KC135RD05
Based KC-135R
Flight Track: 05D01

0 1,000 2,000 3,000 4,000 5,000 6,000 7,000

Scale in Feet 1:22,600 (1 inch = 1,890 feet)

KC-46



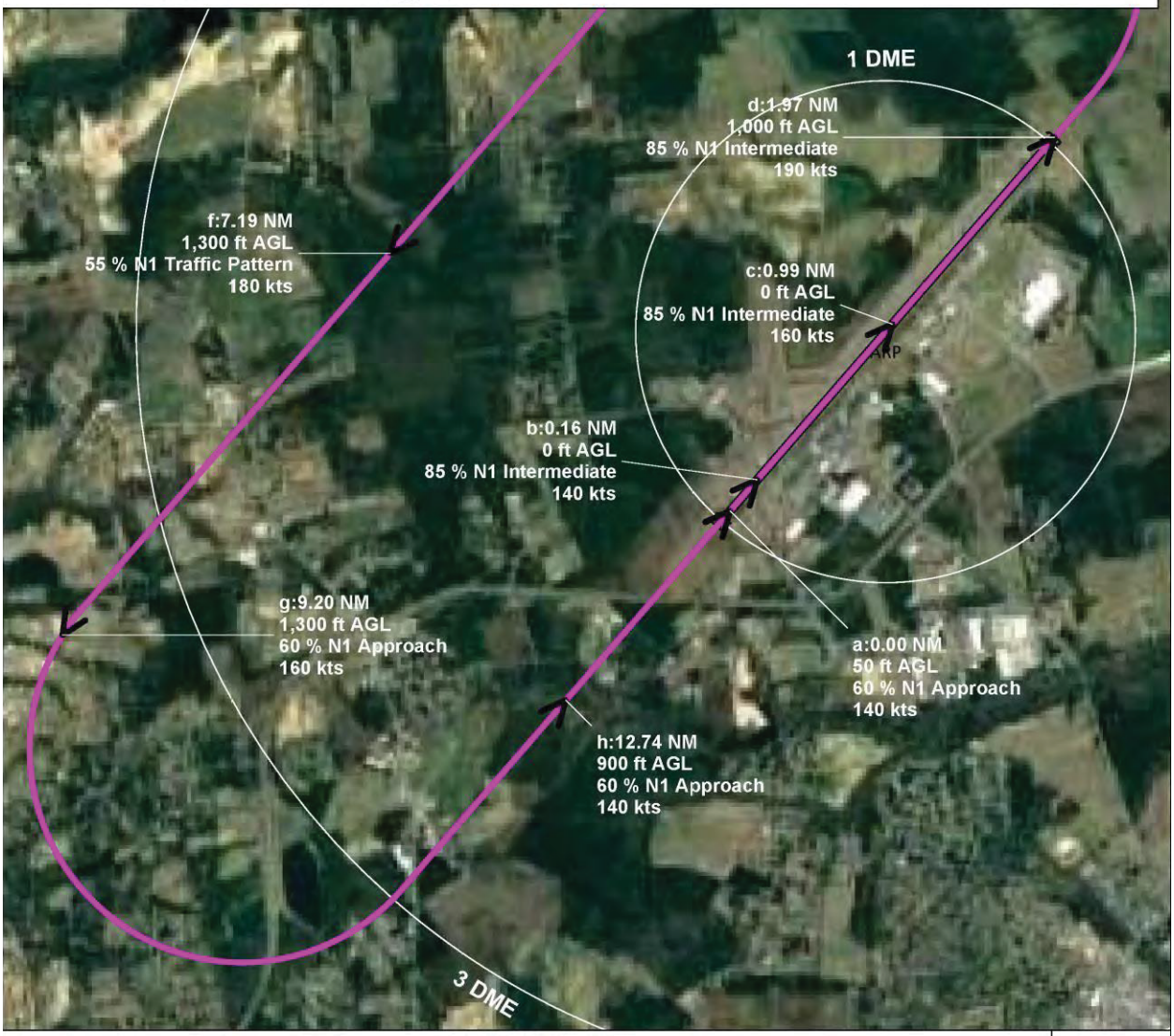
Point	Distance NM	Height ft	Power % N1	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec	Notes
a	55.00	8,000 MSL	55 Variable	250	-0.9	-400	306	
b	35.00	6,000 MSL	55 Variable	220	-1.9	-700	171	
c	25.00	4,000 MSL	55 Variable	200	-1.1	-400	246	
d	12.00	2,500 MSL	60 Approach	180	0.0	0	120	Begin Configuring
e	6.00	2,500 MSL	60 Approach	180	-5.2	-1600	64	Approach Configuration
f	3.00	750 AGL	60 Approach	160	-2.2	-600	70	FAF
g	0.00	50 AGL	60 Approach	150				

Flight Profile K46A1
Based KC-46X
Flight Track: 05A01

0 10,000 20,000 30,000 40,000 50,000

Scale in Feet 1:159,000 (1 inch = 13,200 feet)

Point	Distance NM	Height ft	Power % N1	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec	Notes
a	0.00	50 AGL	60 Approach	140	-2.9	-700	4	
b	0.16	0 AGL	85 Intermediate	140	0.0	0	20	1000 FT Touchdown
c	0.99	0 AGL	85 Intermediate	160	9.5	3000	20	6000 Liftoff
d	1.97	1,000 AGL	85 Intermediate	190	1.0	300	58	
e	4.95	1,300 AGL	55 Traffic Pattern	180	0.0	0	45	Pattern Altitude
f	7.19	1,300 AGL	55 Traffic Pattern	180	0.0	0	43	Gear Down
g	9.20	1,300 AGL	60 Approach	160	-1.1	-300	85	
h	12.74	900 AGL	60 Approach	140	-8.0	-2000	26	3 NM Final
i	13.74	50 AGL	60 Approach	140				

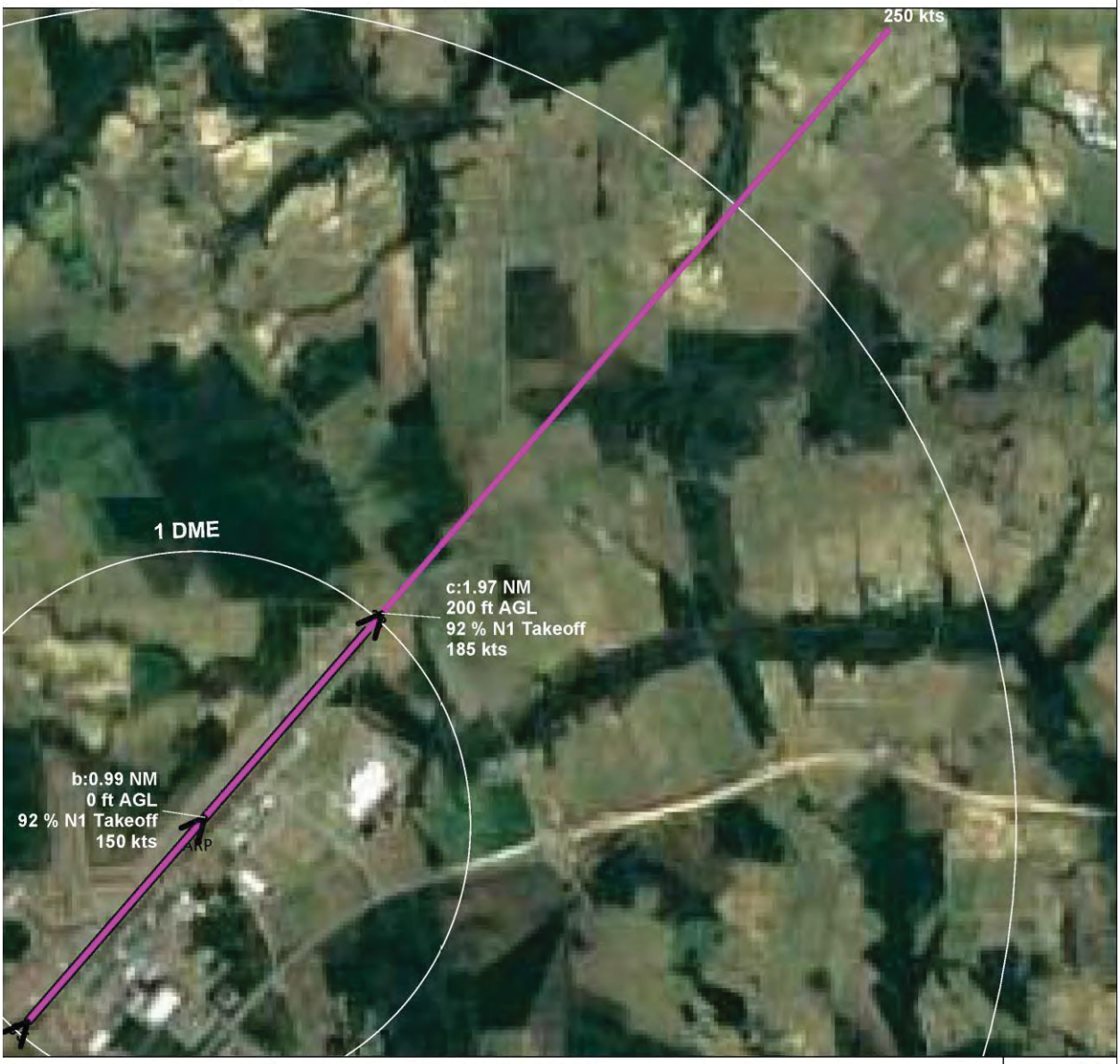


Flight Profile K46C02
Based KC-46X
Flight Track: 05CP04

0 2,000 4,000 6,000 8,000 10,000 12,000

Scale in Feet 1:40,100 (1 inch = 3,340 feet)

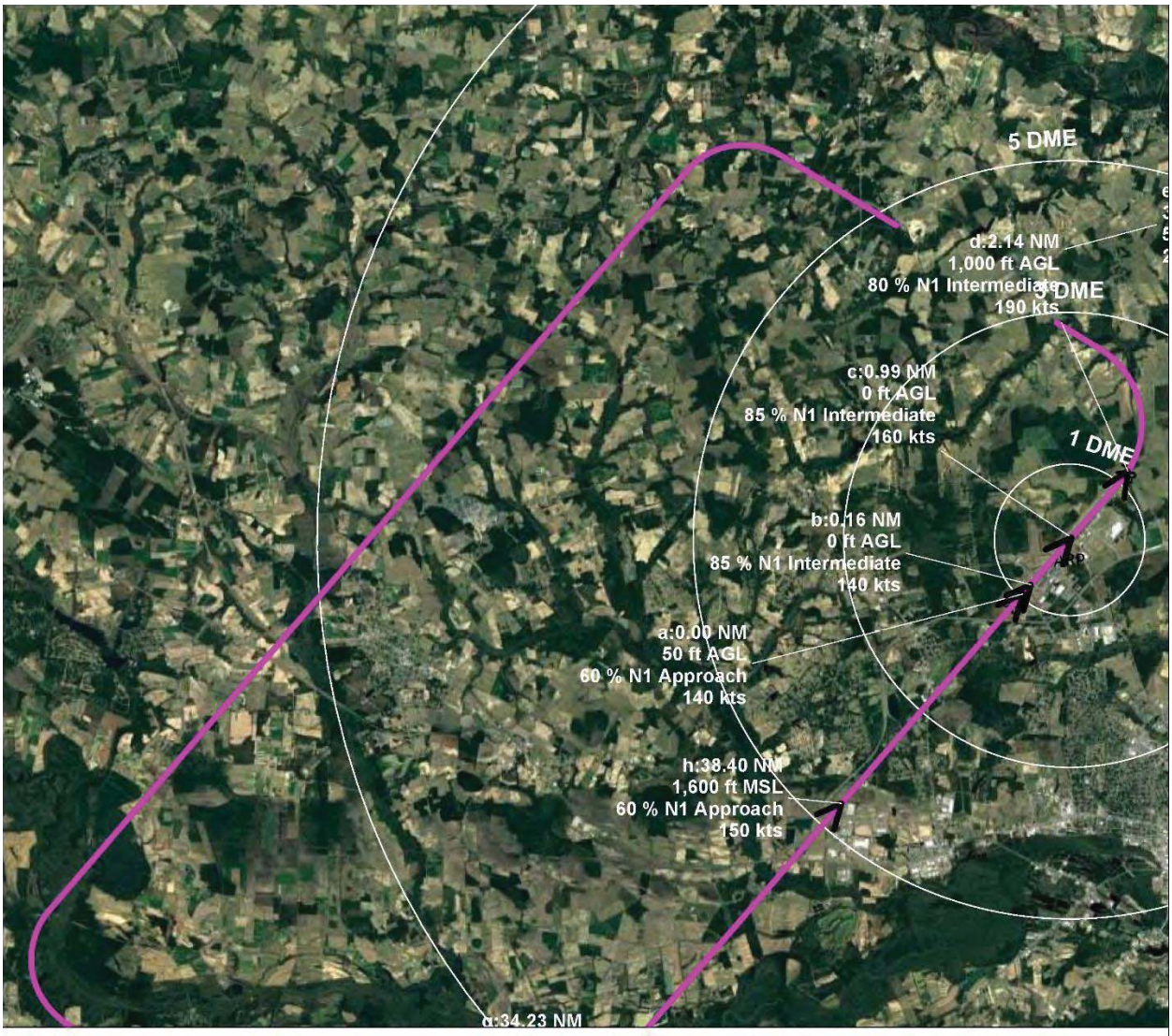
Point	Distance NM	Height ft	Power % N1	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec	Notes
a	0.00	0 AGL	92 Takeoff	0	0.0	0	47	
b	0.99	0 AGL	92 Takeoff	150	1.9	600	21	6000 ft Liftoff
c	1.97	200 AGL	92 Takeoff	185	6.7	2600	65	Clean Acelerating to 250 k
d	5.92	3,000 AGL	88 Intermediate	250	7.3	3200	128	
e	14.81	10,000 MSL	88 Intermediate	250	5.5	2600	231	
f	32.00	20,000 MSL	60 Intermediate	285				



Flight Profile K46D1
Based KC-46X
Flight Track: 05D01

0 2,000 4,000 6,000 8,000 10,000

Scale in Feet 1:35,000 (1 inch = 2,920 feet)



Point	Distance NM	Height ft	Power % N1	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec	Notes
a	0.00	50 AGL	60 Approach	140	-2.9	-700	4	
b	0.16	0 AGL	85 Intermediate	140	0.0	0	20	1000 FT Touchdown
c	0.99	0 AGL	85 Intermediate	160	8.1	2500	24	6000 FT Liftoff
d	2.14	1,000 AGL	80 Intermediate	190	4.7	1600	70	
e	5.92	3,000 MSL	55 Traffic Pattern	200	0.0	0	392	Pattern Altitude
f	27.73	3,000 MSL	55 Traffic Pattern	200	-0.7	-200	123	
g	34.23	2,500 MSL	60 Approach	180	-2.0	-600	91	Approach Configuration
h	38.40	1,600 MSL	60 Approach	150	-3.0	-800	115	FAF
i	43.03	50 AGL	60 Approach	140				

Flight Profile KC46C01
Based KC-46X
Flight Track: 05CP03

0 4,000 8,000 12,000 16,000 20,000 24,000 28,000 32,000 36,000 40,000 44,000

Scale in Feet 1:133,000 (1 inch = 11,100 feet)

B.2.4 Ground/Maintenance Run-ups

This section details the number, type, and duration of the ground and maintenance engine run-up operations at ISO. COCO ADAIR aircraft maintenance would include routine inspections and minor unscheduled repairs on the flightline. There would be approximately 14 COCO aircraft associated with this contracting action. Maintenance operations were modeled according to Air Conformity Applicability Model (ACAM) defaults. Major scheduled and unscheduled aircraft maintenance may be performed at the airport or at the contractor's main operating location. **Table B-9** details the number, type, and duration of the on-field maintenance operations.

Table B-9
Location, Type, and Duration of Ground/Maintenance Run-Up Operations at Kinston Regional Jetport

Aircraft Type	Engine Type	Run-up Type	Annual Events	Percent Day (7 am – 10 pm)	Percent Night (7 am – 10 pm)	Run-up Pad ID	Percent Pad used	Magnetic Heading (degrees)	Engine Power Setting	Duration Per Event (Minutes)	# of Engines Running Per Event
ADAIR Category B*		Pre-/Postflight Engine Run	1/sortie	100%	0%	ADAIR Parking	100%	216	Idle	600	All
		Trim	336	100%	0%	Hanger Apron	100%	216	Idle	12	1-2
									Approach	27	
									Intermediate	9	
									Military	9	
									Afterburner	3	

Note:
* Air Conformity Applicability Model defaults assumed for ADAIR aircraft. Based on 24 test/year/aircraft expecting 14 ADAIR aircraft.

This page intentionally left blank

APPENDIX C

AIR QUALITY

This page intentionally left blank

Appendix C-1

Air Conformity Applicability Analysis

This page intentionally left blank

C.1 AIR QUALITY

This appendix presents an overview of the Clean Air Act (CAA) and the relevant North Carolina air quality regulations/standards. It also presents calculations, including the assumptions used for the air quality analyses presented in the Air Quality sections of this Environmental Assessment.

C.1.1 Air Quality Program Overview

To protect public health and welfare, the United States Environmental Protection Agency (USEPA) has developed numerical concentration-based standards, or National Ambient Air Quality Standards (NAAQS), for six "criteria" pollutants (based on health-related criteria) under the provisions of the CAA Amendments of 1970. There are two kinds of NAAQS: Primary and Secondary standards. Primary standards prescribe the maximum permissible concentration in the ambient air to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards prescribe the maximum concentration or level of air quality required to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings (40 Code of Federal Regulations [CFR] Part 50).

The CAA gives states the authority to establish air quality rules and regulations. These rules and regulations must be equivalent to, or more stringent than, the federal program. In North Carolina Department of Environmental Quality Air Quality Division is the lead agency responsible enforcing state and federal air pollution regulations. North Carolina has also adopted the federal NAAQS standards (15A North Carolina Administrative Code 2D). The standards are shown in **Table C-1**.

Based on measured ambient air pollutant concentrations, the USEPA designates areas of the United States as having air quality better than (attainment) the NAAQS, worse than (nonattainment) the NAAQS, and unclassifiable. The areas that cannot be classified (on the basis of available information) as meeting or not meeting the NAAQS for a particular pollutant are "unclassifiable" and are treated as attainment until proven otherwise. Attainment areas can be further classified as "maintenance" areas, which are areas previously classified as nonattainment but where air pollutant concentrations have been successfully reduced to below the standard. Maintenance areas are under special maintenance plans and must operate under some of the nonattainment area plans to ensure compliance with the NAAQS.

Section 176(c) (1) of the CAA contains legislation that ensures federal activities conform to relevant State Implementation Plans (SIPs) and thus do not hamper local efforts to control air pollution. Conformity to a SIP is defined as conformity to a SIP's purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of such standards. As such, a general conformity analysis is required for areas of nonattainment or maintenance where a federal action is proposed.

The action can be shown to conform by demonstrating that the total direct and indirect emissions are below the *de minimis* levels (**Table C-2**), and/or showing that the Proposed Action emissions are within the State- or Tribe-approved budget of the facility as part of the SIP or Tribal Implementation Plan (USEPA, 2010). A conformity determination is required for each criteria pollutant or precursor where the total of direct and indirect emissions of that pollutant equal or exceed its *de minimis* rates (40 CFR § 93.153).

Direct emissions are those that occur as a direct result of the action. For example, emissions from new equipment that are a permanent component of the completed action (e.g., boilers, heaters, generators, paint booths) are considered direct emissions. Indirect emissions are those that occur at a later time or at a distance from the Proposed Action. For example, increased vehicular/commuter traffic because of the action is considered an indirect emission. Construction emissions must also be considered. For example, the emissions from vehicles and equipment used to clear and grade building sites, build new buildings, and construct new roads must be evaluated. These types of emissions are considered direct.

Table C-1
National Ambient Air Quality Standards

Pollutant	Standard Value[7]		Standard Type
Carbon Monoxide (CO)			
8-hour average	9 ppm	(10 mg/m^3)	Primary
1-hour average	35 ppm	(40 mg/m^3)	Primary
Nitrogen Dioxide (NO_2)			
Annual arithmetic mean	0.053 ppm	(100 µg/m^3)	Primary and Secondary
1-hour average[1]	0.100 ppm	(188 µg/m^3)	Primary
2015 Ozone (O_3)			
8-hour average[2,3]	0.070 ppm	(137 µg/m^3)	Primary and Secondary
2008 Ozone (O_3)			
8-hour average	0.075 ppm	-	Primary and Secondary
1997 Ozone (O_3)			
8-hour average	0.08 ppm	-	Primary and Secondary
Lead (Pb)			
3-month average[4]		0.15 µg/m^3	Primary and Secondary
Particulate ≤10 Micrometers (PM_{10})			
24-hour average[5]		150 µg/m^3	Primary and Secondary
Particulate ≤2.5 Micrometers ($PM_{2.5}$)			
Annual arithmetic mean[5]		12 µg/m^3	Primary
Annual arithmetic mean[5]		15 µg/m^3	Secondary
24-hour average[5]		35 µg/m^3	Primary and Secondary
Sulfur Dioxide (SO_2)			
1-hour average[6]	0.075 ppm	(196 µg/m^3)	Primary
3-hour average[6]	0.5 ppm	(1,300 µg/m^3)	Secondary

Source: USEPA, 2016, 2018

Notes:
1 In February 2010, the USEPA established a new 1-hour standard for NO_2 at a level of 0.100 ppm, based on the 3-year average of the 98th percentile of the yearly distribution concentration, to supplement the then-existing annual standard.
2 In October 2015, the USEPA revised the level of the 8-hour standard to 0.070 ppm, based on the annual 4th highest daily maximum concentration, averaged over 3 years; the regulation became effective on 28 December 2015. The previous (2008) standard of 0.075 ppm remains in effect for some areas. A 1-hour standard no longer exists.
3 Annual fourth-highest daily maximum 8-hour average concentration, averaged over 3 years.4. In November 2008, USEPA revised the primary lead standard to 0.15 µg/m^3. USEPA revised the averaging time to a rolling 3-month average.
5 In October 2006, USEPA revised the level of the 24-hour $PM_{2.5}$ standard to 35 µg/m^3 and retained the level of the annual $PM_{2.5}$ standard at 15 µg/m^3. In 2012, USEPA split standards for primary and secondary annual $PM_{2.5}$. All are averaged over 3 years, with the 24-hour average determined at the 98th percentile for the 24-hour standard. USEPA retained the 24-hour primary standard and revoked the annual primary standard for PM_{10}.
6 In 2012, the USEPA retained a secondary 3-hour standard, which is not to be exceeded more than once per year. In June 2010, USEPA established a new 1-hour SO_2 standard at a level of 75 ppb, based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations.
7 Parenthetical value is an approximately equivalent concentration for NO_2, O_3, and SO_2.

