FINAL

ENVIRONMENTAL ASSESSMENT

For

REALIGNMENT OF SLOCUM ROAD

AT

MARINE CORPS AIR STATION CHERRY POINT, NORTH CAROLINA

April 2021

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ABSTRACT

Designation:	Environmental Assessment
Title of Proposed Action:	Realignment of Slocum Road
Project Location:	Marine Corps Air Station Cherry Point
Lead Agency:	U.S. Marine Corps
Cooperating Agency:	None
Affected Region:	Craven County, North Carolina
Action Proponent:	Marine Corps Air Station Cherry Point
Point of Contact:	Marine Corps Air Station, Cherry Point Environmental Affairs Department Jessica Guilianelli PSC Box 8006 Cherry Point, North Carolina 28533 jessica.guilianelli@usmc.mil
Date:	April 2021

Marine Corps Air Station Cherry Point has prepared this Environmental Assessment in accordance with the National Environmental Policy Act, as implemented by the Council on Environmental Quality Regulations and U.S. Marine Corps regulations for implementing the National Environmental Policy Act. The Proposed Action is to demolish an existing Entry Control Facility at Slocum Road and construct a new Entry Control Facility that will serve as the Pass & Identification Office and main entrance and exit point into and out of Marine Corps Air Station Cherry Point in Craven County, North Carolina. This Environmental Assessment evaluates the potential environmental impacts associated with the Proposed Action and the No Action Alternative to the following resource areas: air quality, noise, biological resources, water resources, coastal zone, traffic and transportation, and public health and safety.

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EXECUTIVE SUMMARY

ES.1 Proposed Action

Marine Corps Air Station (MCAS) Cherry Point has prepared this Environmental Assessment (EA) to assess the potential environmental impacts associated with demolishing an existing Entry Control Facility (ECF) at Slocum Road and constructing a new ECF that will serve as the Pass & Identification Office and main entrance and exit point into and out of MCAS Cherry Point in Craven County, North Carolina. The Proposed Action would widen Slocum Road from two lanes to four lanes and relocate the road to better comply with Explosive Safety Quantity Distance (ESQD) arc criteria regarding Public Transportation Routes (PTRs), provide an additional concrete two-lane bridge beside the existing two-lane bridge over Slocum Creek, and provide improved gate and inspection facilities.

ES.2 Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to enhance the flow of mobilizing forces to the Aerial Port of Embarkation (APOE), provide proper inspection facilities for commercial vehicles entering the Air Station, enhance the service of ordnance deliveries to the station ordnance areas, and upgrade the entrance and traffic controls to meet current safety and security requirements in order to quickly and efficiently process inbound traffic on Slocum Road and stop unauthorized vehicles from entering the station.

The Proposed Action is needed to provide significant and necessary security, safety, and transportation improvements along Slocum Road to sustain mission capability.

The Proposed Action furthers the U.S. Marine Corps' execution of its congressionally mandated roles and responsibilities under 10 United States Code section 8063.

ES.3 Alternative Considered

MCAS Cherry Point is considering one action alternative that meets the purpose of and need for the Proposed Action and a No Action Alternative.

Alternatives for the Proposed Action were evaluated against screening factors:

1. Must create new ECF that complies with all anti-terrorism/force protection requirements and provide proper inspection facilities for commercial vehicles entering the Air Station
2. Must comply with ESQD criteria for PTRs
3. Must enhance the flow of mobilizing forces to the APOE in order to meet Marine Corps' mission requirements
4. Must enhance the service of ordnance deliveries to the station ordnance areas
5. Must minimize impacts to wetlands, streams, stream buffers, and other natural resources to the greatest extent possible

Based on the reasonable alternative screening factors and meeting the purpose and need for the Proposed Action, one action alternative for the realignment of Slocum Road was selected for analysis in this EA.

Under the Preferred Alternative, the Marine Corps would realign Slocum Road and widen it from two lanes to four, construct an additional concrete two-lane bridge beside the existing two-lane bridge over Slocum Creek, and construct a new ECF. The new ECF would include a visitor control center, gate house, four sentry booths, main gate inspection canopies, overwatch defensive fighting position, and a truck/POV inspection office. The roadway section of the improvement adds two lanes to serve Slocum Road traffic as well as providing access from staff housing off Alexander Road. The new roadway will begin at the eastern terminus of the base near the North Carolina Department of Transportation overpass project at U.S. Highway 70 and will terminate at the intersection with Roosevelt Boulevard. The intersection of New Slocum Road and Stanley Road would be constructed using a "Green T" design. In order accommodate the realignment of Slocum Road under the Preferred Alternative, Alexander Road from Hertford Road to Stanley Road would be realigned south of Slocum Road.