µg/m^3 = microgram(s) per cubic meter; mg/m^3 = milligram(s) per cubic meter; ppb = part(s) per billion; ppm = part(s) per million; USEPA = United States Environmental Protection Agency

Table C-2
General Conformity Rule *De minimis* Emission Thresholds

Pollutant	Attainment Classification	Tons per year
Ozone (VOC and NO_x)	Serious nonattainment	50
	Severe nonattainment	25
	Extreme nonattainment	10
	Other areas outside an ozone transport region (applicable to all three airport alternatives)	100
Ozone (NO_x)	Marginal and moderate nonattainment inside an ozone transport region	100
	Maintenance	100
Ozone (VOC)	Marginal and moderate nonattainment inside an ozone transport region	50
	Maintenance within an ozone transport region	50
	Maintenance outside an ozone transport region	100
Carbon Monoxide, SO_2 and NO_2	All nonattainment and maintenance	100
PM_{10}	Serious nonattainment	70
	Moderate nonattainment and maintenance	100
$PM_{2.5}$ Direct emissions, SO_2, NO_x , VOC, and ammonia	All nonattainment and maintenance	100
Lead	All nonattainment and maintenance	25

Source: USEPA, 2017

NO_2 = nitrogen dioxide; NO_x = nitrogen oxides; $PM_{2.5}$ = particulates equal to or less than 2.5 microns in diameter; PM_{10} = particulates equal to or less than 10 microns in diameter; SO_2 = sulfur dioxide; VOC = volatile organic compound

North Carolina is required to develop a SIP that sets forth how CAA provisions will be imposed within the state. The SIP is the primary means for the implementation, maintenance, and enforcement of the measures needed to attain and maintain the NAAQS within each state and includes control measures, emissions limitations, and other provisions required to attain and maintain the ambient air quality standards. The purpose of the SIP is twofold. First, it must provide a control strategy that will result in the attainment and maintenance of the NAAQS. Second, it must demonstrate that progress is being made in attaining the standards in each nonattainment area.

The North Carolina Department of Environmental Quality operates and maintains an ambient air monitoring network that uses the methods and procedures approved by the USEPA. The purpose is to monitor, assess, and provide information on statewide ambient air quality conditions and trends as specified by the state and federal CAA. The Air Quality Monitoring Program works in conjunction with local air pollution agencies and some industries, measuring air quality throughout the state.

The air quality monitoring network is used to identify areas where the ambient air quality standards are being violated and plans are needed to reduce pollutant concentration levels to be in attainment with the standards. Also included are areas where the ambient standards are being met, but plans are necessary to ensure maintenance of acceptable levels of air quality in the face of anticipated population or industrial growth.

The USEPA has specific requirements for a minimum number of monitoring sites, known as National Air Monitoring Sites. Locations of these monitoring sites are determined by factors such as emissions sources, population density, permitting needs, modeling results, and site accessibility. The North Carolina network consists of 75 monitors spread across the state.

The result of this attainment/maintenance analysis is the development of local and statewide strategies for controlling emissions of criteria air pollutants from stationary and mobile sources. The first step in this process is the annual compilation of the ambient air monitoring results, and the second step is the analysis of the monitoring data for general air quality, exceedances of air quality standards, and pollutant trends.

Under the CAA new stationary emissions sources are subject to New Source Review (NSR) in order to obtain a construction permit. Permits are required for new major sources or sources making major modifications. In areas that meet the National Ambient Air Quality Standards the permits are referred to as Prevention of Significant Deterioration (PSD) permits and the process to obtain permit approval is called PSD review. In nonattainment areas the permitting process is referred to as nonattainment NSR. The purpose of PSD review is to ensure that sources are constructed without causing significant adverse deterioration to clean air in the area. Nonattainment NSR purpose is to ensure new sources do not impede a region's progress to achieve compliance with NAAQS through the use of emission control technology and by offsetting the emission increases. Because the proposed action is primarily related to mobile sources, NSR is not applicable and thus it is not discussed further in this document.

C.1.2 Assumptions

The following are assumptions were used in the air quality analysis for the proposed alternative actions:

1. No outdoor construction was assumed (includes hangar/maintenance space, admin space, fuel storage tanks, hush house/test cells, defensive countermeasure storage, etc.). When contractor requirements are matched against available airport facilities, separate environmental analysis would be completed as required.
2. Additional Jet A fuel needed by contractor aircraft was calculated based on engine type, number of sorties, and engine fuel consumption rate. Volatile organic compound (VOC) emissions were based upon the additional fuel handled using the emission estimation procedures in AP-42, Section 7.1.3 that have been incorporated into ACAM. Because Jet-A has a very low volatility, the additional fueling operations would result in a minor increase in VOC emissions.
3. Routine contractor aircraft maintenance tasks would be performed at the civilian airport; however, major scheduled (i.e., depot level, phase inspections) and unscheduled (i.e., engine changes) aircraft maintenance may be performed at the airport or the aircraft may be flown back to the contractor's main operating location.
4. Contractor may bring their own parts cleaner (or share an already installed unit -- unknown at this time) -- for either case, it is assumed contractor use would be minimal (no more than 0.5 gallons/ month solvent used/lost).
5. For the purposes of modeling, adversary air (ADAIR) targeted performance was assumed to start in November 2020 with 10-year contract.
6. Contractor aircraft takeoff and landing cycles -- we initially used/assumed Air Conformity Applicability Model (ACAM) default "times in mode" to be conservative. Power mode type (climb out/intermediate) in airspace for ADAIR sorties was based on guidance from the Air Force Civil Engineer Center subject matter experts.
7. Assume the atmospheric mixing height would be at an altitude of 3,000 feet (ft) (matches USEPA and Air Force Guidance).
8. One sortie is equivalent to one (1) landing and takeoff (LTO) cycle. Total number of sorties subject to air quality analysis is 2,720. Modeling of the Proposed Action included an estimated 2,720 sorties at the airport by contractor-owned/contractor-operated ADAIR aircraft. Trips off the airport for maintenance and some pilot proficiency time are proposed for 130 of the 2,720 sorties. The balance of 2,590 sorties would occur within the special use airspace. Number of sorties would be the same for each alternative.

9. Assume once an aircraft is out of the LTO cycle, the time spent traveling to/from the special use airspace would be at an altitude above 3,000 ft.
10. Air Force training sorties at Seymour Johnson AFB would not increase or decrease as result of this action. Roles may change (i.e., the Air Force no longer needs to play the adversary but this would not change in any substantial way the number of other Air Force sorties flown); thus, the change (increase) in emissions from ADAIR operations sorties would be strictly due to the addition of the contract ADAIR aircraft at the selected airport and associated ground and maintenance activities.
11. For contractor aerospace ground equipment and auxiliary power units (until the contractor is selected), what they would bring/use in terms of equipment is unknown; thus, ACAM defaults were used based on the surrogate aircraft and engine type.
12. Assume contractor aircraft would engage in LTO cycles and touch and go or low approach activities only in the vicinity of the selected airport.
13. Assume 5 percent of on-airport daytime sorties would include multiple patterns for contractor proficiency.
14. It is unknown what contractor requirements would be for trim tests; thus, initially ACAM defaults was assumed based on surrogate aircraft and engine type.
15. Assume all new ADAIR contractor personnel (pilots and maintenance staff) would live in the nearby community and commute to the airport proposed for use 5 days per week. ACAM defaults were used for commute distances.
16. All ADAIR training sorties in the Warning Areas would utilize chaff and flare. Only RR-188 chaff and M206 flares would be utilized (no other materials would be considered in the analysis).
17. Chaff and flares would not be expended in the overland special use airspace.
18. Assume air quality impacts from chaff releases under actual flight conditions would be low and have negligible impact on the PM_{10} & $PM_{2.5}$ National Ambient Air Quality Standards (*Environmental Effects of Self-protection Chaff and Flares 1997 Report*), and thus, only the use of flares and impulse cartridges (if applicable) used at or below 3,000 ft would be considered in the air quality analysis. Flares used above 3,000 ft would disperse and not affect air quality below an altitude of 3,000 ft.
19. The only ADAIR training occurring below 3,000 ft would take place in Restricted Area R-5306A and the Core Military Operations Area (MOA), Restricted Area R-5314/Phelps MOA, and Warning Areas W-177, W-161, and W-72.
20. For the Low Emission Scenario represented by the F-5 aircraft, there are two potential engine types. For the purposes of this analysis, the J85-GE-13 engine model was assumed.
21. For the Medium Emission Scenario, the surrogate for the T-59 Hawk was assumed to be the A-10A with engine model TF34-GE-100.
22. For the High Emission Scenario, the surrogate for the A-4K was assumed to be the A-4F with engine model J52-P-8B.
23. Contractor training/mission time in special use airspace would be approximately 25 to 60 minutes. Time spent at or below 3,000 ft was assumed to be approximately 10.2 minutes.
24. ACAM does not have separate inputs for time spent within a MOA or Warning Area. To represent the time spent at or below 3,000 ft, 10.2 minutes was assigned to climb out/intermediate power mode within the ACAM LTO input fields. No time was assigned to any other power modes, but default ACAM output also lists Trim Tests and touch and gos; however, all inputs for these fields were set to zero (**see Table C-3**).
25. Assume time spent at or below 3,000 ft would be the same for all sorties.
26. No changes to baseline Air Force aircraft air operations (sorties) and civilian operations at the proposed airport due to contract ADAIR.
27. **Tables C-3** and **C-4** below show the data and assumptions used as input to ACAM for flight operations.

Table C-3
Airspace Assumptions and Air Conformity Applicability Model Data Inputs

Airspace	Percent of Total Sorties	No. of Sorties in Airspace[1]	Minimum Mission Altitude	Total Mission Time (minutes) ≤3,000 ft AGL	Power Mode[3]
W-122	72	1,968	5,000 ft MSL to FL390	0	N/A
Burner ATCAA with Hatteras ATCAA/ Pamlico MOAs[4]	7	197	8,000 ft MSL to FL290	0	N/A
R-5306A and Core MOA	2	49	Surface to FL 180	10.2[2]	Intermediate/Climb Out
Echo	2	49	7,000 ft MSL to FL220	0	N/A
Gamecock A MOA	2	49	7,000 ft MSL to FL220	0	N/A
Farmville	7	197	Surface to 5,000 ft MSL	10.2[2]	Intermediate/Climb Out
R-5314/Phelps MOA	3	74	Surface to FL205	10.2[2]	Intermediate/Climb Out
W-177	4	98	Surface to FL390	10.2[2]	Intermediate/Climb Out
W-161			Surface to FL390		
W-72			Surface to FL390		

Notes:
[1] Based on 2,681 total sorties in special use airspace.
[2] Approximate, based on average of time estimated at other ADAIR installations.
[3] ACAM does not have separate inputs for time spent within a Warning Area. To represent the time spent within a Warning Area, the expected flight time at or below 3,000 ft (10.2 minutes) was assigned to Intermediate/Climb out power mode within the ACAM LTO input fields. No time was assigned to any other power modes.
[4] Includes Hatteras A and B ATCAAs and Pamlico A and B MOAs

ACAM = Air Conformity Applicability Model; ADAIR = adversary air; AGL = above ground level; ATCAA = Air Traffic Control Assigned Airspace; FL = flight level (vertical altitude expressed in hundreds of feet); ft = feet; LTO = landing and takeoff; MOA = Military Operations Area; N/A = not applicable

Table C-4
Times in Mode[1] (Minutes) for Aircraft Operations

Type of Operation (AC Type)	Number of Sorties	Taxi/Idle (out)	Takeoff		Climb Out	Approach	Taxi/Idle(in)
			Military	Afterburn			
LTO (A-4F & A-10A)	2,720	18.5	0.2	0.2	0.8	3.5	11.3
LTO (F-5)	2,720	18.5	0.4		0.8	3.5	11.3
TGO[2]	401	-	-		0.8	3.5	-

Notes:
[1] Given time in mode applicable to all emission scenarios (High, Medium, and Low)
[2] 5 percent of on-airport daytime sorties (2,671) were expected to include multiple patterns for contractor proficiency. Each of those 5 percent sorties was assumed to include three TGO/low approaches.

LTO = landing and takeoff; TGO = touch and go

C.1.3 Regulatory Comparisons

The conformity requirement under CAA section 176(c), and the implementing regulations under 40 CFR Part 93, subpart B for general federal actions, requires federal agencies to demonstrate that their proposed activities would conform to the applicable SIP for attainment of the NAAQS. General conformity applies only to nonattainment and maintenance areas. If the emissions from a federal action proposed in a nonattainment area equal or exceed annual *de minimis* thresholds identified in the rule, a formal conformity determination is required for that action. The thresholds are more restrictive as the severity of the nonattainment status of the region increases. The Council on Environmental Quality defines significance in terms of context and intensity in 40 CFR § 1508.27. This requires that the significance of the action be analyzed with respect to the setting of the Proposed Action and based relative to the severity of the impact. The Council on Environmental Quality National Environmental Policy Act regulations (40 CFR § 1508.27[b]) provide 10 key factors to consider in determining an impact's intensity.

Emissions from the Proposed Action in the vicinity of the Kinston Regional Jetport, and special use airspace were assessed in Chapter 4 and compared to regional/county emissions and the applicable regulatory thresholds. **Appendix C-2** provides a single Detailed Air Conformity Applicability Model Report to demonstrate the ACAM inputs and the calculation methodologies used to estimate emissions. **Appendix C-3** provides the Air Conformity Applicability Model Report – Record of Conformity Analysis for the Kinston Regional Jetport. **Appendix C-4** provides the Record of Conformity Analysis for the special use airspace.

C.2 REFERENCES

USEPA. 2010. *40 CFR Parts 51 and 93, Revisions to the General Conformity Regulations*. 75 FR 14283, EPA-HQ-OAR-2006-0669; FRL-9131-7. 24 March.

USEPA. 2016. *NAAQS Table*. <https://www.epa.gov/criteria-air-pollutants/naaqs-table>. 20 December.

USEPA. 2017. *General Conformity: De minimis Tables*. <https://www.epa.gov/general-conformity/de-minimis-tables>. 04 August.

USEPA. 2018. NAAQS Table. <https://www.epa.gov/ground-level-ozone-pollution/table-historical-ozone-national-ambient-air-quality-standards-naaqs>. 20 February.

This page intentionally left blank

Appendix C-2

Detailed Air Conformity Applicability Model Sample Report (Kinston Regional Jetport at Stallings Field – High Scenario)

(For General Conformity Applicability Determination and National Environmental Policy Act Air Quality Assessment)

This page intentionally left blank

1. General Information

- Action Location
Base: SEYMOUR JOHNSON AFB
State: North Carolina
County(s): Lenoir
Regulatory Area(s): NOT IN A REGULATORY AREA

- Action Title: Seymour Johnson AFB Combat Air Force Adversary Air

- Project Number/s (if applicable): N/A

- Projected Action Start Date: 11 / 2020

- Action Purpose and Need:
Combat Air Force (CAF) pilots have to support adversary air (ADAIR) flying missions that have minimal training value to the CAF pilots themselves. ADAIR missions simulate an opposing force that provides a necessary and realistic combat environment during CAF training missions. Flying these ADAIR sorties requires the use of potential adversaries' tactics and procedures that may differ significantly from CAF tactics and procedures and therefore provides minimal CAF training while taking up valuable flying hours that could otherwise be spent on core training tasks. In many cases, minimal ADAIR missions, or none at all, have been available to support pilot training and have resulted in degraded readiness for CAF pilots who are expected to operate some of the most sophisticated weapons platforms in the world.

Contract ADAIR is proposed to fill ADAIR sorties and improve the quality of training and readiness of CAF pilots and allow the Air Force to recapitalize other valuable assets and training time. The contract ADAIR requirement is roughly 30,000 annual sorties across multiple Air Force installations.

The purpose of the Proposed Action is to provide dedicated contract ADAIR sorties to improve the quality of training and readiness of pilots of the 4th FW which includes the 333d, 334th, 335th, and 336th Fighter Squadrons (FS). Dedicated ADAIR will also allow the formal training units (FTUs) to free up resources used to self-generate ADAIR and more effectively use those available flying hours.

- Action Description:
Seymour Johnson AFB does not have the capacity to host contract ADAIR operations on-base; therefore, the Kinston Regional Jetport at Stallings Field (ISO) is being analyzed as suitable for possible use by a contract ADAIR service provider to support Seymour Johnson AFB operations. The proposed airfield is analyzed with the addition of an estimated 14 aircraft providing 2,720 annual training sorties. The analysis examines three separate emission scenarios: high, medium, and low. No significant construction is anticipated at this time as a result of the action. If it is later determined construction is required at the airfield a separate environmental analysis would be completed as required.

- Point of Contact
Name: Tim Sletten
Title: Senior Environmental Scientist
Organization: Versar
Email: tsletten@versar.com
Phone Number: 301-728-4185

- Activity List:

Activity Type		Activity Title
2.	Aircraft	ISO Airfield Operations - High Emissions Scenario
3.	Personnel	Workday Commute
4.	Degreaser	Minor Parts Cleaning - ADAIR Contractor Aircraft
5.	Tanks	Jet A Storage
6.	Tanks	Jet A Storage
7.	Tanks	Jet A Storage
8.	Tanks	Jet A Storage

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. Aircraft

2.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Lenoir
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: ISO Airfield Operations - High Emissions Scenario

- Activity Description:
Contractor ADAIR sorties and proficiency training based out of Kinston Regional Jetport at Stallings Field (ISO) High Emission Scenario: J52-P-8B Engine (Surrogate for A-4K). ACAM default time in mode used.

- Activity Start Date
Start Month: 11
Start Year: 2020

- Activity End Date
Indefinite: No
End Month: 10
End Year: 2030

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	285.582601
SO_x	21.487680
NO_x	206.542862
CO	421.733479
PM 10	16.115663

Pollutant	Total Emissions (TONs)
PM 2.5	15.500516
Pb	0.000000
NH_3	0.000000
CO_2e	43254.2

- Activity Emissions [Flight Operations (includes Trim Test & APU) part]:

Pollutant	Total Emissions (TONs)
VOC	237.419544
SO_x	11.785650
NO_x	67.951894
CO	337.222562
PM 10	1.828934

Pollutant	Total Emissions (TONs)
PM 2.5	1.641044
Pb	0.000000
NH_3	0.000000
CO_2e	35957.4

- Activity Emissions [Aerospace Ground Equipment (AGE) part]:

Pollutant	Total Emissions (TONs)
VOC	48.163057
SO_x	9.702030
NO_x	138.590968
CO	84.510917
PM 10	14.286729

Pollutant	Total Emissions (TONs)
PM 2.5	13.859472
Pb	0.000000
NH_3	0.000000
CO_2e	7296.9

2.2 Aircraft & Engines

2.2.1 Aircraft & Engines Assumptions

- Aircraft & Engine
Aircraft Designation: A-4F
Engine Model: J52-P-8B
Primary Function: Combat
Aircraft has After burn: No
Number of Engines: 1

- Aircraft & Engine Surrogate
Is Aircraft & Engine a Surrogate? Yes
Original Aircraft Name: A-4K
Original Engine Name: unk

2.2.2 Aircraft & Engines Emission Factor(s)

- Aircraft & Engine Emissions Factors (lb/1000lb fuel)

	Fuel Flow	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CO_2e
Idle	680.00	48.53	1.06	1.79	63.78	0.18	0.16	3234
Approach	2300.00	1.98	1.06	6.34	10.54	0.18	0.16	3234
Intermediate	4320.00	0.67	1.06	10.10	3.00	0.13	0.12	3234
Military	7370.00	1.07	1.06	13.05	0.71	0.13	0.12	3234
After Burn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3234

2.3 Flight Operations

2.3.1 Flight Operations Assumptions

- Flight Operations
Number of Aircraft: 14
Number of Annual LTOs (Landing and Take-off) cycles for all Aircraft: 2720
Number of Annual TGOs (Touch-and-Go) cycles for all Aircraft: 401
Number of Annual Trim Test(s) per Aircraft: 12

- Default Settings Used: Yes

- Flight Operations TIMs (Time In Mode)
Taxi/Idle Out [Idle] (mins): 18.5 (default)
Takeoff [Military] (mins): 0.4 (default)
Takeoff [After Burn] (mins): 0 (default)
Climb Out [Intermediate] (mins): 0.8 (default)
Approach [Approach] (mins): 3.5 (default)
Taxi/Idle In [Idle] (mins): 11.3 (default)

Per the Air Emissions Guide for Air Force Mobile Sources, the defaults values for military aircraft equipped with after burner for takeoff is 50% military power and 50% afterburner. (Exception made for F-35 where KARNES 3.2 flight profile was used)

- Trim Test

Idle (mins):	12 (default)
Approach (mins):	27 (default)
Intermediate (mins):	9 (default)
Military (mins):	12 (default)
AfterBurn (mins):	0 (default)

2.3.2 Flight Operations Formula(s)

- Aircraft Emissions per Mode for LTOs per Year

$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * LTO / 2000$

AEM_{POL}: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
LTO: Number of Landing and Take-off Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for LTOs per Year

$AE_{LTO} = AEM_{IDLE_IN} + AEM_{IDLE_OUT} + AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

AE_{LTO}: Aircraft Emissions (TONs)
AEM_{IDLE_IN}: Aircraft Emissions for Idle-In Mode (TONs)
AEM_{IDLE_OUT}: Aircraft Emissions for Idle-Out Mode (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for TGOs per Year

$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * TGO / 2000$

AEM_{POL}: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
TGO: Number of Touch-and-Go Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for TGOs per Year

$AE_{TGO} = AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

AE_{TGO}: Aircraft Emissions (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for Trim per Year
$AEPS_{POL}$ = (TD / 60) * (FC / 1000) * EF * NE * NA * NTT / 2000

$AEPS_{POL}$: Aircraft Emissions per Pollutant & Power Setting (TONs)
TD: Test Duration (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
NA: Number of Aircraft
NTT: Number of Trim Test
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for Trim per Year
$AE_{TRIM} = AEPS_{IDLE} + AEPS_{APPROACH} + AEPS_{INTERMEDIATE} + AEPS_{MILITARY} + AEPS_{AFTERBURN}$

AE_{TRIM}: Aircraft Emissions (TONs)
$AEPS_{IDLE}$: Aircraft Emissions for Idle Power Setting (TONs)
$AEPS_{APPROACH}$: Aircraft Emissions for Approach Power Setting (TONs)
$AEPS_{INTERMEDIATE}$: Aircraft Emissions for Intermediate Power Setting (TONs)
$AEPS_{MILITARY}$: Aircraft Emissions for Military Power Setting (TONs)
$AEPS_{AFTERBURN}$: Aircraft Emissions for After Burner Power Setting (TONs)

2.4 Auxiliary Power Unit (APU)

2.4.1 Auxiliary Power Unit (APU) Assumptions

- Default Settings Used: Yes

- Auxiliary Power Unit (APU) (default)

Number of APU per Aircraft	Operation Hours for Each LTO	Exempt Source?	Designation	Manufacturer

2.4.2 Auxiliary Power Unit (APU) Emission Factor(s)

- Auxiliary Power Unit (APU) Emission Factor (lb/hr)

Designation	Fuel Flow	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CO_2e

2.4.3 Auxiliary Power Unit (APU) Formula(s)

- Auxiliary Power Unit (APU) Emissions per Year
APU_{POL} = APU * OH * LTO * EF_{POL} / 2000

APU_{POL}: Auxiliary Power Unit (APU) Emissions per Pollutant (TONs)
APU: Number of Auxiliary Power Units
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
EF_{POL}: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

2.5 Aerospace Ground Equipment (AGE)

2.5.1 Aerospace Ground Equipment (AGE) Assumptions

- Default Settings Used: Yes

- AGE Usage
Number of Annual LTO (Landing and Take-off) cycles for AGE: 2720

- Aerospace Ground Equipment (AGE) (default)

Total Number of AGE	Operation Hours for Each LTO	Exempt Source?	AGE Type	Designation
1	0.33	No	Air Compressor	MC-1A - 18.4hp
1	1	No	Bomb Lift	MJ-1B
1	0.33	No	Generator Set	A/M32A-86D
1	0.5	No	Heater	H1
1	0.5	No	Hydraulic Test Stand	MJ-2/TTU-228 - 130hp
1	8	No	Light Cart	NF-2
1	0.33	No	Start Cart	A/M32A-60A

2.5.2 Aerospace Ground Equipment (AGE) Emission Factor(s)

- Aerospace Ground Equipment (AGE) Emission Factor (lb/hr)

Designation	Fuel Flow	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CO_2e
MC-1A - 18.4hp	1.1	0.267	0.008	0.419	0.267	0.071	0.068	24.8
MJ-1B	0.0	3.040	0.219	4.780	3.040	0.800	0.776	141.2
A/M32A-86D	6.5	0.294	0.046	6.102	0.457	0.091	0.089	147.0
H1	0.4	0.100	0.011	0.160	0.180	0.006	0.006	8.9
MJ-2/TTU-228 - 130hp	7.4	0.195	0.053	3.396	0.794	0.089	0.086	168.8
NF-2	0.0	0.010	0.043	0.110	0.080	0.010	0.010	22.1
A/M32A-60A	0.0	0.270	0.306	1.820	5.480	0.211	0.205	221.1

2.5.3 Aerospace Ground Equipment (AGE) Formula(s)

- Aerospace Ground Equipment (AGE) Emissions per Year
$AGE_{POL} = AGE * OH * LTO * EF_{POL} / 2000$

AGE_{POL}: Aerospace Ground Equipment (AGE) Emissions per Pollutant (TONs)
AGE: Total Number of Aerospace Ground Equipment
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
EF_{POL}: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

3. Personnel

3.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Lenoir
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Workday Commute

- Activity Description:
ADAIR Contractor Personnel Commute from off-base (91 Maintenance Personnel & 18 Pilots).

- Activity Start Date
Start Month: 11
Start Year: 2020

- Activity End Date
Indefinite: No
End Month: 10
End Year: 2030

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	2.388403
SO_x	0.016413
NO_x	2.084113
CO	26.863039
PM 10	0.053651

Pollutant	Total Emissions (TONs)
PM 2.5	0.047166
Pb	0.000000
NH_3	0.150961
CO_2e	2381.2

3.2 Personnel Assumptions

- Number of Personnel
Active Duty Personnel: 0
Civilian Personnel: 0
Support Contractor Personnel: 109
Air National Guard (ANG) Personnel: 0
Reserve Personnel: 0

- Default Settings Used: Yes

- Average Personnel Round Trip Commute (mile): 20 (default)

- Personnel Work Schedule
Active Duty Personnel: 5 Days Per Week (default)
Civilian Personnel: 5 Days Per Week (default)
Support Contractor Personnel: 5 Days Per Week (default)
Air National Guard (ANG) Personnel: 4 Days Per Week (default)
Reserve Personnel: 4 Days Per Month (default)

3.3 Personnel On Road Vehicle Mixture

- On Road Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	37.55	60.32	0	0.03	0.2	0	1.9
GOVs	54.49	37.73	4.67	0	0	3.11	0

3.4 Personnel Emission Factor(s)

- On Road Vehicle Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.289	000.002	000.221	003.289	000.007	000.006		000.023	00323.223
LDGT	000.371	000.003	000.391	004.648	000.009	000.008		000.024	00416.415
HDGV	000.732	000.005	001.007	015.041	000.019	000.017		000.045	00765.293
LDDV	000.106	000.003	000.131	002.522	000.004	000.004		000.008	00314.055
LDDT	000.244	000.004	000.374	004.301	000.007	000.006		000.008	00445.662
HDDV	000.403	000.013	004.333	001.538	000.164	000.151		000.027	01470.480
MC	002.599	000.003	000.731	013.197	000.027	000.024		000.054	00395.457

3.5 Personnel Formula(s)

- Personnel Vehicle Miles Travel for Work Days per Year

$VMT_P = NP * WD * AC$

VMT_P: Personnel Vehicle Miles Travel (miles/year)
NP: Number of Personnel
WD: Work Days per Year
AC: Average Commute (miles)

- Total Vehicle Miles Travel per Year

$VMT_{Total} = VMT_{AD} + VMT_C + VMT_{SC} + VMT_{ANG} + VMT_{AFRC}$

VMT_{Total}: Total Vehicle Miles Travel (miles)
VMT_{AD}: Active Duty Personnel Vehicle Miles Travel (miles)
VMT_C: Civilian Personnel Vehicle Miles Travel (miles)
VMT_{SC}: Support Contractor Personnel Vehicle Miles Travel (miles)
VMT_{ANG}: Air National Guard Personnel Vehicle Miles Travel (miles)
VMT_{AFRC}: Reserve Personnel Vehicle Miles Travel (miles)

- Vehicle Emissions per Year

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

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

4. Degreaser

4.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Lenoir
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Minor Parts Cleaning - ADAIR Contractor Aircraft

- Activity Description:
Small Parts Cleaning (assume 0.5 gal solvent /mo consumed). Major repairs & maintenance conducted off-site.

- Activity Start Date
Start Month: 11
Start Year: 2020

- Activity End Date
Indefinite: No
End Month: 10
End Year: 2030

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.195390
SO_x	0.000000
NO_x	0.000000
CO	0.000000
PM 10	0.000000

Pollutant	Total Emissions (TONs)
PM 2.5	0.000000
Pb	0.000000
NH_3	0.000000
CO_2e	0.0

4.2 Degreaser Assumptions

- Degreaser
Net solvent usage (total less recycle) (gallons/year): 6

- Default Settings Used: Yes

- Degreaser Consumption
Solvent used: Mineral Spirits CAS#64475-85-0 (default)
Specific gravity of solvent: 0.78 (default)
Solvent VOC content (%): 100 (default)
Efficiency of control device (%): 0 (default)

4.3 Degreaser Formula(s)

- Degreaser Emissions per Year
DE_{VOC}= (VOC / 100) * NS * SG * 8.35 * (1 - (CD / 100)) / 2000

DE_{VOC}: Degreaser VOC Emissions (TONs per Year)
VOC: Solvent VOC content (%)
(VOC / 100): Conversion Factor percent to decimal
NS: Net solvent usage (total less recycle) (gallons/year)
SG: Specific gravity of solvent
8.35: Conversion Factor the density of water
CD: Efficiency of control device (%)
(1 - (CD / 100)): Conversion Factor percent to decimal (Not effected by control device)
2000: Conversion Factor pounds to tons

5. Tanks

5.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Lenoir
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Jet A Storage

- Activity Description:
T1. Accounts for additional fuel throughput due to Contractor ADAIR Sorties. Fuel use estimated based on number of sorties and time in mode. Includes fuel used in Warning Areas and in the vicinity of the airfield.

- Activity Start Date
Start Month: 11
Start Year: 2020

- Activity End Date
Indefinite: No
End Month: 10
End Year: 2030

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.475744
SO_x	0.000000
NO_x	0.000000
CO	0.000000
PM 10	0.000000

Pollutant	Total Emissions (TONs)
PM 2.5	0.000000
Pb	0.000000
NH_3	0.000000
CO_2e	0.0

5.2 Tanks Assumptions

- Chemical
Chemical Name: Jet kerosene (JP-5, JP-8 or Jet-A)
Chemical Category: Petroleum Distillates
Chemical Density: 7
Vapor Molecular Weight (lb/lb-mole): 130
Stock Vapor Density (lb/ft^3): 0.000170775135930213
Vapor Pressure: 0.00725
Vapor Space Expansion Factor (dimensionless): 0.068

- Tank
Type of Tank: Vertical Tank
Tank Height (ft): 39
Tank Diameter (ft): 13
Annual Net Throughput (gallon/year): 441709

5.3 Tank Formula(s)

- Vapor Space Volume
VSV = (PI / 4) * D^2 * H / 2

VSV: Vapor Space Volume (ft^3)
PI: PI Math Constant
D^2: Tank Diameter (ft)
H: Tank Height (ft)
2: Conversion Factor (Vapor Space Volume is assumed to be one-half of the tank volume)

- Vented Vapor Saturation Factor

VVSF = 1 / (1 + (0.053 * VP * H / 2))

VVSF: Vented Vapor Saturation Factor (dimensionless)
0.053: Constant
VP: Vapor Pressure (psia)
H: Tank Height (ft)

- Standing Storage Loss per Year

SSL_{VOC} = 365 * VSV * SVD * VSEF * VVSF / 2000

SSL_{VOC}: Standing Storage Loss Emissions (TONs)
365: Number of Daily Events in a Year (Constant)
VSV: Vapor Space Volume (ft^3)
SVD: Stock Vapor Density (lb/ft^3)
VSEF: Vapor Space Expansion Factor (dimensionless)
VVSF: Vented Vapor Saturation Factor (dimensionless)
2000: Conversion Factor pounds to tons

- Number of Turnovers per Year

NT = (7.48 * ANT) / ((PI / 4.0) * D * H)

NT: Number of Turnovers per Year
7.48: Constant
ANT: Annual Net Throughput
PI: PI Math Constant
D^2: Tank Diameter (ft)
H: Tank Height (ft)

- Working Loss Turnover (Saturation) Factor per Year

WLSF = (18 + NT) / (6 * NT)

WLSF: Working Loss Turnover (Saturation) Factor per Year
18: Constant
NT: Number of Turnovers per Year
6: Constant

- Working Loss per Year

WL_{VOC} = 0.0010 * VMW * VP * ANT * WLSF / 2000

0.0010: Constant
VMW: Vapor Molecular Weight (lb/lb-mole)
VP: Vapor Pressure (psia)
ANT: Annual Net Throughput
WLSF: Working Loss Turnover (Saturation) Factor
2000: Conversion Factor pounds to tons

6. Tanks

6.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Lenoir
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Jet A Storage

- Activity Description:
T2. Accounts for additional fuel throughput due to Contractor ADAIR Sorties. Fuel use estimated based on number of sorties and time in mode. Includes fuel used in Warning Areas and in the vicinity of the airfield.

- Activity Start Date
Start Month: 11
Start Year: 2020

- Activity End Date
Indefinite: No
End Month: 10
End Year: 2030

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.475744
SO_x	0.000000
NO_x	0.000000
CO	0.000000
PM 10	0.000000

Pollutant	Total Emissions (TONs)
PM 2.5	0.000000
Pb	0.000000
NH_3	0.000000
CO_2e	0.0

6.2 Tanks Assumptions

- Chemical
Chemical Name: Jet kerosene (JP-5, JP-8 or Jet-A)
Chemical Category: Petroleum Distillates
Chemical Density: 7
Vapor Molecular Weight (lb/lb-mole): 130
Stock Vapor Density (lb/ft^3): 0.000170775135930213
Vapor Pressure: 0.00725
Vapor Space Expansion Factor (dimensionless): 0.068

- Tank
Type of Tank: Vertical Tank
Tank Height (ft): 39
Tank Diameter (ft): 13
Annual Net Throughput (gallon/year): 441709

6.3 Tank Formula(s)

- Vapor Space Volume
$VSV = (PI / 4) * D^2 * H / 2$

VSV: Vapor Space Volume (ft^3)
PI: PI Math Constant
D^2: Tank Diameter (ft)
H: Tank Height (ft)
2: Conversion Factor (Vapor Space Volume is assumed to be one-half of the tank volume)

- Vented Vapor Saturation Factor

VVSF = 1 / (1 + (0.053 * VP * H / 2))

VVSF: Vented Vapor Saturation Factor (dimensionless)
0.053: Constant
VP: Vapor Pressure (psia)
H: Tank Height (ft)

- Standing Storage Loss per Year

SSL_{VOC} = 365 * VSV * SVD * VSEF * VVSF / 2000

SSL_{VOC}: Standing Storage Loss Emissions (TONs)
365: Number of Daily Events in a Year (Constant)
VSV: Vapor Space Volume (ft^3)
SVD: Stock Vapor Density (lb/ft^3)
VSEF: Vapor Space Expansion Factor (dimensionless)
VVSF: Vented Vapor Saturation Factor (dimensionless)
2000: Conversion Factor pounds to tons

- Number of Turnovers per Year

NT = (7.48 * ANT) / ((PI / 4.0) * D * H)

NT: Number of Turnovers per Year
7.48: Constant
ANT: Annual Net Throughput
PI: PI Math Constant
D^2: Tank Diameter (ft)
H: Tank Height (ft)

- Working Loss Turnover (Saturation) Factor per Year

WLSF = (18 + NT) / (6 * NT)

WLSF: Working Loss Turnover (Saturation) Factor per Year
18: Constant
NT: Number of Turnovers per Year
6: Constant

- Working Loss per Year

WL_{VOC} = 0.0010 * VMW * VP * ANT * WLSF / 2000

0.0010: Constant
VMW: Vapor Molecular Weight (lb/lb-mole)
VP: Vapor Pressure (psia)
ANT: Annual Net Throughput
WLSF: Working Loss Turnover (Saturation) Factor
2000: Conversion Factor pounds to tons

7. Tanks

7.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Lenoir
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Jet A Storage

- Activity Description:
Fuel use estimated based on number of sorties and time in mode. Includes fuel used in Warning Areas and in the vicinity of the airfield.

- Activity Start Date
Start Month: 11
Start Year: 2020

- Activity End Date
Indefinite: No
End Month: 10
End Year: 2030

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.475744
SO_x	0.000000
NO_x	0.000000
CO	0.000000
PM 10	0.000000

Pollutant	Total Emissions (TONs)
PM 2.5	0.000000
Pb	0.000000
NH_3	0.000000
CO_2e	0.0

7.2 Tanks Assumptions

- Chemical
Chemical Name: Jet kerosene (JP-5, JP-8 or Jet-A)
Chemical Category: Petroleum Distillates
Chemical Density: 7
Vapor Molecular Weight (lb/lb-mole): 130
Stock Vapor Density (lb/ft^3): 0.000170775135930213
Vapor Pressure: 0.00725
Vapor Space Expansion Factor (dimensionless): 0.068

- Tank
Type of Tank: Vertical Tank
Tank Height (ft): 39
Tank Diameter (ft): 13
Annual Net Throughput (gallon/year): 441709

7.3 Tank Formula(s)

- Vapor Space Volume
VSV = (PI / 4) * D^2 * H / 2

VSV: Vapor Space Volume (ft^3)
PI: PI Math Constant
D^2: Tank Diameter (ft)
H: Tank Height (ft)
2: Conversion Factor (Vapor Space Volume is assumed to be one-half of the tank volume)

- Vented Vapor Saturation Factor

VVSF = 1 / (1 + (0.053 * VP * H / 2))

VVSF: Vented Vapor Saturation Factor (dimensionless)
0.053: Constant
VP: Vapor Pressure (psia)
H: Tank Height (ft)

- Standing Storage Loss per Year

SSL_{VOC} = 365 * VSV * SVD * VSEF * VVSF / 2000

SSL_{VOC}: Standing Storage Loss Emissions (TONs)
365: Number of Daily Events in a Year (Constant)
VSV: Vapor Space Volume (ft^3)
SVD: Stock Vapor Density (lb/ft^3)
VSEF: Vapor Space Expansion Factor (dimensionless)
VVSF: Vented Vapor Saturation Factor (dimensionless)
2000: Conversion Factor pounds to tons

- Number of Turnovers per Year

NT = (7.48 * ANT) / ((PI / 4.0) * D * H)

NT: Number of Turnovers per Year
7.48: Constant
ANT: Annual Net Throughput
PI: PI Math Constant
D^2: Tank Diameter (ft)
H: Tank Height (ft)

- Working Loss Turnover (Saturation) Factor per Year

WLSF = (18 + NT) / (6 * NT)

WLSF: Working Loss Turnover (Saturation) Factor per Year
18: Constant
NT: Number of Turnovers per Year
6: Constant

- Working Loss per Year

WL_{VOC} = 0.0010 * VMW * VP * ANT * WLSF / 2000

0.0010: Constant
VMW: Vapor Molecular Weight (lb/lb-mole)
VP: Vapor Pressure (psia)
ANT: Annual Net Throughput
WLSF: Working Loss Turnover (Saturation) Factor
2000: Conversion Factor pounds to tons

8. Tanks

8.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Lenoir
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Jet A Storage

- Activity Description:
T4. Accounts for additional fuel throughput due to Contractor ADAIR Sorties. Fuel use estimated based on number of sorties and time in mode. Includes fuel used in Warning Areas and in the vicinity of the airfield.

- Activity Start Date
Start Month: 11
Start Year: 2020

- Activity End Date
Indefinite: No
End Month: 10
End Year: 2030

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.475744
SO_x	0.000000
NO_x	0.000000
CO	0.000000
PM 10	0.000000

Pollutant	Total Emissions (TONs)
PM 2.5	0.000000
Pb	0.000000
NH_3	0.000000
CO_2e	0.0

8.2 Tanks Assumptions

- Chemical
Chemical Name: Jet kerosene (JP-5, JP-8 or Jet-A)
Chemical Category: Petroleum Distillates
Chemical Density: 7
Vapor Molecular Weight (lb/lb-mole): 130
Stock Vapor Density (lb/ft^3): 0.000170775135930213
Vapor Pressure: 0.00725
Vapor Space Expansion Factor (dimensionless): 0.068

- Tank
Type of Tank: Vertical Tank
Tank Height (ft): 39
Tank Diameter (ft): 13
Annual Net Throughput (gallon/year): 441709

8.3 Tank Formula(s)

- Vapor Space Volume
$VSV = (PI / 4) * D^2 * H / 2$

VSV: Vapor Space Volume (ft^3)
PI: PI Math Constant
D^2: Tank Diameter (ft)
H: Tank Height (ft)
2: Conversion Factor (Vapor Space Volume is assumed to be one-half of the tank volume)

- Vented Vapor Saturation Factor

VVSF = 1 / (1 + (0.053 * VP * H / 2))

VVSF: Vented Vapor Saturation Factor (dimensionless)
0.053: Constant
VP: Vapor Pressure (psia)
H: Tank Height (ft)

- Standing Storage Loss per Year

SSL_{VOC} = 365 * VSV * SVD * VSEF * VVSF / 2000

SSL_{VOC}: Standing Storage Loss Emissions (TONs)
365: Number of Daily Events in a Year (Constant)
VSV: Vapor Space Volume (ft^3)
SVD: Stock Vapor Density (lb/ft^3)
VSEF: Vapor Space Expansion Factor (dimensionless)
VVSF: Vented Vapor Saturation Factor (dimensionless)
2000: Conversion Factor pounds to tons

- Number of Turnovers per Year

NT = (7.48 * ANT) / ((PI / 4.0) * D * H)

NT: Number of Turnovers per Year
7.48: Constant
ANT: Annual Net Throughput
PI: PI Math Constant
D^2: Tank Diameter (ft)
H: Tank Height (ft)

- Working Loss Turnover (Saturation) Factor per Year

WLSF = (18 + NT) / (6 * NT)

WLSF: Working Loss Turnover (Saturation) Factor per Year
18: Constant
NT: Number of Turnovers per Year
6: Constant

- Working Loss per Year

WL_{VOC} = 0.0010 * VMW * VP * ANT * WLSF / 2000

0.0010: Constant
VMW: Vapor Molecular Weight (lb/lb-mole)
VP: Vapor Pressure (psia)
ANT: Annual Net Throughput
WLSF: Working Loss Turnover (Saturation) Factor
2000: Conversion Factor pounds to tons

This page intentionally left blank

Appendix C-3

Summary Air Conformity Applicability Model Reports
Record of Air Analysis (ROAA)

Kinston Regional Jetport

(For General Conformity Applicability Determination and National Environmental Policy Act Air Quality Assessment)

This page intentionally left blank

KINSTON REGIONAL JETPORT - HIGH EMISSION SCENARIO

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 Instruction 32-7040, Air Quality Compliance And Resource Management; 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: SEYMOUR JOHNSON AFB
State: North Carolina
County(s): Lenoir
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Seymour Johnson AFB Combat Air Force Adversary Air

c. Project Number/s (if applicable): N/A

d. Projected Action Start Date: 11 / 2020

e. Action Description:

Seymour Johnson AFB does not have the capacity to host contracted ADAIR operations on-base; therefore, the Kinston Regional Jetport at Stallings Field (ISO) is being analyzed as suitable for possible use by a contract ADAIR service provider to support Seymour Johnson AFB operations. The proposed airfield is analyzed with the addition of an estimated 14 aircraft providing 2,720 annual training sorties. The analysis examines three separate emission scenarios: high, medium, and low. No significant construction is anticipated at this time as a result of the action. If it is later determined construction is required a separate environmental analysis would be completed as required.

f. Point of Contact:
Name: Tim Sletten
Title: Senior Environmental Scientist
Organization: Versar
Email: tsletten@versar.com
Phone Number: 301-728-4185

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

_____ applicable
__X__ not applicable

Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the "worst-case" and "steady state" (net gain/loss upon action fully implemented) emissions.