The Preferred Alternative would impact approximately 5.3 acres of wetlands, 38,031 square feet (SF) (0.9 acres) of stream buffer permanently, 3,239 SF (0.07 acres) of stream buffer temporarily, and 254 linear feet (LF) of stream. The components of the Preferred Alternative are displayed in **Figure ES-1**.

Under the No Action Alternative, the Marine Corps would not realign Slocum Road and construct a new ECF. The No Action Alternative would not meet the purpose and need and, therefore, is not considered a reasonable alternative. However, Council on Environmental Quality (CEQ) guidelines stipulate that the No Action Alternative must be analyzed to assess any environmental consequences that may occur if the Proposed Action is not implemented. Therefore, this alternative was carried forward for analysis.

ES.4 Summary of Environmental Resources Evaluated in the EA

CEQ regulations, the National Environmental Policy Act (NEPA), and Navy and U.S. Marine Corps instructions for implementing NEPA, specify that an EA should address those resource areas potentially subject to impacts. The following resource areas have been addressed in this EA: air quality, noise, biological resources, water resources, coastal zone, traffic and transportation, and public health and safety. Because potential impacts were considered to be negligible or non-existent, the following resource areas were not evaluated in this EA: airspace, hazardous materials and wastes, socioeconomics and environmental justice, infrastructure, cultural resources, and geological resources.

ES.5 Public Involvement

For this project, which will affect lands within the boundaries of the Air Station, the Final EA and Finding of No Significant Impact will be published to the installation website and advertisements will be published in the New Bern Sun Journal. Public comments can be submitted to the MCAS Cherry Point Environmental Affairs Department.

ES.6 Summary of Potential Environmental Consequences of the Action Alternatives and Major Mitigating Actions

Table ES-1 provides a tabular summary for the potential impacts to the resources associated with each of the alternative actions analyzed.

Figure ES-1. Alternative 1 (Preferred Alternative)

Table ES-1. Summary of Potential Impacts to Resource Areas

Resource Area	*No Action Alternative*	*Alternative 1 (Preferred Alternative)*
Air Quality	The No Action Alternative would have no significant impacts to air quality.	• The emissions associated with construction and demolition would be temporary and localized. • Estimated emissions would not exceed any of the comparative thresholds. • The emissions would contribute directly to emission of GHGs from combustion of fossil fuels.
Noise	The No Action Alternative would have no significant impacts to the noise environment.	• Under the Proposed Action, there would be short-term and temporary noise generated by construction and demolition equipment and activities. • The predominate noise source at MCAS Cherry Point is from aircraft operations and it is expected that the construction noise would cause temporary minor adverse impacts to residential units nearest project site. • Operation of the ECF would produce longer-term noise impacts for the nearby residences. In order to reduce operational noise, an earthen berm would be constructed to the south of the Vehicle Inspection and Gate House area. The earthen berm will would act as a sound barrier and help with any adverse noise impacts experienced by the nearer residences to the project area.
Biological Resources	The No Action Alternative would have no significant impacts to biological resources.	• The majority of the proposed construction would occur in previously disturbed areas that support no native vegetation or wildlife. • The Proposed Action would remove small areas of natural vegetation. The impacts to wildlife would be minimal.
Water Resources	The No Action Alternative would have no significant impacts to water resources.	• The Proposed Action would impact approximately 5.3 acres of wetlands, 38,031 SF (0.9 acres) of stream buffer permanently, 3,239 SF (0.07 acres) of stream buffer temporarily, and 254 LF of stream. An individual wetland permit would be completed to comply with section 404 of the CWA and to determine what mitigation would be required. • During bridge construction, minor substrate impacts that may increase turbidity would be expected; however, impacts to adjacent downstream receiving waters would be minimized using erosion control measures. • The proposed construction and demolition activities with ground disturbance would contribute to stormwater runoff which potentially degrades water quality of nearby surface waters from increased sedimentation. This impact would be temporary during demolition and construction activities and would be reduced from implementation of BMPs such as silt fencing around the construction site. • The additional paved areas from the proposed roadway, ECF, and parking areas would increase the impervious surface, further increasing stormwater runoff. Two stormwater control features would be constructed as part of the Proposed Action to receive stormwater runoff from the project area. All construction and demolition would be done in adherence to MCAS Cherry Point's state-required Stormwater Pollution Prevention Plan, as well as all required Erosion and Sedimentation control procedures.