"Air Quality Indicators" were used to provide an indication of the significance of potential impacts to air quality. These air quality indicators are EPA General Conformity Rule (GCR) thresholds (de minimis levels) that are applied out of context to their intended use. Therefore, these indicators do not trigger a regulatory requirement; however, they provide a warning that the action is potentially significant. It is important to note that these indicators only provide a clue to the potential impacts to air quality.

Given the GCR de minimis threshold values are the maximum net change an action can acceptably emit in non-attainment and maintenance areas, these threshold values would also conservatively indicate an actions emissions within an attainment would also be acceptable. An air quality indicator value of 100 tons/yr is used based on the GCR de minimis threshold for the least severe non-attainment classification for all criteria pollutants (see 40 CFR 93.153). Therefore, the worst-case year emissions were compared against the GCR Indicator and are summarized below.

Analysis Summary:

2020

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	4.834	100	No
NOx	3.477	100	No
CO	7.477	100	No
SOx	0.358	100	No
PM 10	0.269	100	No
PM 2.5	0.259	100	No
Pb	0.000	25	No
NH3	0.003	100	No
CO2e	760.6		

2021

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	29.007	100	No
NOx	20.863	100	No
CO	44.860	100	No
SOx	2.150	100	No
PM 10	1.617	100	No
PM 2.5	1.555	100	No
Pb	0.000	25	No
NH3	0.015	100	No
CO2e	4563.5		

2022

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	29.007	100	No
NOx	20.863	100	No
CO	44.860	100	No
SOx	2.150	100	No
PM 10	1.617	100	No
PM 2.5	1.555	100	No
Pb	0.000	25	No
NH3	0.015	100	No
CO2e	4563.5		

2023

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	29.007	100	No
NOx	20.863	100	No
CO	44.860	100	No
SOx	2.150	100	No
PM 10	1.617	100	No
PM 2.5	1.555	100	No
Pb	0.000	25	No
NH3	0.015	100	No
CO2e	4563.5		

2024

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	29.007	100	No
NOx	20.863	100	No
CO	44.860	100	No
SOx	2.150	100	No
PM 10	1.617	100	No
PM 2.5	1.555	100	No
Pb	0.000	25	No
NH3	0.015	100	No
CO2e	4563.5		

2025

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	29.007	100	No
NOx	20.863	100	No
CO	44.860	100	No
SOx	2.150	100	No
PM 10	1.617	100	No
PM 2.5	1.555	100	No
Pb	0.000	25	No
NH3	0.015	100	No
CO2e	4563.5		

2026

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	29.007	100	No
NOx	20.863	100	No
CO	44.860	100	No
SOx	2.150	100	No
PM 10	1.617	100	No
PM 2.5	1.555	100	No
Pb	0.000	25	No
NH3	0.015	100	No
CO2e	4563.5		

2027

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	29.007	100	No
NOx	20.863	100	No
CO	44.860	100	No
SOx	2.150	100	No
PM 10	1.617	100	No
PM 2.5	1.555	100	No
Pb	0.000	25	No
NH3	0.015	100	No
CO2e	4563.5		

2028

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	29.007	100	No
NOx	20.863	100	No
CO	44.860	100	No
SOx	2.150	100	No
PM 10	1.617	100	No
PM 2.5	1.555	100	No
Pb	0.000	25	No
NH3	0.015	100	No
CO2e	4563.5		

2029

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	29.007	100	No
NOx	20.863	100	No
CO	44.860	100	No
SOx	2.150	100	No
PM 10	1.617	100	No
PM 2.5	1.555	100	No
Pb	0.000	25	No
NH3	0.015	100	No
CO2e	4563.5		

2030

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	24.172	100	No
NOx	17.386	100	No
CO	37.383	100	No
SOx	1.792	100	No
PM 10	1.347	100	No
PM 2.5	1.296	100	No
Pb	0.000	25	No
NH3	0.013	100	No
CO2e	3803.0		

2031 (Steady State)

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.000	100	No
NOx	0.000	100	No
CO	0.000	100	No
SOx	0.000	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	0.0		

None of estimated emissions associated with this action are above the GCR indicators, indicating no significant impact to air quality; therefore, no further air assessment is needed.

Tim Sletten

Tim Sletten, Senior Environmental Scientist

01/31/2020
DATE

KINSTON REGIONAL JETPORT - MEDIUM EMISSION SCENARIO

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 Instruction 32-7040, Air Quality Compliance And Resource Management; 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: SEYMOUR JOHNSON AFB
State: North Carolina
County(s): Lenoir
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Seymour Johnson AFB Combat Air Force Adversary Air

c. Project Number/s (if applicable): N/A

d. Projected Action Start Date: 11 / 2020

e. Action Description:

Seymour Johnson AFB does not have the capacity to host contracted ADAIR operations on-base; therefore, the Kinston Regional Jetport at Stallings Field (ISO) is being analyzed as suitable for possible use by a contract ADAIR service provider to support Seymour Johnson AFB operations. The proposed airfield is analyzed with the addition of an estimated 14 aircraft providing 2,720 annual training sorties. The analysis examines three separate emission scenarios: high, medium, and low. No significant construction is anticipated at this time as a result of the action. If it is later determined construction is required a separate environmental analysis would be completed as required.

f. Point of Contact:

Name: Tim Sletten
Title: Senior Environmental Scientist
Organization: Versar
Email: tsletten@versar.com
Phone Number: 301-728-4185

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

_____ applicable
__X__ not applicable

Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the "worst-case" and "steady state" (net gain/loss upon action fully implemented) emissions.

"Air Quality Indicators" were used to provide an indication of the significance of potential impacts to air quality. These air quality indicators are EPA General Conformity Rule (GCR) thresholds (de minimis levels) that are applied out of context to their intended use. Therefore, these indicators do not trigger a regulatory requirement; however, they provide a warning that the action is potentially significant. It is important to note that these indicators only provide a clue to the potential impacts to air quality.

Given the GCR de minimis threshold values are the maximum net change an action can acceptably emit in non-attainment and maintenance areas, these threshold values would also conservatively indicate an actions emissions within an attainment would also be acceptable. An air quality indicator value of 100 tons/yr is used based on the GCR de minimis threshold for the least severe non-attainment classification for all criteria pollutants (see 40 CFR 93.153). Therefore, the worst-case year emissions were compared against the GCR Indicator and are summarized below.

Analysis Summary:

2020

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	9.823	100	No
NOx	13.522	100	No
CO	20.212	100	No
SOx	0.847	100	No
PM 10	2.715	100	No
PM 2.5	2.040	100	No
Pb	0.000	25	No
NH3	0.003	100	No
CO2e	1203.7		

2021

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	58.941	100	No
NOx	81.130	100	No
CO	121.271	100	Yes
SOx	5.083	100	No
PM 10	16.288	100	No
PM 2.5	12.240	100	No
Pb	0.000	25	No
NH3	0.015	100	No
CO2e	7222.3		

2022

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	58.941	100	No
NOx	81.130	100	No
CO	121.271	100	Yes
SOx	5.083	100	No
PM 10	16.288	100	No
PM 2.5	12.240	100	No
Pb	0.000	25	No
NH3	0.015	100	No
CO2e	7222.3		

2023

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	58.941	100	No
NOx	81.130	100	No
CO	121.271	100	Yes
SOx	5.083	100	No
PM 10	16.288	100	No
PM 2.5	12.240	100	No
Pb	0.000	25	No
NH3	0.015	100	No
CO2e	7222.3		

2024

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	58.941	100	No
NOx	81.130	100	No
CO	121.271	100	Yes
SOx	5.083	100	No
PM 10	16.288	100	No
PM 2.5	12.240	100	No
Pb	0.000	25	No
NH3	0.015	100	No
CO2e	7222.3		

2025

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	58.941	100	No
NOx	81.130	100	No
CO	121.271	100	Yes
SOx	5.083	100	No
PM 10	16.288	100	No
PM 2.5	12.240	100	No
Pb	0.000	25	No
NH3	0.015	100	No
CO2e	7222.3		

2026

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	58.941	100	No
NOx	81.130	100	No
CO	121.271	100	Yes
SOx	5.083	100	No
PM 10	16.288	100	No
PM 2.5	12.240	100	No
Pb	0.000	25	No
NH3	0.015	100	No
CO2e	7222.3		

2027

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	58.941	100	No
NOx	81.130	100	No
CO	121.271	100	Yes
SOx	5.083	100	No
PM 10	16.288	100	No
PM 2.5	12.240	100	No
Pb	0.000	25	No
NH3	0.015	100	No
CO2e	7222.3		

2028

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	58.941	100	No
NOx	81.130	100	No
CO	121.271	100	Yes
SOx	5.083	100	No
PM 10	16.288	100	No
PM 2.5	12.240	100	No
Pb	0.000	25	No
NH3	0.015	100	No
CO2e	7222.3		

2029

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	58.941	100	No
NOx	81.130	100	No
CO	121.271	100	Yes
SOx	5.083	100	No
PM 10	16.288	100	No
PM 2.5	12.240	100	No
Pb	0.000	25	No
NH3	0.015	100	No
CO2e	7222.3		

2030

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	49.117	100	No
NOx	67.609	100	No
CO	101.059	100	Yes
SOx	4.236	100	No
PM 10	13.573	100	No
PM 2.5	10.200	100	No
Pb	0.000	25	No
NH3	0.013	100	No
CO2e	6018.6		

2031 (Steady State)

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.000	100	No
NOx	0.000	100	No
CO	0.000	100	No
SOx	0.000	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	0.0		

Some estimated emissions associated with this action are above the GCR indicators, indicating a significant impact to air quality; therefore, further air assessment is needed.

Tim Sletten

Tim Sletten, Senior Environmental Scientist

01/31/2020
DATE

KINSTON REGIONAL JETPORT - LOW EMISSION SCENARIO

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 Instruction 32-7040, Air Quality Compliance And Resource Management; 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: SEYMOUR JOHNSON AFB
State: North Carolina
County(s): Lenoir
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Seymour Johnson AFB Combat Air Force Adversary Air

c. Project Number/s (if applicable): N/A

d. Projected Action Start Date: 11 / 2020

e. Action Description:

Seymour Johnson AFB does not have the capacity to host contracted ADAIR operations on-base; therefore, the Kinston Regional Jetport at Stallings Field (ISO) is being analyzed as suitable for possible use by a contract ADAIR service provider to support Seymour Johnson AFB operations. The proposed airfield is analyzed with the addition of an estimated 14 aircraft providing 2,720 annual training sorties. The analysis examines three separate emission scenarios: high, medium, and low. No significant construction is anticipated at this time as a result of the action. If it is later determined construction is required a separate environmental analysis would be completed as required.

f. Point of Contact:
Name: Tim Sletten
Title: Senior Environmental Scientist
Organization: Versar
Email: tsletten@versar.com
Phone Number: 301-728-4185

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

_____ applicable
__X__ not applicable

Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the "worst-case" and "steady state" (net gain/loss upon action fully implemented) emissions.

"Air Quality Indicators" were used to provide an indication of the significance of potential impacts to air quality. These air quality indicators are EPA General Conformity Rule (GCR) thresholds (de minimis levels) that are applied out of context to their intended use. Therefore, these indicators do not trigger a regulatory requirement; however, they provide a warning that the action is potentially significant. It is important to note that these indicators only provide a clue to the potential impacts to air quality.

Given the GCR de minimis threshold values are the maximum net change an action can acceptably emit in non-attainment and maintenance areas, these threshold values would also conservatively indicate an actions emissions within an attainment would also be acceptable. An air quality indicator value of 100 tons/yr is used based on the GCR de minimis threshold for the least severe non-attainment classification for all criteria pollutants (see 40 CFR 93.153). Therefore, the worst-case year emissions were compared against the GCR Indicator and are summarized below.

Analysis Summary:

2020

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	5.724	100	No
NOx	2.776	100	No
CO	30.046	100	No
SOx	0.427	100	No
PM 10	0.241	100	No
PM 2.5	0.233	100	No
Pb	0.000	25	No
NH3	0.003	100	No
CO2e	936.6		

2021

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	34.343	100	No
NOx	16.654	100	No
CO	180.275	100	Yes
SOx	2.565	100	No
PM 10	1.444	100	No
PM 2.5	1.400	100	No
Pb	0.000	25	No
NH3	0.015	100	No
CO2e	5619.3		

2022

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	34.343	100	No
NOx	16.654	100	No
CO	180.275	100	Yes
SOx	2.565	100	No
PM 10	1.444	100	No
PM 2.5	1.400	100	No
Pb	0.000	25	No
NH3	0.015	100	No
CO2e	5619.3		

2023

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	34.343	100	No
NOx	16.654	100	No
CO	180.275	100	Yes
SOx	2.565	100	No
PM 10	1.444	100	No
PM 2.5	1.400	100	No
Pb	0.000	25	No
NH3	0.015	100	No
CO2e	5619.3		

2024

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	34.343	100	No
NOx	16.654	100	No
CO	180.275	100	Yes
SOx	2.565	100	No
PM 10	1.444	100	No
PM 2.5	1.400	100	No
Pb	0.000	25	No
NH3	0.015	100	No
CO2e	5619.3		

2025

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	34.343	100	No
NOx	16.654	100	No
CO	180.275	100	Yes
SOx	2.565	100	No
PM 10	1.444	100	No
PM 2.5	1.400	100	No
Pb	0.000	25	No
NH3	0.015	100	No
CO2e	5619.3		

2026

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	34.343	100	No
NOx	16.654	100	No
CO	180.275	100	Yes
SOx	2.565	100	No
PM 10	1.444	100	No
PM 2.5	1.400	100	No
Pb	0.000	25	No
NH3	0.015	100	No
CO2e	5619.3		

2027

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	34.343	100	No
NOx	16.654	100	No
CO	180.275	100	Yes
SOx	2.565	100	No
PM 10	1.444	100	No
PM 2.5	1.400	100	No
Pb	0.000	25	No
NH3	0.015	100	No
CO2e	5619.3		

2028

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	34.343	100	No
NOx	16.654	100	No
CO	180.275	100	Yes
SOx	2.565	100	No
PM 10	1.444	100	No
PM 2.5	1.400	100	No
Pb	0.000	25	No
NH3	0.015	100	No
CO2e	5619.3		

2029

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	34.343	100	No
NOx	16.654	100	No
CO	180.275	100	Yes
SOx	2.565	100	No
PM 10	1.444	100	No
PM 2.5	1.400	100	No
Pb	0.000	25	No
NH3	0.015	100	No
CO2e	5619.3		

2030

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	28.619	100	No
NOx	13.878	100	No
CO	150.229	100	Yes
SOx	2.137	100	No
PM 10	1.203	100	No
PM 2.5	1.166	100	No
Pb	0.000	25	No
NH3	0.013	100	No
CO2e	4682.8		

2031 (Steady State)

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.000	100	No
NOx	0.000	100	No
CO	0.000	100	No
SOx	0.000	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	0.0		

Some estimated emissions associated with this action are above the GCR indicators, indicating a significant impact to air quality; therefore, further air assessment is needed.

Tim Sletten

Tim Sletten, Senior Environmental Scientist

01/31/2020
DATE

This page intentionally left blank

Appendix C-4

Summary Air Conformity Applicability Model Reports
Record of Air Analysis (ROAA)

Special Use Airspace

(For General Conformity Applicability Determination and National Environmental Policy Act Air Quality Assessment)

This page intentionally left blank

FARMVILLE MOA - HIGH EMISSION SCENARIO

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 Instruction 32-7040, Air Quality Compliance And Resource Management; 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: SEYMOUR JOHNSON AFB
State: Virginia
County(s): Nottoway; Prince Edward; Campbell; Accomack; Lunenburg; Powhatan; Charlotte; Amelia; Halifax; Mecklenburg
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Seymour Johnson AFB Combat Air Force Adversary Air

c. Project Number/s (if applicable): N/A

d. Projected Action Start Date: 11 / 2020

e. Action Description:

Seymour Johnson AFB does not have the capacity to host contracted ADAIR operations on-base; therefore, the Kinston Regional Jetport at Stallings Field (ISO) is being analyzed as suitable for possible use by a contract ADAIR service provider to support Seymour Johnson AFB operations. The proposed airfield is analyzed with the addition of an estimated 14 aircraft providing 2,720 annual training sorties. The analysis examines three separate emission scenarios: high, medium, and low. No significant construction is anticipated at this time as a result of the action. If it is later determined construction is required a separate environmental analysis would be completed as required.

f. Point of Contact:

Name: Tim Sletten
Title: Senior Environmental Scientist
Organization: Versar
Email: tsletten@versar.com
Phone Number: 301-728-4185

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

_____ applicable
__X__ not applicable

Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the "worst-case" and "steady state" (net gain/loss upon action fully implemented) emissions.

"Air Quality Indicators" were used to provide an indication of the significance of potential impacts to air quality. These air quality indicators are EPA General Conformity Rule (GCR) thresholds (de minimis levels) that are applied out of context to their intended use. Therefore, these indicators do not trigger a regulatory requirement; however, they provide a warning that the action is potentially significant. It is important to note that these indicators only provide a clue to the potential impacts to air quality.

Given the GCR de minimis threshold values are the maximum net change an action can acceptably emit in non-attainment and maintenance areas, these threshold values would also conservatively indicate an actions emissions within an attainment would also be acceptable. An air quality indicator value of 100 tons/yr is used based on the GCR de minimis threshold for the least severe non-attainment classification for all criteria pollutants (see 40 CFR 93.153). Therefore, the worst-case year emissions were compared against the GCR Indicator and are summarized below.

Analysis Summary:

2020

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.008	100	No
NOx	0.122	100	No
CO	0.036	100	No
SOx	0.013	100	No
PM 10	0.002	100	No
PM 2.5	0.001	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	39.0		

2021

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.048	100	No
NOx	0.731	100	No
CO	0.217	100	No
SOx	0.077	100	No
PM 10	0.009	100	No
PM 2.5	0.009	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	233.9		

2022

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.048	100	No
NOx	0.731	100	No
CO	0.217	100	No
SOx	0.077	100	No
PM 10	0.009	100	No
PM 2.5	0.009	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	233.9		

2023

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.048	100	No
NOx	0.731	100	No
CO	0.217	100	No
SOx	0.077	100	No
PM 10	0.009	100	No
PM 2.5	0.009	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	233.9		

2024

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.048	100	No
NOx	0.731	100	No
CO	0.217	100	No
SOx	0.077	100	No
PM 10	0.009	100	No
PM 2.5	0.009	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	233.9		

2025

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.048	100	No
NOx	0.731	100	No
CO	0.217	100	No
SOx	0.077	100	No
PM 10	0.009	100	No
PM 2.5	0.009	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	233.9		

2026

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.048	100	No
NOx	0.731	100	No
CO	0.217	100	No
SOx	0.077	100	No
PM 10	0.009	100	No
PM 2.5	0.009	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	233.9		

2027

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.048	100	No
NOx	0.731	100	No
CO	0.217	100	No
SOx	0.077	100	No
PM 10	0.009	100	No
PM 2.5	0.009	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	233.9		

2028

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.048	100	No
NOx	0.731	100	No
CO	0.217	100	No
SOx	0.077	100	No
PM 10	0.009	100	No
PM 2.5	0.009	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	233.9		

2029

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.048	100	No
NOx	0.731	100	No
CO	0.217	100	No
SOx	0.077	100	No
PM 10	0.009	100	No
PM 2.5	0.009	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	233.9		

2030

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.040	100	No
NOx	0.609	100	No
CO	0.181	100	No
SOx	0.064	100	No
PM 10	0.008	100	No
PM 2.5	0.007	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	195.0		

2031 (Steady State)

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.000	100	No
NOx	0.000	100	No
CO	0.000	100	No
SOx	0.000	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	0.0		

None of estimated emissions associated with this action are above the GCR indicators, indicating no significant impact to air quality; therefore, no further air assessment is needed.

Tim Sletten

Tim Sletten, Senior Environmental Scientist

01/31/2020
DATE

FARMVILLE MOA - MEDIUM EMISSION SCENARIO

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 Instruction 32-7040, Air Quality Compliance And Resource Management; 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: SEYMOUR JOHNSON AFB
State: Virginia
County(s): Nottoway; Prince Edward; Campbell; Cumberland; Appomattox; Lunenburg; Powhatan; Charlotte; Amelia; Halifax; Mecklenburg
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Seymour Johnson AFB Combat Air Force Adversary Air

c. Project Number/s (if applicable): N/A

d. Projected Action Start Date: 11 / 2020

e. Action Description:

Seymour Johnson AFB does not have the capacity to host contracted ADAIR operations on-base; therefore, the Kinston Regional Jetport at Stallings Field (ISO) is being analyzed as suitable for possible use by a contract ADAIR service provider to support Seymour Johnson AFB operations. The proposed airfield is analyzed with the addition of an estimated 14 aircraft providing 2,720 annual training sorties. The analysis examines three separate emission scenarios: high, medium, and low. No significant construction is anticipated at this time as a result of the action. If it is later determined construction is required a separate environmental analysis would be completed as required.

f. Point of Contact:

Name: Tim Sletten
Title: Senior Environmental Scientist
Organization: Versar
Email: tsletten@versar.com
Phone Number: 301-728-4185

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

_____ applicable
__X__ not applicable

Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the "worst-case" and "steady state" (net gain/loss upon action fully implemented) emissions.

"Air Quality Indicators" were used to provide an indication of the significance of potential impacts to air quality. These air quality indicators are EPA General Conformity Rule (GCR) thresholds (de minimis levels) that are applied out of context to their intended use. Therefore, these indicators do not trigger a regulatory requirement; however, they provide a warning that the action is potentially significant. It is important to note that these indicators only provide a clue to the potential impacts to air quality.

Given the GCR de minimis threshold values are the maximum net change an action can acceptably emit in non-attainment and maintenance areas, these threshold values would also conservatively indicate an actions emissions within an attainment would also be acceptable. An air quality indicator value of 100 tons/yr is used based on the GCR de minimis threshold for the least severe non-attainment classification for all criteria pollutants (see 40 CFR 93.153). Therefore, the worst-case year emissions were compared against the GCR Indicator and are summarized below.

Analysis Summary:

2020

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.060	100	No
NOx	0.007	100	No
CO	0.200	100	No
SOx	0.003	100	No
PM 10	0.023	100	No
PM 2.5	0.018	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	8.3		

2021

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.360	100	No
NOx	0.040	100	No
CO	1.202	100	No
SOx	0.016	100	No
PM 10	0.138	100	No
PM 2.5	0.107	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	49.8		

2022

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.360	100	No
NOx	0.040	100	No
CO	1.202	100	No
SOx	0.016	100	No
PM 10	0.138	100	No
PM 2.5	0.107	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	49.8		

2023

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.360	100	No
NOx	0.040	100	No
CO	1.202	100	No
SOx	0.016	100	No
PM 10	0.138	100	No
PM 2.5	0.107	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	49.8		

2024

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.360	100	No
NOx	0.040	100	No
CO	1.202	100	No
SOx	0.016	100	No
PM 10	0.138	100	No
PM 2.5	0.107	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	49.8		

2025

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.360	100	No
NOx	0.040	100	No
CO	1.202	100	No
SOx	0.016	100	No
PM 10	0.138	100	No
PM 2.5	0.107	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	49.8		

2026

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.360	100	No
NOx	0.040	100	No
CO	1.202	100	No
SOx	0.016	100	No
PM 10	0.138	100	No
PM 2.5	0.107	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	49.8		

2027

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.360	100	No
NOx	0.040	100	No
CO	1.202	100	No
SOx	0.016	100	No
PM 10	0.138	100	No
PM 2.5	0.107	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	49.8		

2028

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.360	100	No
NOx	0.040	100	No
CO	1.202	100	No
SOx	0.016	100	No
PM 10	0.138	100	No
PM 2.5	0.107	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	49.8		

2029

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.360	100	No
NOx	0.040	100	No
CO	1.202	100	No
SOx	0.016	100	No
PM 10	0.138	100	No
PM 2.5	0.107	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	49.8		

2030

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.300	100	No
NOx	0.033	100	No
CO	1.001	100	No
SOx	0.014	100	No
PM 10	0.115	100	No
PM 2.5	0.089	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	41.5		

2031 (Steady State)

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.000	100	No
NOx	0.000	100	No
CO	0.000	100	No
SOx	0.000	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	0.0		

None of estimated emissions associated with this action are above the GCR indicators, indicating no significant impact to air quality; therefore, no further air assessment is needed.

Tim Sletten

Tim Sletten, Senior Environmental Scientist

01/31/2020
DATE

FARMVILLE MOA - LOW EMISSION SCENARIO

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 Instruction 32-7040, Air Quality Compliance And Resource Management; 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: SEYMOUR JOHNSON AFB
State: Virginia
County(s): Nottoway; Prince Edward; Campbell; Cumberland; Appomattox; Lunenburg; Powhatan; Charlotte; Amelia; Halifax; Mecklenburg
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Seymour Johnson AFB Combat Air Force Adversary Air

c. Project Number/s (if applicable): N/A

d. Projected Action Start Date: 11 / 2020

e. Action Description:

Seymour Johnson AFB does not have the capacity to host contracted ADAIR operations on-base; therefore, the Kinston Regional Jetport at Stallings Field (ISO) is being analyzed as suitable for possible use by a contract ADAIR service provider to support Seymour Johnson AFB operations. The proposed airfield is analyzed with the addition of an estimated 14 aircraft providing 2,720 annual training sorties. The analysis examines three separate emission scenarios: high, medium, and low. No significant construction is anticipated at this time as a result of the action. If it is later determined construction is required a separate environmental analysis would be completed as required.

f. Point of Contact:

Name: Tim Sletten
Title: Senior Environmental Scientist
Organization: Versar
Email: tsletten@versar.com
Phone Number: 301-728-4185

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

_____ applicable
__X__ not applicable

Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the "worst-case" and "steady state" (net gain/loss upon action fully implemented) emissions.

"Air Quality Indicators" were used to provide an indication of the significance of potential impacts to air quality. These air quality indicators are EPA General Conformity Rule (GCR) thresholds (de minimis levels) that are applied out of context to their intended use. Therefore, these indicators do not trigger a regulatory requirement; however, they provide a warning that the action is potentially significant. It is important to note that these indicators only provide a clue to the potential impacts to air quality.

Given the GCR de minimis threshold values are the maximum net change an action can acceptably emit in non-attainment and maintenance areas, these threshold values would also conservatively indicate an actions emissions within an attainment would also be acceptable. An air quality indicator value of 100 tons/yr is used based on the GCR de minimis threshold for the least severe non-attainment classification for all criteria pollutants (see 40 CFR 93.153). Therefore, the worst-case year emissions were compared against the GCR Indicator and are summarized below.

Analysis Summary:

2020

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.050	100	No
NOx	0.029	100	No
CO	0.533	100	No
SOx	0.013	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	40.1		

2021

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.300	100	No
NOx	0.171	100	No
CO	3.200	100	No
SOx	0.079	100	No
PM 10	0.001	100	No
PM 2.5	0.001	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	240.7		

2022

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.300	100	No
NOx	0.171	100	No
CO	3.200	100	No
SOx	0.079	100	No
PM 10	0.001	100	No
PM 2.5	0.001	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	240.7		

2023

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.300	100	No
NOx	0.171	100	No
CO	3.200	100	No
SOx	0.079	100	No
PM 10	0.001	100	No
PM 2.5	0.001	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	240.7		

2024

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.300	100	No
NOx	0.171	100	No
CO	3.200	100	No
SOx	0.079	100	No
PM 10	0.001	100	No
PM 2.5	0.001	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	240.7		

2025

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.300	100	No
NOx	0.171	100	No
CO	3.200	100	No
SOx	0.079	100	No
PM 10	0.001	100	No
PM 2.5	0.001	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	240.7		

2026

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.300	100	No
NOx	0.171	100	No
CO	3.200	100	No
SOx	0.079	100	No
PM 10	0.001	100	No
PM 2.5	0.001	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	240.7		

2027

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.300	100	No
NOx	0.171	100	No
CO	3.200	100	No
SOx	0.079	100	No
PM 10	0.001	100	No
PM 2.5	0.001	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	240.7		

2028

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.300	100	No
NOx	0.171	100	No
CO	3.200	100	No
SOx	0.079	100	No
PM 10	0.001	100	No
PM 2.5	0.001	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	240.7		

2029

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.300	100	No
NOx	0.171	100	No
CO	3.200	100	No
SOx	0.079	100	No
PM 10	0.001	100	No
PM 2.5	0.001	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	240.7		

2030

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.250	100	No
NOx	0.143	100	No
CO	2.667	100	No
SOx	0.066	100	No
PM 10	0.001	100	No
PM 2.5	0.001	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	200.5		

2031 (Steady State)

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.000	100	No
NOx	0.000	100	No
CO	0.000	100	No
SOx	0.000	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	0.0		

None of estimated emissions associated with this action are above the GCR indicators, indicating no significant impact to air quality; therefore, no further air assessment is needed.

Tim Sletten

Tim Sletten, Senior Environmental Scientist

01/31/2020
DATE

R-5306A and CORE MOA - HIGH EMISSION SCENARIO

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 Instruction 32-7040, Air Quality Compliance And Resource Management; 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: SEYMOUR JOHNSON AFB
State: North Carolina
County(s): Carteret; Craven; Hyde; Pamlico
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Seymour Johnson AFB Combat Air Force Adversary Air

c. Project Number/s (if applicable): N/A

d. Projected Action Start Date: 11 / 2020

e. Action Description:

Seymour Johnson AFB does not have the capacity to host contracted ADAIR operations on-base; therefore, the Kinston Regional Jetport at Stallings Field (ISO) is being analyzed as suitable for possible use by a contract ADAIR service provider to support Seymour Johnson AFB operations. The proposed airfield is analyzed with the addition of an estimated 14 aircraft providing 2,720 annual training sorties. The analysis examines three separate emission scenarios: high, medium, and low. No significant construction is anticipated at this time as a result of the action. If it is later determined construction is required a separate environmental analysis would be completed as required.

f. Point of Contact:
Name: Tim Sletten
Title: Senior Environmental Scientist
Organization: Versar
Email: tsletten@versar.com
Phone Number: 301-728-4185

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

_____ applicable
__X__ not applicable

Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the "worst-case" and "steady state" (net gain/loss upon action fully implemented) emissions.

"Air Quality Indicators" were used to provide an indication of the significance of potential impacts to air quality. These air quality indicators are EPA General Conformity Rule (GCR) thresholds (de minimis levels) that are applied out of context to their intended use. Therefore, these indicators do not trigger a regulatory requirement; however, they provide a warning that the action is potentially significant. It is important to note that these indicators only provide a clue to the potential impacts to air quality.

Given the GCR de minimis threshold values are the maximum net change an action can acceptably emit in non-attainment and maintenance areas, these threshold values would also conservatively indicate an actions emissions within an attainment would also be acceptable. An air quality indicator value of 100 tons/yr is used based on the GCR de minimis threshold for the least severe non-attainment classification for all criteria pollutants (see 40 CFR 93.153). Therefore, the worst-case year emissions were compared against the GCR Indicator and are summarized below.

Analysis Summary:

2020

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.002	100	No
NOx	0.030	100	No
CO	0.009	100	No
SOx	0.003	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	9.7		

2021

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.012	100	No
NOx	0.182	100	No
CO	0.054	100	No
SOx	0.019	100	No
PM 10	0.002	100	No
PM 2.5	0.002	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	58.2		

2022

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.012	100	No
NOx	0.182	100	No
CO	0.054	100	No
SOx	0.019	100	No
PM 10	0.002	100	No
PM 2.5	0.002	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	58.2		

2023

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.012	100	No
NOx	0.182	100	No
CO	0.054	100	No
SOx	0.019	100	No
PM 10	0.002	100	No
PM 2.5	0.002	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	58.2		

2024

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.012	100	No
NOx	0.182	100	No
CO	0.054	100	No
SOx	0.019	100	No
PM 10	0.002	100	No
PM 2.5	0.002	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	58.2		

2025

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.012	100	No
NOx	0.182	100	No
CO	0.054	100	No
SOx	0.019	100	No
PM 10	0.002	100	No
PM 2.5	0.002	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	58.2		

2026

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.012	100	No
NOx	0.182	100	No
CO	0.054	100	No
SOx	0.019	100	No
PM 10	0.002	100	No
PM 2.5	0.002	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	58.2		

2027

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.012	100	No
NOx	0.182	100	No
CO	0.054	100	No
SOx	0.019	100	No
PM 10	0.002	100	No
PM 2.5	0.002	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	58.2		

2028

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.012	100	No
NOx	0.182	100	No
CO	0.054	100	No
SOx	0.019	100	No
PM 10	0.002	100	No
PM 2.5	0.002	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	58.2		

2029

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.012	100	No
NOx	0.182	100	No
CO	0.054	100	No
SOx	0.019	100	No
PM 10	0.002	100	No
PM 2.5	0.002	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	58.2		

2030

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.010	100	No
NOx	0.151	100	No
CO	0.045	100	No
SOx	0.016	100	No
PM 10	0.002	100	No
PM 2.5	0.002	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	48.5		

2031 (Steady State)

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.000	100	No
NOx	0.000	100	No
CO	0.000	100	No
SOx	0.000	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	0.0		

None of estimated emissions associated with this action are above the GCR indicators, indicating no significant impact to air quality; therefore, no further air assessment is needed.

Tim Sletten

Tim Sletten, Senior Environmental Scientist

01/31/2020
DATE

R-5306A and CORE MOA - MEDIUM EMISSION SCENARIO

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 Instruction 32-7040, Air Quality Compliance And Resource Management; 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: SEYMOUR JOHNSON AFB
State: North Carolina
County(s): Carteret; Craven; Hyde; Pamlico
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Seymour Johnson AFB Combat Air Force Adversary Air

c. Project Number/s (if applicable): N/A

d. Projected Action Start Date: 11 / 2020

e. Action Description:

Seymour Johnson AFB does not have the capacity to host contracted ADAIR operations on-base; therefore, the Kinston Regional Jetport at Stallings Field (ISO) is being analyzed as suitable for possible use by a contract ADAIR service provider to support Seymour Johnson AFB operations. The proposed airfield is analyzed with the addition of an estimated 14 aircraft providing 2,720 annual training sorties. The analysis examines three separate emission scenarios: high, medium, and low. No significant construction is anticipated at this time as a result of the action. If it is later determined construction is required a separate environmental analysis would be completed as required.

f. Point of Contact:
Name: Tim Sletten
Title: Senior Environmental Scientist
Organization: Versar
Email: tsletten@versar.com
Phone Number: 301-728-4185

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

_____ applicable
__X__ not applicable

Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the "worst-case" and "steady state" (net gain/loss upon action fully implemented) emissions.

"Air Quality Indicators" were used to provide an indication of the significance of potential impacts to air quality. These air quality indicators are EPA General Conformity Rule (GCR) thresholds (de minimis levels) that are applied out of context to their intended use. Therefore, these indicators do not trigger a regulatory requirement; however, they provide a warning that the action is potentially significant. It is important to note that these indicators only provide a clue to the potential impacts to air quality.

Given the GCR de minimis threshold values are the maximum net change an action can acceptably emit in non-attainment and maintenance areas, these threshold values would also conservatively indicate an actions emissions within an attainment would also be acceptable. An air quality indicator value of 100 tons/yr is used based on the GCR de minimis threshold for the least severe non-attainment classification for all criteria pollutants (see 40 CFR 93.153). Therefore, the worst-case year emissions were compared against the GCR Indicator and are summarized below.

Analysis Summary:

2020

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.015	100	No
NOx	0.002	100	No
CO	0.050	100	No
SOx	0.001	100	No
PM 10	0.006	100	No
PM 2.5	0.004	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	2.1		

2021

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.089	100	No
NOx	0.010	100	No
CO	0.299	100	No
SOx	0.004	100	No
PM 10	0.034	100	No
PM 2.5	0.027	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	12.4		

2022

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.089	100	No
NOx	0.010	100	No
CO	0.299	100	No
SOx	0.004	100	No
PM 10	0.034	100	No
PM 2.5	0.027	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	12.4		

2023

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.089	100	No
NOx	0.010	100	No
CO	0.299	100	No
SOx	0.004	100	No
PM 10	0.034	100	No
PM 2.5	0.027	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	12.4		

2024

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.089	100	No
NOx	0.010	100	No
CO	0.299	100	No
SOx	0.004	100	No
PM 10	0.034	100	No
PM 2.5	0.027	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	12.4		

2025

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.089	100	No
NOx	0.010	100	No
CO	0.299	100	No
SOx	0.004	100	No
PM 10	0.034	100	No
PM 2.5	0.027	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	12.4		

2026

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.089	100	No
NOx	0.010	100	No
CO	0.299	100	No
SOx	0.004	100	No
PM 10	0.034	100	No
PM 2.5	0.027	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	12.4		

2027

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.089	100	No
NOx	0.010	100	No
CO	0.299	100	No
SOx	0.004	100	No
PM 10	0.034	100	No
PM 2.5	0.027	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	12.4		

2028

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.089	100	No
NOx	0.010	100	No
CO	0.299	100	No
SOx	0.004	100	No
PM 10	0.034	100	No
PM 2.5	0.027	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	12.4		

2029

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.089	100	No
NOx	0.010	100	No
CO	0.299	100	No
SOx	0.004	100	No
PM 10	0.034	100	No
PM 2.5	0.027	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	12.4		

2030

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.075	100	No
NOx	0.008	100	No
CO	0.249	100	No
SOx	0.003	100	No
PM 10	0.029	100	No
PM 2.5	0.022	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	10.3		

2031 (Steady State)

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.000	100	No
NOx	0.000	100	No
CO	0.000	100	No
SOx	0.000	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	0.0		

None of estimated emissions associated with this action are above the GCR indicators, indicating no significant impact to air quality; therefore, no further air assessment is needed.

Tim Sletten

Tim Sletten, Senior Environmental Scientist

01/31/2020
DATE

R-5306A and CORE MOA - LOW EMISSION SCENARIO

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 Instruction 32-7040, Air Quality Compliance And Resource Management; 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: SEYMOUR JOHNSON AFB
State: North Carolina
County(s): Carteret; Craven; Hyde; Pamlico
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Seymour Johnson AFB Combat Air Force Adversary Air

c. Project Number/s (if applicable): N/A

d. Projected Action Start Date: 11 / 2020

e. Action Description:

Seymour Johnson AFB does not have the capacity to host contracted ADAIR operations on-base; therefore, the Kinston Regional Jetport at Stallings Field (ISO) is being analyzed as suitable for possible use by a contract ADAIR service provider to support Seymour Johnson AFB operations. The proposed airfield is analyzed with the addition of an estimated 14 aircraft providing 2,720 annual training sorties. The analysis examines three separate emission scenarios: high, medium, and low. No significant construction is anticipated at this time as a result of the action. If it is later determined construction is required a separate environmental analysis would be completed as required.

f. Point of Contact:
Name: Tim Sletten
Title: Senior Environmental Scientist
Organization: Versar
Email: tsletten@versar.com
Phone Number: 301-728-4185

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

_____ applicable
__X__ not applicable

Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the "worst-case" and "steady state" (net gain/loss upon action fully implemented) emissions.

"Air Quality Indicators" were used to provide an indication of the significance of potential impacts to air quality. These air quality indicators are EPA General Conformity Rule (GCR) thresholds (de minimis levels) that are applied out of context to their intended use. Therefore, these indicators do not trigger a regulatory requirement; however, they provide a warning that the action is potentially significant. It is important to note that these indicators only provide a clue to the potential impacts to air quality.

Given the GCR de minimis threshold values are the maximum net change an action can acceptably emit in non-attainment and maintenance areas, these threshold values would also conservatively indicate an actions emissions within an attainment would also be acceptable. An air quality indicator value of 100 tons/yr is used based on the GCR de minimis threshold for the least severe non-attainment classification for all criteria pollutants (see 40 CFR 93.153). Therefore, the worst-case year emissions were compared against the GCR Indicator and are summarized below.

Analysis Summary:

2020

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.012	100	No
NOx	0.007	100	No
CO	0.133	100	No
SOx	0.003	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	10.0		

2021

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.074	100	No
NOx	0.043	100	No
CO	0.796	100	No
SOx	0.020	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	59.9		

2022

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.074	100	No
NOx	0.043	100	No
CO	0.796	100	No
SOx	0.020	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	59.9		

2023

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.074	100	No
NOx	0.043	100	No
CO	0.796	100	No
SOx	0.020	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	59.9		

2024

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.074	100	No
NOx	0.043	100	No
CO	0.796	100	No
SOx	0.020	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	59.9		

2025

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.074	100	No
NOx	0.043	100	No
CO	0.796	100	No
SOx	0.020	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	59.9		

2026

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.074	100	No
NOx	0.043	100	No
CO	0.796	100	No
SOx	0.020	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	59.9		

2027

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.074	100	No
NOx	0.043	100	No
CO	0.796	100	No
SOx	0.020	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	59.9		

2028

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.074	100	No
NOx	0.043	100	No
CO	0.796	100	No
SOx	0.020	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	59.9		

2029

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.074	100	No
NOx	0.043	100	No
CO	0.796	100	No
SOx	0.020	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	59.9		

2030

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.062	100	No
NOx	0.035	100	No
CO	0.663	100	No
SOx	0.016	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	49.9		

2031 (Steady State)

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.000	100	No
NOx	0.000	100	No
CO	0.000	100	No
SOx	0.000	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	0.0		

None of estimated emissions associated with this action are above the GCR indicators, indicating no significant impact to air quality; therefore, no further air assessment is needed.

Tim Sletten

Tim Sletten, Senior Environmental Scientist

01/31/2020
DATE

R-5314/PHELPS MOA - HIGH EMISSION SCENARIO

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 Instruction 32-7040, Air Quality Compliance And Resource Management; 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: SEYMOUR JOHNSON AFB
State: North Carolina
County(s): Hyde; Dare; Tyrrell; Washington
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Seymour Johnson AFB Combat Air Force Adversary Air

c. Project Number/s (if applicable): N/A

d. Projected Action Start Date: 11 / 2020

e. Action Description:

Seymour Johnson AFB does not have the capacity to host contracted ADAIR operations on-base; therefore, the Kinston Regional Jetport at Stallings Field (ISO) is being analyzed as suitable for possible use by a contract ADAIR service provider to support Seymour Johnson AFB operations. The proposed airfield is analyzed with the addition of an estimated 14 aircraft providing 2,720 annual training sorties. The analysis examines three separate emission scenarios: high, medium, and low. No significant construction is anticipated at this time as a result of the action. If it is later determined construction is required a separate environmental analysis would be completed as required.

f. Point of Contact:
Name: Tim Sletten
Title: Senior Environmental Scientist
Organization: Versar
Email: tsletten@versar.com
Phone Number: 301-728-4185

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

_____ applicable
__X__ not applicable

Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the "worst-case" and "steady state" (net gain/loss upon action fully implemented) emissions.

"Air Quality Indicators" were used to provide an indication of the significance of potential impacts to air quality. These air quality indicators are EPA General Conformity Rule (GCR) thresholds (de minimis levels) that are applied out of context to their intended use. Therefore, these indicators do not trigger a regulatory requirement; however, they provide a warning that the action is potentially significant. It is important to note that these indicators only provide a clue to the potential impacts to air quality.

Given the GCR de minimis threshold values are the maximum net change an action can acceptably emit in non-attainment and maintenance areas, these threshold values would also conservatively indicate an actions emissions within an attainment would also be acceptable. An air quality indicator value of 100 tons/yr is used based on the GCR de minimis threshold for the least severe non-attainment classification for all criteria pollutants (see 40 CFR 93.153). Therefore, the worst-case year emissions were compared against the GCR Indicator and are summarized below.