Table ES-1. Summary of Potential Impacts to Resource Areas

Resource Area	*No Action Alternative*	*Alternative 1 (Preferred Alternative)*
Coastal Zone	The No Action Alternative would have no significant impacts to coastal zone.	• Minor substrate impacts that may increase turbidity would be expected during bridge construction; however, impacts to adjacent downstream receiving waters would be minimized using erosion control measures. • The Proposed Action would be consistent, to the maximum extent practicable, with the enforceable policies of North Carolina's federally approved coastal management program.
Traffic and Transportation	The No Action Alternative would have no significant impacts to traffic and transportation.	• During construction there would be minor disturbances to traffic flow from the entrance and exit of construction related equipment and materials to the proposed project site. • Based on the traffic analysis, the LOS for the new roadway alignment would be acceptable at all intersections. • Traffic at the Roosevelt ECF would be anticipated to decrease when the new Slocum ECF becomes operational as the main entry and exit point for the installation. • The traffic restrictions due to ESQD arcs along Slocum Road would no longer be required.
Public Health and Safety	The No Action Alternative would have a negative long-term impact to public health and safety.	• During construction at the Proposed Action sites, Occupational Safety and Health Act regulations, procedures, and anti-terrorism/force protection requirements would be followed. • The Proposed Action would provide proper inspection facilities for commercial vehicles entering the installation, enhance the service of ordnance deliveries to the station ordnance areas, increase the ability to quickly and efficiently process inbound traffic on Slocum Road, and upgrade the entrance and traffic controls to meet current safety and security requirements. • The newly realigned Slocum Road would not be encroached by ESQD arcs of the magazine area. • There are no environmental health or safety risks associated with the Proposed Action that would disproportionately affect children.

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Final Environmental Assessment for Realignment of Slocum Road at Marine Corps Air Station Cherry Point, North Carolina

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Abbreviations and Acronyms

Acronym	Definition
APOE	Aerial Port of Embarkation
AT/FP	Anti-terrorism Force Protection
BGEPA	Bald and Golden Eagle Protection Act
BMP	best management practice
CAMA	Coastal Area Management Act
CDW	Concept Design Workshop
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	carbon monoxide
CO_2	carbon dioxide
COA	Couse of Action
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
dB	decibel
dBA	A-weighted sound level
DNL	day-night average sound level
EA	Environmental Assessment
ECF	Entry Control Facility
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Endangered Species Act
ESQD	explosive safety quantity distance
FY	Fiscal Year
GHG	greenhouse gas
HAP	hazardous air pollutant
ID	Identification
LF	Linear feet
L_{max}	Maximum Sound Level
LOS	level of service
MCAS	Marine Corps Air Station
MCO	Marine Corps Order
MILCON	Military Construction
MMPA	Marine Mammal Protection Act
MSAT	Mobile Source Air Toxics
MT/yr	Metric tons/year
NAAQS	National Ambient Air Quality Standards
NAVFAC	Naval Facilities Engineering Command
NCDEQ	North Carolina Department of Transportation
NEPA	National Environmental Policy Act
NO_2	nitrogen dioxide
NPDES	National Pollutant Discharge Elimination System
Pb	lead
PCB	polychlorinated biphenyl
PM_{10}	particulate matter less than or equal to 10 microns in diameter
$PM_{2.5}$	particulate matter less than or equal to 2.5 microns in diameter
POV	Privately owned vehicle
ppd	Passengers per day
PSD	Prevention of Significant Deterioration
PTR	Public Transportation Route
ROI	Region of Influence
SF	square feet
SO_2	sulfur dioxide
TPY	tons per year
U.S.	United States
U.S.C.	United States Code
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
UFC	Unified Facilities Criteria
VOC	volatile organic compound

1 Purpose of and Need for the Proposed Action

1.1 Introduction

The United States (U.S.) Marine Corps proposes to demolish an existing Entry Control Facility (ECF) at Slocum Road and construct a new ECF that will serve as the Pass & Identification (ID) Office and main entrance and exit point into and out of Marine Corps Air Station (MCAS) Cherry Point in Craven County, North Carolina.

This Environmental Assessment (EA) has been prepared in accordance with the requirements of the National Environmental Policy Act (NEPA) (42 United States Code [U.S.C.] section 4321 et seq.); the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508); Marine Corps Order (MCO) 5090.2, Volume 12; and all other applicable laws, regulations, Executive Orders (EOs), and instructions.

1.2 Background

The II Marine Expeditionary Force contingency requirements call for moving Marines and cargo from Marine Corps Base Camp Lejeune to the MCAS Cherry Point Aerial Port of Embarkation (APOE) within a specified timeframe. Mobilizing forces travel on four-lane highways until reaching MCAS Cherry Point, then are forced into a single lane bottleneck, causing delays in reaching the APOE.

When in elevated Force Protection conditions, ID checks at the Slocum ECF cause inbound traffic to be backed up onto U.S. Highway 70, and NC Highway 101, causing delays and potentially endangering motorists. Both existing lanes of Slocum Road are utilized for inbound traffic during the peak morning hours, leaving no return path for rejected vehicles. Due to substandard inspection facilities at Slocum Road and the lack of a Pass & ID office there, most of the commercial vehicle inspections each day are performed at the Main Gate. Sentries manning the ID checkpoints must stand in the middle of the road or on a muddy shoulder, exposing them to adverse weather conditions and traffic hazards. At night, portable, generator powered lighting units provide the only illumination. Lighting is inadequate for properly inspecting vehicle interiors. These factors reduce sentry efficiency and safety. The current Pass & ID Office at MCAS Cherry Point is located at the Main Gate adjacent to Roosevelt Boulevard. The Pass & ID Office is housed in a temporary facility and provides installation decals, vehicle registration, weapons registration, visitor passes, contractor/business ID cards, and flight line passes.

Station Ordnance has an average of three to four ordnance deliveries per month, as well as organic moves (two to three per week) within the station's boundaries that must utilize Slocum Road. Currently ordnance delivery trucks must wait at the Slocum Gate for an escort from Station Ordnance to take them to their destination. Organic ordnance moves to the Combat Aircraft Loading Area and Assembly/Disassembly area are currently performed with base traffic instead of separately.

Because Slocum Road is encroached by Explosive Safety Quantity Distance (ESQD) arcs, traffic volume has been reduced to about 9,800 passengers per day (ppd) through restricted gate hours. The restricted gate hours are permissible within the Public Transportation Route (PTR) arcs of the magazine area. When the volume exceeds 10,000 ppd, more restrictive Inhabited Building Distance arcs will apply. To accommodate future traffic growth and additional commercial vehicle inspections without negatively

impacting ordnance storage capacity and capability, a portion of Slocum Road must be relocated to the south, away from ordnance magazines.

The Marine Corps completed a Concept Design Workshop (CDW) for Perimeter Security Compliance of Slocum Road and completed a Final Report in April 2020. The CDW Report created Courses of Action (COAs) for the realignment of Slocum Road based on explosive safety requirements, needed security improvements, and environmental constraints.

The Proposed Action would widen Slocum Road from two lanes to four lanes and relocate the road to better comply with ESQD criteria regarding PTRs, provide an additional two-lane bridge beside the existing two-lane bridge over Slocum Creek, and provide improved gate and inspection facilities.

1.3 Location

MCAS Cherry Point is located on approximately 13,164 acres in Craven County, in the City of Havelock, North Carolina. Access to the Main Station is via State Highway 101 (**Figure 1.3-1**).

1.4 Purpose and Need for Proposed Action

The purpose of the Proposed Action is to enhance the flow of mobilizing forces to the APOE, provide proper inspection facilities for commercial vehicles entering the Air Station, enhance the service of ordnance deliveries to the station ordnance areas, and upgrade the entrance and traffic controls to meet current safety and security requirements in order to quickly and efficiently process inbound traffic on Slocum Road and stop unauthorized vehicles from entering the station.

> 10 U.S.C. section 8063: The Marine Corps shall be organized, trained, and equipped to provide fleet marine forces of combined arms, together with supporting air components, for service with the fleet in the seizure or defense of advanced naval bases and for the conduct of such land operations as may be essential to the prosecution of a naval campaign.

The Proposed Action is needed to provide significant and necessary security, safety, and transportation improvements along Slocum Road to sustain mission capability.

The Proposed Action furthers the U.S. Marine Corps' execution of its congressionally mandated roles and responsibilities under 10 U.S.C. section 5063.

1.5 Scope of Environmental Analysis

This EA includes an analysis of potential environmental impacts associated with the action alternatives and the No Action Alternative. The environmental resource areas analyzed in this EA include: air quality, noise, biological resources, water resources, traffic and transportation, and public health and safety. The study area for each resource analyzed may differ due to how the Proposed Action interacts with or impacts the resource. For instance, the study area for land use resources may only include the construction footprint of a building whereas the noise study area would expand out to include areas that may be impacted by operational, range, or construction noise.