Analysis Summary:

2020

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.003	100	No
NOx	0.046	100	No
CO	0.014	100	No
SOx	0.005	100	No
PM 10	0.001	100	No
PM 2.5	0.001	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	14.6		

2021

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.018	100	No
NOx	0.274	100	No
CO	0.082	100	No
SOx	0.029	100	No
PM 10	0.004	100	No
PM 2.5	0.003	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	87.9		

2022

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.018	100	No
NOx	0.274	100	No
CO	0.082	100	No
SOx	0.029	100	No
PM 10	0.004	100	No
PM 2.5	0.003	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	87.9		

2023

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.018	100	No
NOx	0.274	100	No
CO	0.082	100	No
SOx	0.029	100	No
PM 10	0.004	100	No
PM 2.5	0.003	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	87.9		

2024

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.018	100	No
NOx	0.274	100	No
CO	0.082	100	No
SOx	0.029	100	No
PM 10	0.004	100	No
PM 2.5	0.003	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	87.9		

2025

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.018	100	No
NOx	0.274	100	No
CO	0.082	100	No
SOx	0.029	100	No
PM 10	0.004	100	No
PM 2.5	0.003	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	87.9		

2026

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.018	100	No
NOx	0.274	100	No
CO	0.082	100	No
SOx	0.029	100	No
PM 10	0.004	100	No
PM 2.5	0.003	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	87.9		

2027

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.018	100	No
NOx	0.274	100	No
CO	0.082	100	No
SOx	0.029	100	No
PM 10	0.004	100	No
PM 2.5	0.003	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	87.9		

2028

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.018	100	No
NOx	0.274	100	No
CO	0.082	100	No
SOx	0.029	100	No
PM 10	0.004	100	No
PM 2.5	0.003	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	87.9		

2029

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.018	100	No
NOx	0.274	100	No
CO	0.082	100	No
SOx	0.029	100	No
PM 10	0.004	100	No
PM 2.5	0.003	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	87.9		

2030

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.015	100	No
NOx	0.229	100	No
CO	0.068	100	No
SOx	0.024	100	No
PM 10	0.003	100	No
PM 2.5	0.003	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	73.2		

2031 (Steady State)

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.000	100	No
NOx	0.000	100	No
CO	0.000	100	No
SOx	0.000	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	0.0		

None of estimated emissions associated with this action are above the GCR indicators, indicating no significant impact to air quality; therefore, no further air assessment is needed.

Tim Sletten

Tim Sletten, Senior Environmental Scientist

01/31/2020
DATE

R-5314/PHELPS MOA - MEDIUM EMISSION SCENARIO

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 Instruction 32-7040, Air Quality Compliance And Resource Management; 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: SEYMOUR JOHNSON AFB
State: North Carolina
County(s): Hyde; Dare; Tyrrell; Washington
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Seymour Johnson AFB Combat Air Force Adversary Air

c. Project Number/s (if applicable): N/A

d. Projected Action Start Date: 11 / 2020

e. Action Description:

Seymour Johnson AFB does not have the capacity to host contracted ADAIR operations on-base; therefore, the Kinston Regional Jetport at Stallings Field (ISO) is being analyzed as suitable for possible use by a contract ADAIR service provider to support Seymour Johnson AFB operations. The proposed airfield is analyzed with the addition of an estimated 14 aircraft providing 2,720 annual training sorties. The analysis examines three separate emission scenarios: high, medium, and low. No significant construction is anticipated at this time as a result of the action. If it is later determined construction is required a separate environmental analysis would be completed as required.

f. Point of Contact:
Name: Tim Sletten
Title: Senior Environmental Scientist
Organization: Versar
Email: tsletten@versar.com
Phone Number: 301-728-4185

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

_____ applicable
__X__ not applicable

Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the "worst-case" and "steady state" (net gain/loss upon action fully implemented) emissions.

"Air Quality Indicators" were used to provide an indication of the significance of potential impacts to air quality. These air quality indicators are EPA General Conformity Rule (GCR) thresholds (de minimis levels) that are applied out of context to their intended use. Therefore, these indicators do not trigger a regulatory requirement; however, they provide a warning that the action is potentially significant. It is important to note that these indicators only provide a clue to the potential impacts to air quality.

Given the GCR de minimis threshold values are the maximum net change an action can acceptably emit in non-attainment and maintenance areas, these threshold values would also conservatively indicate an actions emissions within an attainment would also be acceptable. An air quality indicator value of 100 tons/yr is used based on the GCR de minimis threshold for the least severe non-attainment classification for all criteria pollutants (see 40 CFR 93.153). Therefore, the worst-case year emissions were compared against the GCR Indicator and are summarized below.

Analysis Summary:

2020

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.023	100	No
NOx	0.003	100	No
CO	0.075	100	No
SOx	0.001	100	No
PM 10	0.009	100	No
PM 2.5	0.007	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	3.1		

2021

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.135	100	No
NOx	0.015	100	No
CO	0.451	100	No
SOx	0.006	100	No
PM 10	0.052	100	No
PM 2.5	0.040	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	18.7		

2022

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.135	100	No
NOx	0.015	100	No
CO	0.451	100	No
SOx	0.006	100	No
PM 10	0.052	100	No
PM 2.5	0.040	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	18.7		

2023

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.135	100	No
NOx	0.015	100	No
CO	0.451	100	No
SOx	0.006	100	No
PM 10	0.052	100	No
PM 2.5	0.040	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	18.7		

2024

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.135	100	No
NOx	0.015	100	No
CO	0.451	100	No
SOx	0.006	100	No
PM 10	0.052	100	No
PM 2.5	0.040	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	18.7		

2025

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.135	100	No
NOx	0.015	100	No
CO	0.451	100	No
SOx	0.006	100	No
PM 10	0.052	100	No
PM 2.5	0.040	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	18.7		

2026

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.135	100	No
NOx	0.015	100	No
CO	0.451	100	No
SOx	0.006	100	No
PM 10	0.052	100	No
PM 2.5	0.040	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	18.7		

2027

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.135	100	No
NOx	0.015	100	No
CO	0.451	100	No
SOx	0.006	100	No
PM 10	0.052	100	No
PM 2.5	0.040	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	18.7		

2028

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.135	100	No
NOx	0.015	100	No
CO	0.451	100	No
SOx	0.006	100	No
PM 10	0.052	100	No
PM 2.5	0.040	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	18.7		

2029

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.135	100	No
NOx	0.015	100	No
CO	0.451	100	No
SOx	0.006	100	No
PM 10	0.052	100	No
PM 2.5	0.040	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	18.7		

2030

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.113	100	No
NOx	0.013	100	No
CO	0.376	100	No
SOx	0.005	100	No
PM 10	0.043	100	No
PM 2.5	0.034	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	15.6		

2031 (Steady State)

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.000	100	No
NOx	0.000	100	No
CO	0.000	100	No
SOx	0.000	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	0.0		

None of estimated emissions associated with this action are above the GCR indicators, indicating no significant impact to air quality; therefore, no further air assessment is needed.

Tim Sletten

Tim Sletten, Senior Environmental Scientist

01/31/2020
DATE

R-5314/PHELPS MOA - LOW EMISSION SCENARIO

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 Instruction 32-7040, Air Quality Compliance And Resource Management; 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: SEYMOUR JOHNSON AFB
State: North Carolina
County(s): Hyde; Dare; Tyrrell; Washington
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Seymour Johnson AFB Combat Air Force Adversary Air

c. Project Number/s (if applicable): N/A

d. Projected Action Start Date: 11 / 2020

e. Action Description:

Seymour Johnson AFB does not have the capacity to host contracted ADAIR operations on-base; therefore, the Kinston Regional Jetport at Stallings Field (ISO) is being analyzed as suitable for possible use by a contract ADAIR service provider to support Seymour Johnson AFB operations. The proposed airfield is analyzed with the addition of an estimated 14 aircraft providing 2,720 annual training sorties. The analysis examines three separate emission scenarios: high, medium, and low. No significant construction is anticipated at this time as a result of the action. If it is later determined construction is required a separate environmental analysis would be completed as required.

f. Point of Contact:
Name: Tim Sletten
Title: Senior Environmental Scientist
Organization: Versar
Email: tsletten@versar.com
Phone Number: 301-728-4185

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

_____ applicable
__X__ not applicable

Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the "worst-case" and "steady state" (net gain/loss upon action fully implemented) emissions.

"Air Quality Indicators" were used to provide an indication of the significance of potential impacts to air quality. These air quality indicators are EPA General Conformity Rule (GCR) thresholds (de minimis levels) that are applied out of context to their intended use. Therefore, these indicators do not trigger a regulatory requirement; however, they provide a warning that the action is potentially significant. It is important to note that these indicators only provide a clue to the potential impacts to air quality.

Given the GCR de minimis threshold values are the maximum net change an action can acceptably emit in non-attainment and maintenance areas, these threshold values would also conservatively indicate an actions emissions within an attainment would also be acceptable. An air quality indicator value of 100 tons/yr is used based on the GCR de minimis threshold for the least severe non-attainment classification for all criteria pollutants (see 40 CFR 93.153). Therefore, the worst-case year emissions were compared against the GCR Indicator and are summarized below.

Analysis Summary:

2020

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.019	100	No
NOx	0.011	100	No
CO	0.200	100	No
SOx	0.005	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	15.1		

2021

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.113	100	No
NOx	0.064	100	No
CO	1.202	100	No
SOx	0.030	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	90.4		

2022

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.113	100	No
NOx	0.064	100	No
CO	1.202	100	No
SOx	0.030	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	90.4		

2023

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.113	100	No
NOx	0.064	100	No
CO	1.202	100	No
SOx	0.030	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	90.4		

2024

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.113	100	No
NOx	0.064	100	No
CO	1.202	100	No
SOx	0.030	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	90.4		

2025

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.113	100	No
NOx	0.064	100	No
CO	1.202	100	No
SOx	0.030	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	90.4		

2026

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.113	100	No
NOx	0.064	100	No
CO	1.202	100	No
SOx	0.030	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	90.4		

2027

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.113	100	No
NOx	0.064	100	No
CO	1.202	100	No
SOx	0.030	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	90.4		

2028

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.113	100	No
NOx	0.064	100	No
CO	1.202	100	No
SOx	0.030	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	90.4		

2029

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.113	100	No
NOx	0.064	100	No
CO	1.202	100	No
SOx	0.030	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	90.4		

2030

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.094	100	No
NOx	0.054	100	No
CO	1.002	100	No
SOx	0.025	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	75.3		

2031 (Steady State)

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.000	100	No
NOx	0.000	100	No
CO	0.000	100	No
SOx	0.000	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	0.0		

None of estimated emissions associated with this action are above the GCR indicators, indicating no significant impact to air quality; therefore, no further air assessment is needed.

Tim Sletten

Tim Sletten, Senior Environmental Scientist

01/31/2020
DATE

W-177, W-161, W-72 - HIGH EMISSION SCENARIO

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 Instruction 32-7040, Air Quality Compliance And Resource Management; 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: SEYMOUR JOHNSON AFB
State: North Carolina
County(s): Wayne
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Seymour Johnson AFB Combat Air Force Adversary Air

c. Project Number/s (if applicable): N/A

d. Projected Action Start Date: 11 / 2020

e. Action Description:

Seymour Johnson AFB does not have the capacity to host contracted ADAIR operations on-base; therefore, the Kinston Regional Jetport at Stallings Field (ISO) is being analyzed as suitable for possible use by a contract ADAIR service provider to support Seymour Johnson AFB operations. The proposed airfield is analyzed with the addition of an estimated 14 aircraft providing 2,720 annual training sorties. The analysis examines three separate emission scenarios: high, medium, and low. No significant construction is anticipated at this time as a result of the action. If it is later determined construction is required a separate environmental analysis would be completed as required.

f. Point of Contact:
Name: Tim Sletten
Title: Senior Environmental Scientist
Organization: Versar
Email: tsletten@versar.com
Phone Number: 301-728-4185

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

_____ applicable
__X__ not applicable

Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the "worst-case" and "steady state" (net gain/loss upon action fully implemented) emissions.

"Air Quality Indicators" were used to provide an indication of the significance of potential impacts to air quality. These air quality indicators are EPA General Conformity Rule (GCR) thresholds (de minimis levels) that are applied out of context to their intended use. Therefore, these indicators do not trigger a regulatory requirement; however, they provide a warning that the action is potentially significant. It is important to note that these indicators only provide a clue to the potential impacts to air quality.

Given the GCR de minimis threshold values are the maximum net change an action can acceptably emit in non-attainment and maintenance areas, these threshold values would also conservatively indicate an actions emissions within an attainment would also be acceptable. An air quality indicator value of 100 tons/yr is used based on the GCR de minimis threshold for the least severe non-attainment classification for all criteria pollutants (see 40 CFR 93.153). Therefore, the worst-case year emissions were compared against the GCR Indicator and are summarized below.

Analysis Summary:

2020

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.004	100	No
NOx	0.061	100	No
CO	0.018	100	No
SOx	0.006	100	No
PM 10	0.001	100	No
PM 2.5	0.001	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	19.6		

2021

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.024	100	No
NOx	0.367	100	No
CO	0.109	100	No
SOx	0.039	100	No
PM 10	0.005	100	No
PM 2.5	0.004	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	117.6		

2022

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.024	100	No
NOx	0.367	100	No
CO	0.109	100	No
SOx	0.039	100	No
PM 10	0.005	100	No
PM 2.5	0.004	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	117.6		

2023

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.024	100	No
NOx	0.367	100	No
CO	0.109	100	No
SOx	0.039	100	No
PM 10	0.005	100	No
PM 2.5	0.004	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	117.6		

2024

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.024	100	No
NOx	0.367	100	No
CO	0.109	100	No
SOx	0.039	100	No
PM 10	0.005	100	No
PM 2.5	0.004	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	117.6		

2025

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.024	100	No
NOx	0.367	100	No
CO	0.109	100	No
SOx	0.039	100	No
PM 10	0.005	100	No
PM 2.5	0.004	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	117.6		

2026

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.024	100	No
NOx	0.367	100	No
CO	0.109	100	No
SOx	0.039	100	No
PM 10	0.005	100	No
PM 2.5	0.004	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	117.6		

2027

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.024	100	No
NOx	0.367	100	No
CO	0.109	100	No
SOx	0.039	100	No
PM 10	0.005	100	No
PM 2.5	0.004	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	117.6		

2028

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.024	100	No
NOx	0.367	100	No
CO	0.109	100	No
SOx	0.039	100	No
PM 10	0.005	100	No
PM 2.5	0.004	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	117.6		

2029

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.024	100	No
NOx	0.367	100	No
CO	0.109	100	No
SOx	0.039	100	No
PM 10	0.005	100	No
PM 2.5	0.004	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	117.6		

2030

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.020	100	No
NOx	0.306	100	No
CO	0.091	100	No
SOx	0.032	100	No
PM 10	0.004	100	No
PM 2.5	0.004	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	98.0		

2031 (Steady State)

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.000	100	No
NOx	0.000	100	No
CO	0.000	100	No
SOx	0.000	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	0.0		

None of estimated emissions associated with this action are above the GCR indicators, indicating no significant impact to air quality; therefore, no further air assessment is needed.

Tim Sletten

Tim Sletten, Senior Environmental Scientist

01/31/2020
DATE

W-177, W-161, W-72 - MEDIUM EMISSION SCENARIO

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 Instruction 32-7040, Air Quality Compliance And Resource Management; 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: SEYMOUR JOHNSON AFB
State: North Carolina
County(s): Wayne
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Seymour Johnson AFB Combat Air Force Adversary Air

c. Project Number/s (if applicable): N/A

d. Projected Action Start Date: 11 / 2020

e. Action Description:

Seymour Johnson AFB does not have the capacity to host contracted ADAIR operations on-base; therefore, the Kinston Regional Jetport at Stallings Field (ISO) is being analyzed as suitable for possible use by a contract ADAIR service provider to support Seymour Johnson AFB operations. The proposed airfield is analyzed with the addition of an estimated 14 aircraft providing 2,720 annual training sorties. The analysis examines three separate emission scenarios: high, medium, and low. No significant construction is anticipated at this time as a result of the action. If it is later determined construction is required a separate environmental analysis would be completed as required.

f. Point of Contact:

Name: Tim Sletten
Title: Senior Environmental Scientist
Organization: Versar
Email: tsletten@versar.com
Phone Number: 301-728-4185

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

_____ applicable
__X__ not applicable

Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the "worst-case" and "steady state" (net gain/loss upon action fully implemented) emissions.

"Air Quality Indicators" were used to provide an indication of the significance of potential impacts to air quality. These air quality indicators are EPA General Conformity Rule (GCR) thresholds (de minimis levels) that are applied out of context to their intended use. Therefore, these indicators do not trigger a regulatory requirement; however, they provide a warning that the action is potentially significant. It is important to note that these indicators only provide a clue to the potential impacts to air quality.

Given the GCR de minimis threshold values are the maximum net change an action can acceptably emit in non-attainment and maintenance areas, these threshold values would also conservatively indicate an actions emissions within an attainment would also be acceptable. An air quality indicator value of 100 tons/yr is used based on the GCR de minimis threshold for the least severe non-attainment classification for all criteria pollutants (see 40 CFR 93.153). Therefore, the worst-case year emissions were compared against the GCR Indicator and are summarized below.

Analysis Summary:

2020

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.030	100	No
NOx	0.003	100	No
CO	0.101	100	No
SOx	0.001	100	No
PM 10	0.012	100	No
PM 2.5	0.009	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	4.2		

2021

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.181	100	No
NOx	0.020	100	No
CO	0.604	100	No
SOx	0.008	100	No
PM 10	0.069	100	No
PM 2.5	0.054	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	25.0		

2022

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.181	100	No
NOx	0.020	100	No
CO	0.604	100	No
SOx	0.008	100	No
PM 10	0.069	100	No
PM 2.5	0.054	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	25.0		

2023

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.181	100	No
NOx	0.020	100	No
CO	0.604	100	No
SOx	0.008	100	No
PM 10	0.069	100	No
PM 2.5	0.054	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	25.0		

2024

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.181	100	No
NOx	0.020	100	No
CO	0.604	100	No
SOx	0.008	100	No
PM 10	0.069	100	No
PM 2.5	0.054	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	25.0		

2025

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.181	100	No
NOx	0.020	100	No
CO	0.604	100	No
SOx	0.008	100	No
PM 10	0.069	100	No
PM 2.5	0.054	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	25.0		

2026

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.181	100	No
NOx	0.020	100	No
CO	0.604	100	No
SOx	0.008	100	No
PM 10	0.069	100	No
PM 2.5	0.054	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	25.0		

2027

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.181	100	No
NOx	0.020	100	No
CO	0.604	100	No
SOx	0.008	100	No
PM 10	0.069	100	No
PM 2.5	0.054	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	25.0		

2028

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.181	100	No
NOx	0.020	100	No
CO	0.604	100	No
SOx	0.008	100	No
PM 10	0.069	100	No
PM 2.5	0.054	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	25.0		

2029

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.181	100	No
NOx	0.020	100	No
CO	0.604	100	No
SOx	0.008	100	No
PM 10	0.069	100	No
PM 2.5	0.054	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	25.0		

2030

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.151	100	No
NOx	0.017	100	No
CO	0.503	100	No
SOx	0.007	100	No
PM 10	0.058	100	No
PM 2.5	0.045	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	20.9		

2031 (Steady State)

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.000	100	No
NOx	0.000	100	No
CO	0.000	100	No
SOx	0.000	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	0.0		

None of estimated emissions associated with this action are above the GCR indicators, indicating no significant impact to air quality; therefore, no further air assessment is needed.

Tim Sletten

Tim Sletten, Senior Environmental Scientist

01/31/2020
DATE

W-177, W-161, W-72 - LOW EMISSION SCENARIO

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 Instruction 32-7040, Air Quality Compliance And Resource Management; 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: SEYMOUR JOHNSON AFB
State: North Carolina
County(s): Wayne
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Seymour Johnson AFB Combat Air Force Adversary Air

c. Project Number/s (if applicable): N/A

d. Projected Action Start Date: 11 / 2020

e. Action Description:

Seymour Johnson AFB does not have the capacity to host contracted ADAIR operations on-base; therefore, the Kinston Regional Jetport at Stallings Field (ISO) is being analyzed as suitable for possible use by a contract ADAIR service provider to support Seymour Johnson AFB operations. The proposed airfield is analyzed with the addition of an estimated 14 aircraft providing 2,720 annual training sorties. The analysis examines three separate emission scenarios: high, medium, and low. No significant construction is anticipated at this time as a result of the action. If it is later determined construction is required a separate environmental analysis would be completed as required.

f. Point of Contact:

Name: Tim Sletten
Title: Senior Environmental Scientist
Organization: Versar
Email: tsletten@versar.com
Phone Number: 301-728-4185

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

_____ applicable
__X__ not applicable

Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the "worst-case" and "steady state" (net gain/loss upon action fully implemented) emissions.

"Air Quality Indicators" were used to provide an indication of the significance of potential impacts to air quality. These air quality indicators are EPA General Conformity Rule (GCR) thresholds (de minimis levels) that are applied out of context to their intended use. Therefore, these indicators do not trigger a regulatory requirement; however, they provide a warning that the action is potentially significant. It is important to note that these indicators only provide a clue to the potential impacts to air quality.

Given the GCR de minimis threshold values are the maximum net change an action can acceptably emit in non-attainment and maintenance areas, these threshold values would also conservatively indicate an actions emissions within an attainment would also be acceptable. An air quality indicator value of 100 tons/yr is used based on the GCR de minimis threshold for the least severe non-attainment classification for all criteria pollutants (see 40 CFR 93.153). Therefore, the worst-case year emissions were compared against the GCR Indicator and are summarized below.

Analysis Summary:

2020

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.025	100	No
NOx	0.014	100	No
CO	0.268	100	No
SOx	0.007	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	20.2		

2021

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.151	100	No
NOx	0.086	100	No
CO	1.608	100	No
SOx	0.040	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	120.9		

2022

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.151	100	No
NOx	0.086	100	No
CO	1.608	100	No
SOx	0.040	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	120.9		

2023

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.151	100	No
NOx	0.086	100	No
CO	1.608	100	No
SOx	0.040	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	120.9		

2024

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.151	100	No
NOx	0.086	100	No
CO	1.608	100	No
SOx	0.040	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	120.9		

2025

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.151	100	No
NOx	0.086	100	No
CO	1.608	100	No
SOx	0.040	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	120.9		

2026

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.151	100	No
NOx	0.086	100	No
CO	1.608	100	No
SOx	0.040	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	120.9		

2027

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.151	100	No
NOx	0.086	100	No
CO	1.608	100	No
SOx	0.040	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	120.9		

2028

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.151	100	No
NOx	0.086	100	No
CO	1.608	100	No
SOx	0.040	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	120.9		

2029

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.151	100	No
NOx	0.086	100	No
CO	1.608	100	No
SOx	0.040	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	120.9		

2030

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.125	100	No
NOx	0.072	100	No
CO	1.340	100	No
SOx	0.033	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	100.8		

2031 (Steady State)

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.000	100	No
NOx	0.000	100	No
CO	0.000	100	No
SOx	0.000	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	0.0		

None of estimated emissions associated with this action are above the GCR indicators, indicating no significant impact to air quality; therefore, no further air assessment is needed.

Tim Sletten

Tim Sletten, Senior Environmental Scientist

01/31/2020
DATE

APPENDIX D

LISTED SPECIES POTENTIALLY OCCURRING IN THE ACTION AREA

This page intentionally left blank

THREATENED AND ENDANGERED SPECIES AND/OR SPECIES OF CONCERN

A list of species that could potentially occur in the Region of Influence (ROI) was obtained from the United States Fish and Wildlife (USFWS) Information for Planning and Consultation (IPAC) website (USFWS, 2020a), USFWS Environmental Conservation Online System (USFWS 2020b), National Marine Fisheries Service (NMFS) Listed Species Lists and Section 7 Species Mapper (NMFS, 2019a; NOAA, 2019), North Carolina Natural Heritage Program (NCNHP, 2020), and Virginia Department of Game and Inland Fisheries (VDGIF, 2018) and is provided in **Table D-1**.

Federally endangered and threatened species that could occur beneath the overland special use airspace are under the jurisdiction of the USFWS, except for the sea turtles. Sea turtles are under the jurisdiction of the NMFS when in the water; however, they fall under the jurisdiction of the USFWS when they occur on land (e.g., nesting turtles and nests). Federally endangered and threatened marine species protected under the Endangered Species Act that could occur in the offshore environment in the Warning Areas are managed by NMFS, while avian species are managed by USFWS.

A total of 197 federally and/or state listed species were identified with the potential to be within the Proposed Action area (see **Table D-1**). Forty-two of these species are federally listed as threatened, endangered, or proposed for listing, and one is classified as an experimental population under the Endangered Species Act. Of these federally listed species, seven birds, four marine fish, eight mammals, and five sea turtles have the potential to be impacted from aircraft operations at ISO, overflights within special use airspace, or the use of chaff and flare in the Warning Areas. The federally listed species with the potential to be impacted from the Proposed Action are described below. The other species would not be impacted from the Proposed Action; however, if construction is needed in the future, additional assessment of additional species may be needed.

Birds

Bermuda Petrel. The Bermuda petrel (*Pterodroma cahow*) is the rarest of the gadfly petrels of the North Atlantic Ocean and was presumed extinct until the early twentieth century (USFWS, 2018). It is a nocturnal pelagic seabird known to nest in only five small inlets in Castle Harbor, Bermuda. The Bermuda petrel feeds at the sea surface on small squid, shrimp, and small fish and primarily feeds at night to avoid predation. The Bermuda petrel has been observed off the coast of North Carolina in deep offshore waters and could be present in the airspace under all the Warning Areas. It likely feeds in warm Gulf Stream waters off of North Carolina during the nonbreeding season (US Navy, 2009).

Red-Cockaded Woodpecker. The red-cockaded woodpecker (*Picoides borealis*) (RCW) typically occupies open, mature stands of southern pines, particularly longleaf pine (*Pinus palustris*), for foraging and nesting/roosting habitat (NCNHP, 2020). The RCW excavates cavities for nesting and roosting in living pine trees, aged 60 years or older, which are contiguous with pine stands at least 30 years of age to provide foraging habitat. No habitat in the form of open pine stands will occur at ISO due to the current land use.

Eastern Black Rail. The eastern black rail (*Laterallus jamaicensis*) is a small, secretive bird found in coastal marshes or the uplands around marshes (USFWS, 2019a). The diet of the eastern black rail is believed to include terrestrial invertebrates, as well as small seeds. The eastern black rail could be present in the airspace under the under the Burner Air Traffic Control Assigned Airspace (ATCAA)/Hatteras ATCAA/Pamlico Military Operations Area (MOA) Complex, R-5306A/Core MOA Complex, and the R-5314/Phelps MOA Complex. The eastern black rail could be present in the airspace under all the Warning Areas during periods of migration.

Piping Plover. Piping plover (*Charadrius melodus*) habitat includes sand and/or mud flats with no or very sparse emergent vegetation. Adjacent unvegetated or sparsely vegetated sand, mud, or algal flats above high tide are also essential, especially for roosting piping plovers (USFWS, 2019a). Essential components of the beach/dune ecosystem include surf-cast algae for feeding on prey, sparsely vegetated back beach for roosting and refuge during storms, spits for feeding and roosting, salterns, and wash over areas for

feeding and roosting. Wash over areas are broad, unvegetated zones with little or no topographic relief that are formed and maintained by the action of hurricanes, storm surge, or other extreme wave action. Critical habitat is present in the Burner ATCAA/Hatteras ATCAA/Pamlico MOA Complex and the R-5306A/Core MOA Complex (**Figure D-1**). The piping plover could also be present in the airspace under the under the Burner ATCAA/Hatteras ATCAA/Pamlico MOA Complex, R-5306A/Core MOA Complex, and the R-5314/Phelps MOA Complex. The piping plover could be present in the airspace under all the Warning Areas during periods of migration.

Red Knot. The red knot (*Calidris canutus rufa*) is a large sandpiper with short thick legs, a reddish breast and head during breeding season, and gray plumage during the rest of the year (USFWS, 2019a). It is one of the longest-distance migrants, with some birds flying over 9,300 miles from breeding to wintering grounds. The red knot breeds in the Arctic tundra and winters along the southern tip of South America. The primary threat to this species is climate change, where rising sea heights affect its coastal breeding habitat, affecting the ability to forage. The red knot could be present in coastal North Carolina and over the airspace areas during migration periods; therefore, the red knot could be present in the action area. The red knot could be present in the airspace under the under the Burner ATCAA/Hatteras ATCAA/Pamlico MOA Complex, R-5306A/Core MOA Complex, or the R-5314/Phelps MOA Complex. The red knot could also be present in the airspace under all the Warning Areas during periods of migration.

Roseate Tern. The roseate tern (*Sterna dougallii*) is listed as endangered in portions of its range from Canada south to North Carolina across its breeding habitat (USFWS 2019a). In nonbreeding locations across the Western Hemisphere, such as the oceans adjacent to breeding habitat (which includes the Warning Areas), the roseate tern is listed as threatened. The roseate tern feeds on small, schooling fish which are captured by plunge-diving from the air into the water. Northern breeding populations migrate to wintering grounds in the Caribbean off the Atlantic Coast. The rosette tern could be present in the airspace under the under the Burner ATCAA/Hatteras ATCAA/Pamlico MOA Complex, R-5306A/Core MOA Complex, or the R-5314/Phelps MOA Complex. The red knot could also be present in the airspace under all the Warning Areas during periods of migration.

Wood stork. Wood storks (*Mycteria americana)* are known to occur in several coastal North Carolina counties (USFWS, 2019a). Wood storks typically construct their nests in medium to tall trees that occur in stands located either in swamps or on islands surrounded by relatively broad expanses of open water. During the nonbreeding season or while foraging, wood storks occur in a wide variety of wetland habitats, including freshwater marshes and stock ponds, shallow, seasonally flooded roadside or agricultural ditches, narrow tidal creeks or shallow tidal pools, managed impoundments, and depressions in cypress heads and swamp sloughs. Wood storks can be found under the Gamecock A MOA and Seymour Johnson Echo MOA.

Fish

Atlantic Sturgeon. The Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) occurs in rivers and coastal waters from Canada to Florida (NMFS, 2019a). Atlantic sturgeon are anadromous; they are hatched in the freshwater of rivers, head to sea as juveniles, and return to their birthplace to spawn, or lay eggs, when they reach adulthood. Atlantic sturgeon are slow-growing and late-maturing and have been recorded to reach up to 16 feet (ft) in length and up to 60 years of age. Critical Habitat is present in waters found under the Burner ATCAA/Hatteras ATCAA/Pamlico MOA Complex, R-5306A/Core MOA Complex, Gamecock MOA, and Seymour Johnson Echo MOA as well as the in the waters under all the Warning Areas (NMFS, 2019a; USFWS, 2020a) (**Figure D-1**).

Shortnose Sturgeon. The shortnose sturgeon (*Acipenser brevirostrum*) is federally endangered throughout its range. The shortnose sturgeon lives in rivers and coastal waters from Canada to Florida (NMFS, 2019a). They are amphidromous fish; they are hatched in freshwater of rivers and spend most of their time in the estuaries of these rivers. Unlike the Atlantic sturgeon, the shortnose sturgeon spends relatively little time in the ocean and generally remains close to shore. In the spring, adults move far upstream and away from saltwater to spawn. After spawning, the adults move downstream to estuaries. The shortnose sturgeon could be found year-round Burner ATCAA/Hatteras ATCAA/Pamlico MOA

Complex, R-5306A/Core MOA Complex, and the R-5314/Phelps MOA Complex as well as the in the waters under all the Warning Areas during the brief feeding trips into saltwater (NMFS, 2019a; USFWS, 2020a).

Oceanic Whitetip Shark. The oceanic whitetip shark (*Carcharhinus longimanus*) is typically found near the ocean surface in offshore warm waters and distributed worldwide (NMFS, 2019a; USFWS, 2019b). Diet includes bony fish, stingrays, sea turtles, sea birds, gastropods, squid, crustaceans, mammalian carrion, and garbage. Threats to the whitetip shark include bycatch from commercial fishing and shark fin trade. Oceanic white tip sharks are found throughout the world on the outer continental shelf with a minimum depth of 600 ft, including waters found under all the offshore Warning Areas year-round.

Giant Manta Ray. The giant manta ray (*Manta birostris*) is a migratory animal with a large, diamond-shaped body (NMFS, 2019a; USFWS, 2019b). They are found in a variety of habitats worldwide including rock and coral reefs, sandy bottoms, seagrass beds, nearshore, and offshore. Threats to the giant manta ray include bycatch. The giant manta ray could be found year-round in the Burner ATCAA/Hatteras ATCAA/Pamlico MOA Complex, R-5306A/Core MOA Complex, and the R-5314/Phelps MOA Complex as well as the waters under all the Warning Areas.

Mammals

Northern Long-Eared Bat. In western North Carolina and Virginia, the northern long-eared bat (*Myotis septentrionalis*) (NLEB) spend winter hibernating in caves and mines. Since this species is not known to be a long-distance migrant, and caves and subterranean mines are extremely rare in eastern North Carolina and Virginia, it is uncertain whether or where NLEB hibernate in eastern portions of the states. During the summer, NLEB roost singly or in colonies underneath bark, in cavities, or in crevices of both live and dead trees (typically ≥3 inches in diameter at breast height). Males and nonreproductive females may also roost in cooler places, like caves and mines. This bat has also been found, rarely, roosting in structures like barns and sheds, under eaves of buildings, behind window shutters, in bridges, and in bat houses. Foraging occurs on forested hillsides and ridges and occasionally over forest clearings, over water, and along tree-lined corridors. Mature forests may be an important habitat type for foraging. No clearing activities are planned beneath overland airspace, and therefore there would be no impact to NLEB habitat.

Gray Bat. The gray bat (*Myotis grisescens*) typically roost in caves year-round (USFWS, 2020b). Wintering caves are commonly hundreds of kilometers from their summer range, although in some areas the same caves are used for winter hibernacula and summer maternity roosts. Foraging generally occurs parallel to streams, and forest areas adjacent to streams and lakes provide important habitat for adult and young bats. While the gray bat is mainly found in Alabama, northern Arkansas, Kentucky, Missouri, and Tennessee, it also occurs in other states including Appomattox County, Virginia, which is within the Farmville MOA.

West Indian Manatee. West Indian manatees (*Trichechus manatus*) are large, aquatic mammals protected under the Marine Mammal Protection Act (USFWS, 2019a). Manatees are primarily herbivorous, feeding on any aquatic vegetation present, but they may occasionally feed on fish. Manatees are found in marine, brackish, and freshwater systems near shorelines with underwater vegetation including the waters under the offshore Warning Areas and Burner ATCAA/Hatteras ATCAA/Pamlico MOA Complex, R-5306A/Core MOA Complex, and the R-5314/Phelps MOA Complex.

Blue Whale. The blue whale (*Balaenoptera musculus*) is a baleen whale that occurs globally and the largest animal to have ever lived on Earth (NMFS, 2019a). Blue whales can reach nearly 90 ft in length. Females are slightly larger than males. The blue whale feeds primarily on krill and feeds by gulping. Blue whales are found in all oceans except for the Arctic Ocean. Blue whale's range in the North Atlantic Ocean includes the continental shelf waters from Greenland to the subtropics, including the majority of all the offshore Warning Areas under consideration. The blue whale is migratory and could be found year-round in the waters under all the offshore Warning Areas.

Fin Whale. The fin whale (*Balaenoptera physalus*) is the second largest whale species and feeds by gulping a wide variety of organisms including small schooling fish, squid, and crustaceans (including krill) (NMFS, 2019a). Fin whales are migratory and travel from the Artic to Antarctic during summer months and use the

tropical waters for breeding and calving during the winter months. The fin whale uses the deep, offshore, open seas for habitat and the exact migration patterns are not known. Due to the migratory nature of the fin whale, it could be found year-round in the waters under all the offshore Warning Areas.

North Atlantic Right Whale. The North Atlantic right whale (*Eubalaena glacialis*) is one of the world's most endangered large whales with approximately 400 North Atlantic right whales in the North Atlantic Ocean (NMFS, 2019a, 2019b). They primarily feed on zooplankton, particularly large calanoid copepods such as *Calanus*. They currently occur primarily in North Atlantic coastal waters or close to the continental shelf ranging from Nova Scotia, Canada, south to Florida. Critical Habitat for the North Atlantic right whale is present under Warning Areas W-161 and W-177 (**Figure D-1**). The North Atlantic right whale could be found in the waters under all the offshore Warning Areas year-round.

Sei Whale. The major prey species for the sei whale (*Balaenoptera boreali*) in the North Atlantic are copepods and krill (NMFS, 2019a). Sei whales occur in very low population numbers across the North Atlantic Ocean. They typically occur in deep, oceanic waters of the cool temperate zone and prefer regions of steep bathymetric relief, such as the continental shelf break, canyons, or basins between banks and ledges. The sei whale is migratory and could be found year-round in the waters under the Warning Areas.

Sperm Whale. The sperm whale (*Physeter microcephalus*) is the largest of the toothed whales and preys on large, mesopelagic squids and other cephalopods, demersal fish, and benthic invertebrates (NMFS, 2019a). Sperm whales are globally distributed and occur in deep offshore waters including the waters under all the offshore Warning Areas year-round.

Sea Turtles

Green Turtle. The green turtle (*Chelonia mydas*) diet consists mostly of seagrasses and algae. Green sea turtles are known to occur in nearshore areas as well as bays, lagoons, reefs, and areas with seagrass beds (US Navy, 2018). Green turtles could be found year-round in the waters under the offshore Warning Areas (NMFS, 2019a). The green turtle could also be found near the waters found under the Burner ATCAA/Hatteras ATCAA/Pamlico MOA Complex, R-5306A/Core MOA Complex, and the R-5314/Phelps MOA Complex and Warning Areas year-round or on the beaches during the nesting season from spring to early summer.

Leatherback Turtle. The leatherback turtle (*Dermochelys coriacea*) is the largest and deepest-diving sea turtle. Leatherback turtles feed throughout the epipelagic and into the mesopelagic zones of the water column on gelatinous zooplankton such as cnidarians (jellyfish and siphonophores) and tunicates (salps and pyrosomas) (US Navy, 2018). The leatherback turtle and could be found year-round in the waters under the offshore Warning Areas (NMFS, 2019a). The leatherback turtle could also use the beaches found under the Burner ATCAA/Hatteras ATCAA/Pamlico MOA Complex, R-5306A/Core MOA Complex, and the R-5314/Phelps MOA Complex year-round and more commonly during the nesting months of March to July (USFWS, 2020a).

Loggerhead Turtle. Loggerhead turtles (*Caretta caretta*) are the most abundant species of sea turtle found in United States coastal waters and inhabit offshore waters in the North Atlantic Ocean (US Navy, 2018; NMFS, 2019a). Their diet primarily consists of whelks and conch. Loggerhead turtles are circumglobal, occurring throughout the temperate and tropical regions of the Atlantic, Pacific, and Indian Oceans. Critical Habitat is present along the beaches found under the Burner ATCAA/Hatteras ATCAA/Pamlico MOA Complex and the R-5306A/Core MOA Complex (USFWS, 2020a) (**Figure D-1**). Critical habitat is also found in the waters under Warning Areas W-72, W-122, and W-161 (NMFS, 2019a). The loggerhead turtle could also be found in the ocean under the Burner ATCAA/Hatteras ATCAA/Pamlico MOA Complex, R-5306A/Core MOA Complex, and the R-5314/Phelps MOA Complex and Warning Areas year-round.

Kemp's Ridley Turtle. The Kemp's ridley turtle (*Lepidochelys kempii*) is the smallest sea turtle and the only sea turtle that primarily nests during daylight hours. Their diet primarily consists of shrimp, jellies, small fish, and mollusks. Kemp's ridley turtles primarily nest in the western Gulf of Mexico but have been observed nesting in North Carolina and Virginia (US Navy, 2018). Kemp's ridley sea turtles could be found year-round in the waters under all offshore Warning Areas. The Kemp's ridley turtle could also be found in the waters

under the Burner ATCAA/Hatteras ATCAA/Pamlico MOA Complex, R-5306A/Core MOA Complex, and R-5314/Phelps MOA Complex year-round or on the beaches during the nesting season from spring to early summer (NMFS, 2019a).

Hawksbill Turtle. The hawksbill turtle (*Eretmochelys imbricata*) is a small- to medium-sized sea turtle, has the longest measured dive times of any sea turtle. They are omnivorous during the later juvenile stage, feeding on encrusting organisms such as sponges, tunicates, bryozoans, algae, mollusks, and a variety of other items such as crustaceans and jellyfish; however, older juveniles and adults are more specialized, feeding primarily on sponges, which comprise as much as 95 percent of their diet in some locations (US Navy, 2018). The hawksbill turtle is found in different habitats depending on the life stage and include coral reefs, open sea, shallow coastal waters, underwater ledges and caves (NMFS, 2019a). The hawksbill turtle could be found year-round in the waters under all the Warning Areas as well as the Burner ATCAA/Hatteras ATCAA/Pamlico MOA Complex, R-5306A/Core MOA Complex, and the R-5314/Phelps MOA Complex.

References

NCNHP. 2020. *Natural Heritage Data Explorer*. <https://ncnhde.natureserve.org/>. Accessed January 2020.

NMFS. 2019a. *ESA Threatened and Endangered Species Directory.* <https://www.fisheries.noaa.gov/species-directory/threatened-endangered>. Accessed December 2019.

NMFS. 2019b. *Threatened and Endangered Species and Critical Habitats*. <https://www.fisheries.noaa.gov/southeast/consultations/southeast-region>. Accessed December 2019.

NOAA. 2019. *NOAA New England/Mid-Atlantic Region Species Mapper*. <https://noaa.maps.arcgis.com/apps/webappviewer/index.html>. Accessed December 2019.

US Navy. 2018. *Atlantic Fleet Training and Testing Final Environmental Impact Statement/Overseas Environmental Impact Statement*. June.

US Navy. 2009. VACAPES Range Complex Final Environmental Impact Statement/ Overseas Environmental Impact Statement.

USFWS. 2018. *Cahow or Bermuda Petrel (Pterodroma cahow) 5-year Review: Summary and Evaluation*. <https://ecos.fws.gov/docs/five_year_review/doc6104.pdf>. Accessed February 2020.

USFWS. 2019a. *Southeastern Wildlife Species Profiles*. <https://www.fws.gov/southeast/wildlife/>. Accessed December 2019.

USFWS. 2019b. *Spotlight on Species*. <https://www.fws.gov/international/cites/cop16/index.html>. Accessed December 2019.

USFWS. 2020a. Information and Planning and Information Planning and Consultation. <https://ecos.fws.gov/ipac>. Accessed January 2020.

USFWS. 2020b. *Environmental Conservation Online Service*. <https://ecos.fws.gov/ecp/>. Accessed February 2020.

VDGIF. 2018. *Threatened, Endangered, and Special Concern Species*. <https://www.dgif.virginia.gov/wildlife/>. Accessed December 2019.

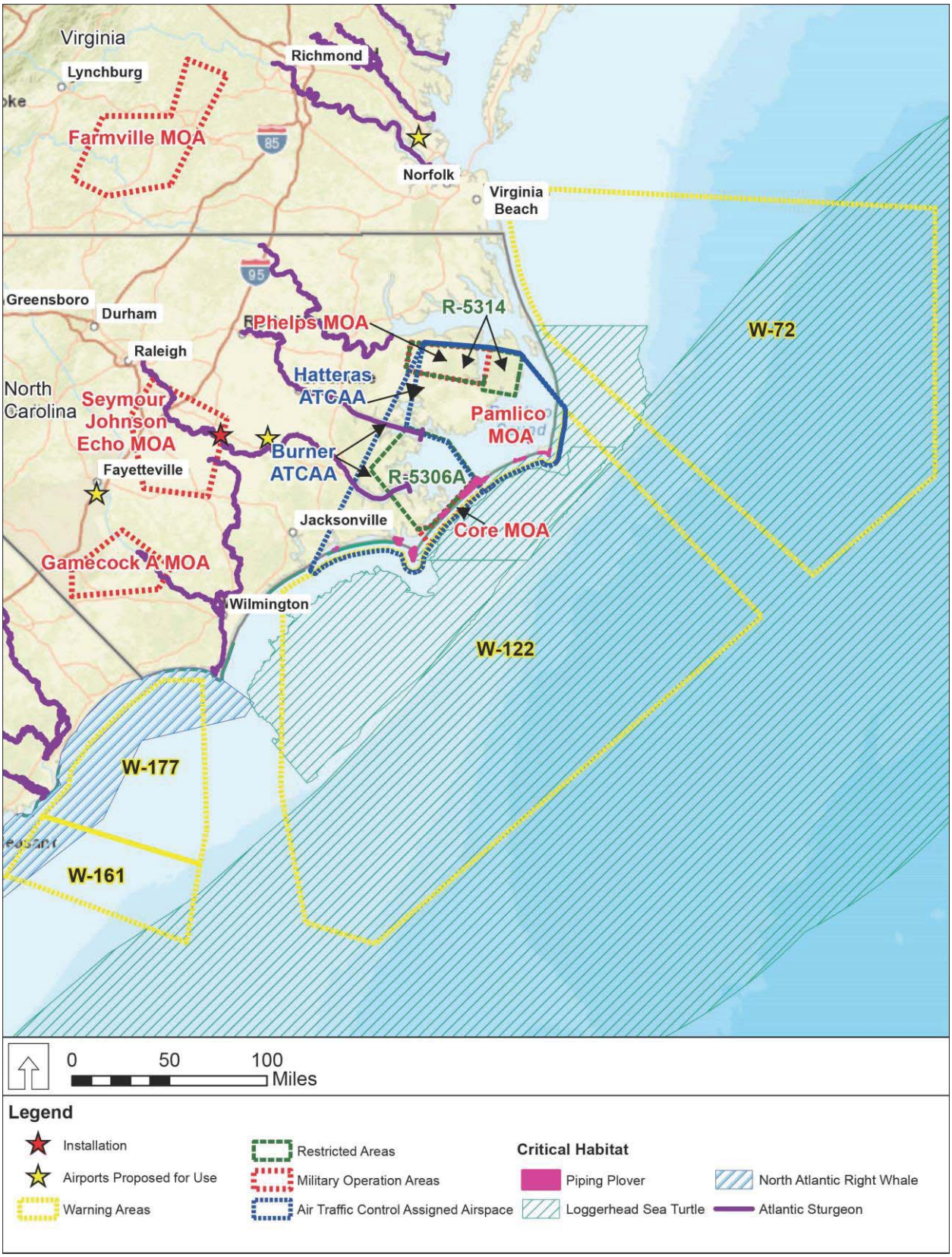


Figure D-1. Designated Critical Habitat in the Proposed Special Use Airspace.

Table D-1
All Federal and State Listed Species with the Potential to Occur within the Airport and Airspace Regions of Influence

Species	Scientific Name	Federal Status	State Status (NC)	State Status (VA)	ISO	Burner ATCAA/ Hatteras ATCAA/ Pamlico MOA (NC)	R-5306A/ Core MOA (NC)	R-5314/ Phelps MOA (NC)	Seymour Johnson Echo MOA (NC)	Gamecock A MOA (NC)	Farmville MOA (VA)	Warning Area W-72	Warning Area W-122	Warning Area W-177	Warning Area W-161
Amphibians															
Barking Treefrog	*Hyla gratiosa*			T							X				
Carolina Gopher Frog	*Rana capito* (syn. *Rana capito capito)*		E			X	X		X	X					
Eastern Tiger Salamander	*Ambystoma tigrinum*		T	E						X					
Mabee's Salamander	*Ambystoma mabeei*		T	T		X	X	X	X	X					
Neuse River Waterdog	*Necturus lewisi*	P-T	SC		X				X[2]						
Ornate Chorus Frog	*Pseudacris ornata*		E			X	X		X	X					
River Frog	*Rana heckscheri* (syn. *Rana heckscheri)*		E						X	X					
Birds															
Bachman's Sparrow	*Peucaea aestivalis* (=*Aimophila aestivalis)*			T							X				
Bald Eagle	*Haliaeetus leucocephalus*		T			X	X	X	X	X	X				
Bermuda petrel	*Pterodroma cahow*	E										X	X		
Caspian Tern	*Hydroprogne caspia*		T			X									
Common Tern	*Sterna hirundo*		E			X	X	X							
Eastern Black Rail	*Laterallus jamaicensis* ssp. *Jamaicensis*	P-T	SC	E		X	X	X				X	X	X	X
Eastern Woodrat	*Neotoma floridana floridana*		T			X	X								
Gull-billed Tern	*Gelochelidon nilotica*		T	T		X	X	X							
Henslow's Sparrow	*Ammodramus henslowii*		E	T		X	X				X				
Loggerhead Shrike	*Lanius ludovicianus*			T							X				
Migrant Loggerhead Shrike	*Lanius ludovicianus migrans*			T							X				
Peregrine Falcon	*Falco peregrinus*		E	T		X	X	X							
Piping Plover	*Charadrius melodus*	T	T	T		X[2]	X[2]	X[2]				X	X	X	X
Red Knot	*Calidris canutus rufa*	T	T	T		X	X	X				X	X	X	X
Red-cockaded Woodpecker	*Picoides borealis*	E	E	E	X	X	X	X	X	X					
Roseate Tern	*Sterna dougallii dougallii*	E	E	E		X[1]	X[1]	X[1]				X	X	X	X
Wayne's Black-throated Green Warbler	*Setophaga virens waynei*		E			X	X	X		X					
Wood Stork	*Mycteria americana*	T	T						X	X					
Fish															
Atlantic Sturgeon	*Acipenser oxyrinchus oxyrinchus*	E	E	E		X[2]	X[2]		X[2]	X[2*]		X	X	X	X

Table D-1
All Federal and State Listed Species with the Potential to Occur within the Airport and Airspace Regions of Influence

Species	Scientific Name	Federal Status	State Status (NC)	State Status (VA)	ISO	Burner ATCAA/ Hatteras ATCAA/ Pamlico MOA (NC)	R-5306A/ Core MOA (NC)	R-5314/ Phelps MOA (NC)	Seymour Johnson Echo MOA (NC)	Gamecock A MOA (NC)	Farmville MOA (VA)	Warning Area W-72	Warning Area W-122	Warning Area W-177	Warning Area W-161
Carolina Darter	*Etheostoma collis*			T							X				
Carolina madtom	*Noturus furiosus*	P-E	T		X	X			X						
Carolina Redhorse	*Moxostoma* sp. 3 (syn. *Moxostoma* sp. *cf. erythrurum)*		T						X[1]						
Giant manta ray	*Manta birostris*	T	-									X	X	X	X
Least Brook Lamprey	*Lampetra aepyptera*		T		X				X						
Mimic Shiner	*Notropis volucellus*		T		X				X						
Oceanic whitetip shark	*Carcharhinus longimanus*	T	-									X	X	X	X
Orangefin Madtom	*Noturus gilberti*			T							X				
Roanoke Log Perch	*Percina rex*	E	E								X				
Short nose sturgeon	*Acipenser brevirostrum*	E	E	E		X	X	X	X	X		X	X	X	X
Whitemouth Shiner	*Notropis alborus*			T							X				
Mammals															
Blue whale	*Balaenoptera musculus*	E		E								X	X	X	X
Fin whale	*Balaenoptera physalus*	E	E	E								X	X	X	X
Gray Bat	*Myotis grisescens*	E	E	E							X				
Little brown bat	*Myotis lucifugus*		E								X				
North Atlantic right whale	*Eubalaena glacialis*	E	E	E								X	X	X[2]	X[2]
Northern Long -eared bat	*Myotis septentrionalis*	T	T	T		X	X	X		X	X				
Rafinesque's Big-eared Bat	*Corynorhinus rafinesquii rafinesquii*		T					X			X				
Red wolf	*Canis rufus*	EX	T			X	X	X							
Sei whale	*Balaenoptera borealis*	E		E								X	X	X	X
Sperm whale	*Physeter catodon (=macrocephalus)*	E	E	E								X	X	X	X
Tricolored bat (=Eastern pipistrelle)	*Perimyotis subflavus*		E								X				
West Indian Mantee	*Trichechus manatus*	T	T	E		X	X	X							
Mollusks															
Alewife Floater	*Anodonta implicata*		T					X	X						
Atlantic Pigtoe	*Fusconaia masoni*	P-T	E	T					X	X	X				
Barrel Floater	*Anodonta couperiana*		E							X					
Brook Floater	*Lasmigona subviridis*		E	E						X					

Table D-1
All Federal and State Listed Species with the Potential to Occur within the Airport and Airspace Regions of Influence

Species	Scientific Name	Federal Status	State Status (NC)	State Status (VA)	ISO	Burner ATCAA/ Hatteras ATCAA/ Pamlico MOA (NC)	R-5306A/ Core MOA (NC)	R-5314/ Phelps MOA (NC)	Seymour Johnson Echo MOA (NC)	Gamecock A MOA (NC)	Farmville MOA (VA)	Warning Area W-72	Warning Area W-122	Warning Area W-177	Warning Area W-161
Creeper	*Strophitus undulatus*		T						X						
Dwarf wedgemussel	*Alasmidonta heterodon*	E	E	E					X						
Eastern Lampmussel	*Lampsilis radiata*		T						X	X					
Eastern Pondmussel	*Ligumia nasuta*		T					X							
Green Floater	*Lasmigona subviridis*		E	T					X		X				
Notched Rainbow	*Villosa constricta*		T						X		X				
Spirit Supercoil	*Paravitrea hera*		E	E							X				
Tar River Spinymussel	*Parvaspina steinstansana*	E	E						X						
Tidewater Mucket	*Leptodea ochracea*		T					X							
Triangle Floater	*Alasmidonta undulata*		T						X						
Yellow Lampmussel	*Lampsilis cariosa*		E						X	X					
Yellow Lance	*Elliptio lanceolata*	T	E						X		X				
Plants															
A Silkgrass	*Pityopsis graminifolia* var. *graminifolia*		E							X					
Acid-swamp Yellow-eyed-grass	*Xyris serotina*		T							X					
American Bluehearts	*Buchnera americana*		E						X						
American Chaffseed	*Schwalbea americana*	E	E							X					
Awl-leaf Mudwort	*Limosella australis*		T			X		X							
Baldwin's Nutrush	*Scleria baldwinii*		T			X	X			X					
Beach Morning-glory	*Ipomoea imperati*		T			X	X	X							
Big Three-awn Grass	*Aristida condensata*		T							X					
Bigleaf Grass-of-Parnassus	*Parnassia grandifolia*		T							X					
Blue Water-hyssop	*Bacopa caroliniana*		T							X					
Blue Witch Grass	*Dichanthelium caerulescens*		E			X	X	X							
Bog Bluestem	*Andropogon mohrii*		T			X	X	X		X					
Bosc's Bluet	*Oldenlandia boscii*		E							X					
Boykin's Lobelia	*Lobelia boykinii*		E							X					
Brown Bogbutton	*Lachnocaulon minus*		T							X					
Buffalo Clover	*Trifolium reflexum*		T						X						
Cabbage Palm	*Sabal palmetto*		T			X	X	X							
Canby's Dropwort	*Oxypolis canbyi*	E	E							X					

Table D-1
All Federal and State Listed Species with the Potential to Occur within the Airport and Airspace Regions of Influence

Species	Scientific Name	Federal Status	State Status (NC)	State Status (VA)	ISO	Burner ATCAA/ Hatteras ATCAA/ Pamlico MOA (NC)	R-5306A/ Core MOA (NC)	R-5314/ Phelps MOA (NC)	Seymour Johnson Echo MOA (NC)	Gamecock A MOA (NC)	Farmville MOA (VA)	Warning Area W-72	Warning Area W-122	Warning Area W-177	Warning Area W-161
Carolina Bogmint	*Macbridea caroliniana*		E			X		X	X	X					
Carolina Grass-of-Parnassus	*Parnassia caroliniana*		T							X					
Carolina Pineland-cress	*Warea cuneifolia*		E						X						
Carolina Spleenwort	*Asplenium heteroresiliens*		E							X					
Carolina Sunrose	*Crocanthemum carolinianum*		E			X	X	X							
Chaffseed	*Schwalbea americana*		E							X					
Chapman's Arrowhead	*Sagittaria chapmanii*		E			X	X			X					
Chapman's Redtop	*Tridens chapmanii*		T			X	X	X		X					
Chapman's Three-awn	*Aristida simpliciflora*		E							X					
Coastal Beaksedge	*Rhynchospora pleiantha*		T			X	X			X					
Coastal Goldenrod	*Solidago villosicarpa*		E			X		X		X					
Coastal Sedge	*Carex exilis*		E						X						
Comfortroot	*Hibiscus aculeatus*		T			X	X			X					
Cooley's Meadowrue	*Thalictrum cooleyi*	E	E				X			X					
Coralbean	*Erythrina herbacea*		E			X	X								
Cranberry	*Vaccinium macrocarpon*		T			X	X	X		X					
Douglass's Bittercress	*Cardamine douglassii*		T						X						
Drooping Bulrush	*Scirpus lineatus*		T			X	X								
Dwarf Bladderwort	*Utricularia olivacea*		T			X	X								
Dwarf Stinging Nettle	*Urtica chamaedryoides*		E					X							
Dwarf-burhead	*Helanthium tenellum*		E							X					
Eaton's Ladies'-tresses	*Spiranthes eatonii*		E			X	X			X					
Estuary Pipewort	*Eriocaulon parkeri*		T			X	X	X							
Fen Orchid	*Liparis loeselii*		E			X		X							
Flaxleaf Seedbox	*Ludwigia linifolia*		T			X	X			X					
Florida Goober Grass	*Amphicarpum muhlenbergianum*		E							X					
Florida Sunflower	*Helianthus floridanus*		T							X					
Florida Yellow-eyed-grass	*Xyris floridana*		T			X	X			X					
Georgia Indigo-bush	*Amorpha georgiana*		E		X				X	X					
Georgia Sunrose	*Crocanthemum georgianum*		E			X	X	X							
Giant Spiral Orchid	*Spiranthes longilabris*		E			X	X			X					
Globe-fruit Seedbox	*Ludwigia sphaerocarpa*		E			X		X	X	X					

Table D-1
All Federal and State Listed Species with the Potential to Occur within the Airport and Airspace Regions of Influence

Species	Scientific Name	Federal Status	State Status (NC)	State Status (VA)	ISO	Burner ATCAA/ Hatteras ATCAA/ Pamlico MOA (NC)	R-5306A/ Core MOA (NC)	R-5314/ Phelps MOA (NC)	Seymour Johnson Echo MOA (NC)	Gamecock A MOA (NC)	Farmville MOA (VA)	Warning Area W-72	Warning Area W-122	Warning Area W-177	Warning Area W-161
Golden sedge	*Carex lutea*	E	E				X								
Golden-crest	*Lophiola aurea*		E							X					
Grassleaf Arrowhead	*Sagittaria weatherbiana*		E			X	X	X	X	X					
Green Fly Orchid	*Epidendrum magnoliae*		T							X					
Gulfcoast Spikerush	*Eleocharis cellulosa*		E			X	X	X							
Hairy Smartweed	*Persicaria hirsuta* (syn. *Polygonum hirsutum)*		E							X					
Harperella	*Ptilimnium nodosum*	E	E	E							X				
Harper's fimbry	*Fimbristylis perpusilla*		E							X					
Heartleaf Sandmat	*Euphorbia cordifolia*		T							X					
Hooded Pitcherplant	*Sarracenia minor* var. *minor*		E							X					
Horned Bladderwort	*Utricularia cornuta*		T							X					
Kidney Sedge	*Carex reniformis*		T						X	X					
Lanceleaf Seedbox	*Ludwigia lanceolata*		E			X	X	X							
Leafless Water-milfoil	*Myriophyllum tenellum*		E			X		X		X					
Leavenworth's Goldenrod	*Solidago leavenworthii*		T			X	X		X	X					
Limesink Dog-fennel	*Eupatorium leptophyllum*		E							X					
Littleleaf Sneezeweed	*Helenium brevifolium*		E		X					X					
Loose Water-milfoil	*Myriophyllum laxum*		E			X	X								
Many-flower Grass-pink	*Calopogon multiflorus*		E			X	X								
Maritime Pinweed	*Lechea maritima* var. *virginica*		E			X		X							
Michaux's sumac	*Rhus michauxii*	E	E	T					X	X					
Mudbank Crown Grass	*Paspalum dissectum*		E							X					
Netted Nutrush	*Scleria reticularis*		T						X						
Northeastern Bladderwort	*Utricularia resupinata*		E					X		X					
Peelbark St. John's-wort	*Hypericum fasciculatum*		E			X	X			X					
Pinebarren Sunrose	*Crocanthemum corymbosum*		T			X	X	X							
Pineland Plantain	*Plantago sparsiflora*		T							X					
Pineland Yellow-eyed-grass	*Xyris stricta*		E			X	X								
Plymouth Gentian	*Sabatia kennedyana*		T							X					
Pondberry	*Lindera melissifolia*	E	E				X		X	X					
Purple Honeycomb-head	*Balduina atropurpurea*		E							X					
Quillwort Arrowhead	*Sagittaria isoetiformis*		T					X	X	X					

Table D-1
All Federal and State Listed Species with the Potential to Occur within the Airport and Airspace Regions of Influence

Species	Scientific Name	Federal Status	State Status (NC)	State Status (VA)	ISO	Burner ATCAA/ Hatteras ATCAA/ Pamlico MOA (NC)	R-5306A/ Core MOA (NC)	R-5314/ Phelps MOA (NC)	Seymour Johnson Echo MOA (NC)	Gamecock A MOA (NC)	Farmville MOA (VA)	Warning Area W-72	Warning Area W-122	Warning Area W-177	Warning Area W-161
Raven's Seedbox	*Ludwigia ravenii*		T			X	X		X	X					
Rich-woods Sedge	*Carex oligocarpa*		T			X	X								
Rough-leaved Loosestrife	*Lysimachia asperulifolia*	E	E			X	X		X	X					
Salt-meadow Grass	*Diplachne maritima*		E			X	X	X							
Sand Heather	*Hudsonia tomentosa*		T			X		X							
Sandhills Lily	*Lilium pyrophilum*		E						X						
Savanna Indian-plantain	*Arnoglossum ovatum* var. *lanceolatum*		E							X					
Savanna Indigo-bush	*Amorpha confusa*		T							X					
Seabeach Amaranth	*Amaranthus pumilus*	T	T	T		X	X	X							
Seabeach Knotweed	*Polygonum glaucum*		E			X	X	X							
Sensitive Joint-vetch	*Aeschynomene virginica*	T	T	T	X	X	X	X							
Shadow-witch	*Ponthieva racemosa*		T			X	X								
Shrubby Seedbox	*Ludwigia suffruticosa*		T							X					
Slender Corydalis	*Corydalis micrantha*		T			X	X								
Small Butterwort	*Pinguicula pumila*		E			X	X			X					
Small-flowered Buckthorn	*Sageretia minutiflora*		T			X	X								
Small-headed Marsh Elder	*Iva microcephala*		T							X					
Snowy Orchid	*Platanthera nivea*		T			X		X		X					
Southern Skullcap	*Scutellaria australis*		E						X						
Southern White Beaksedge	*Rhynchospora macra*		T			X	X		X						
Spiked Medusa	*Orthochilus ecristatus*		E						X	X					
Spring Sneezeweed	*Helenium vernale*		E							X					
Sun-facing Coneflower	*Rudbeckia heliopsidis*		E						X						
Swamp Forest Beaksedge	*Rhynchospora decurrens*		T							X					
Thick-pod White Wild Indigo	*Baptisia alba*		T						X						
Thin-wall Quillwort	*Thin-wall Quillwort*		T						X						
Twisted-leaf Goldenrod	*Solidago tortifolia*		E							X					
Venus Hair Fern	*Adiantum capillus-veneris*		T							X					
Virginia Least Trillium	*Trillium pusillum* var. *virginianum*		E						X						
Virginia Quillwort	*Isoetes virginica*			E							X				
Virginia Spiderwort	*Tradescantia virginiana*		T						X						

Table D-1
All Federal and State Listed Species with the Potential to Occur within the Airport and Airspace Regions of Influence

Species	Scientific Name	Federal Status	State Status (NC)	State Status (VA)	ISO	Burner ATCAA/ Hatteras ATCAA/ Pamlico MOA (NC)	R-5306A/ Core MOA (NC)	R-5314/ Phelps MOA (NC)	Seymour Johnson Echo MOA (NC)	Gamecock A MOA (NC)	Farmville MOA (VA)	Warning Area W-72	Warning Area W-122	Warning Area W-177	Warning Area W-161
Viviparous Spikerush	*Eleocharis vivipara*		E			X	X	X		X					
Waccamaw River Spiderlily	*Hymenocallis pygmaea*		T							X					
Water Dawnflower	*Stylisma aquatica*		E							X					
Wireleaf Dropseed	*Sporobolus teretifolius*		T							X					
Woody Goldenrod	*Chrysoma pauciflosculosa*		E							X					
Woody Goldenrod	*Chrysoma pauciflosculosa*		E							X					
Yellow-fruited Flax	*Linum floridanum* var. *chrysocarpum*		T							X					
Reptiles															
American alligator	*Alligator mississipiensis*	T-(SA)	T		X	X	X	X	X						
Chicken Turtle	*Deirochelys reticularia*			E						X					
Eastern Coralsnake	*Micrurus fulvius fulvius*		E						X	X					
Eastern Diamondback Rattlesnake	*Crotalus adamanteus*		E			X	X		X[1]	X					
Green Sea Turtle	*Chelonia mydas*	T	T	T		X	X	X				X	X	X	X
Hawksbill Sea Turtle	*Eretmochelys imbricata imbricata*	E	E	E		X	X	X				X	X	X	X
Kemp's Ridley Sea Turtle	*Lepidochelys kempii*	E	E	E		X	X	X				X	X	X	X
Leatherback Sea Turtle	*Dermochelys coriacea*	E	E	E		X	X	X				X	X	X	X
Loggerhead Sea Turtle	*Caretta caretta*	T	T	T		X[2]	X	X				X[2]	X[2]	X	X[2]
Northern Pinesnake	*Pituophis melanoleucus melanoleucus*		T						X						
Southern Hognose Snake	*Heterodon simus*		T			X[1]	X[1]		X	X					

Sources: USFWS, 2020a, 2020b; NMFS, 2019a; NOAA, 2019; NCNHP, 2020; VDGIF, 2018

Notes:
[1] All recorded occurrences in the county are either extirpated, have not been found in recent surveys, or have not been surveyed recently enough to be confident they are still present.
[2] Designated Critical Habitat for the listed species is also located within the special use airspace.

ADAIR = adversary air; ATCAA = Air Traffic Control Assigned Airspace; E = Endangered; EX = Experimental Population; ISO = Kinston Regional Jetport; MOA = Military Operations Area; NC = North Carolina; P = Proposed; R = Restricted Area; S/A = Similar Appearance; SC = Special Concern; T = Threatened; VA = Virginia

This page intentionally left blank