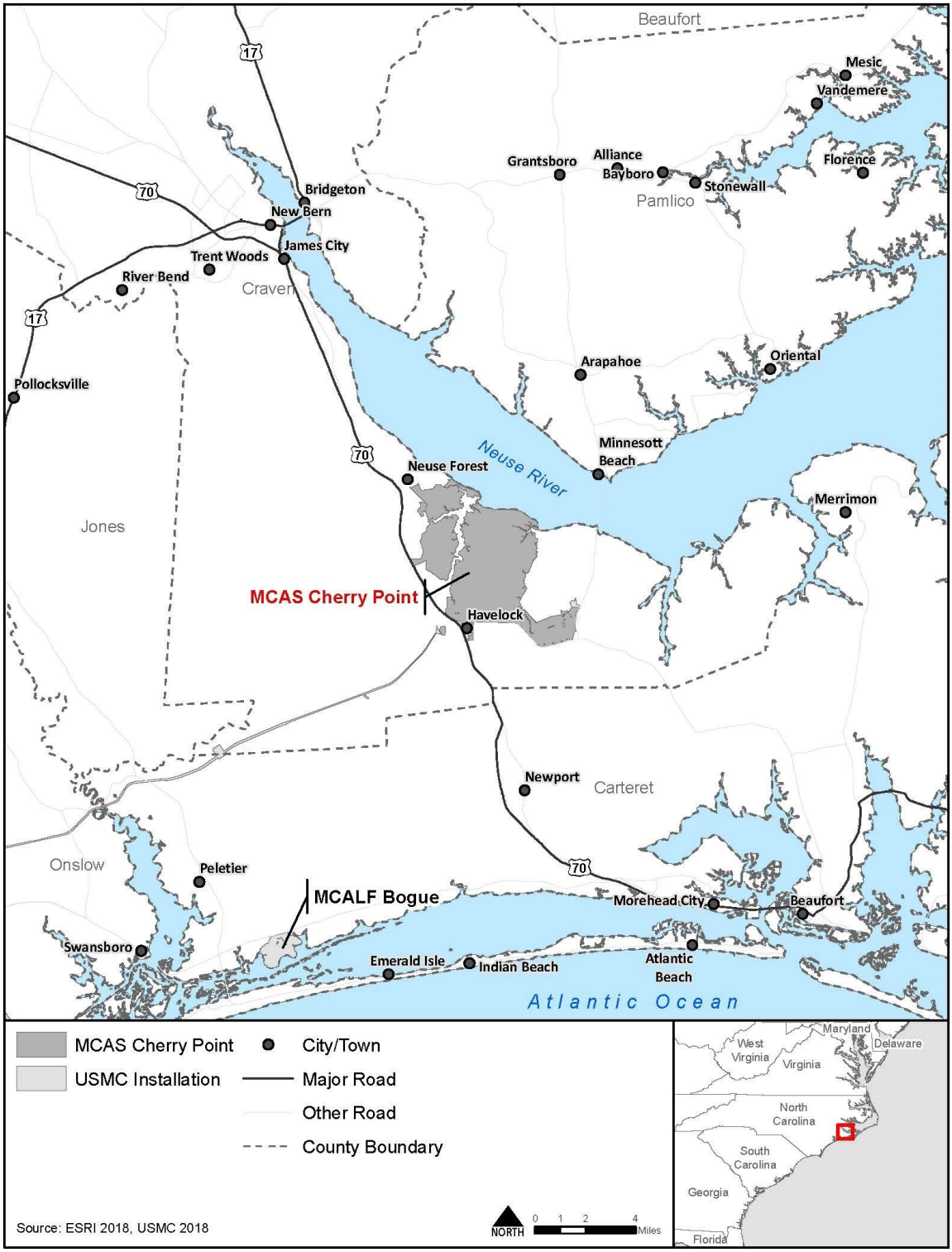

Figure 1.3-1. MCAS Cherry Point

1.6 Key Documents

Key documents are sources of information incorporated into this EA. Documents are considered to be key because of similar actions, analyses, or impacts that may apply to this Proposed Action. CEQ guidance encourages incorporating documents by reference. Documents incorporated by reference in part or in whole include:

- Form 1391, Fiscal Year (FY) 20 Military Construction (MILCON) Program, Slocum Road Physical Security Compliance (Project Number P134)
- MILCON CDW Report, FY20 MILCON Project 134 Perimeter Security Compliance, Slocum Road
- MCAS Cherry Point Master Plan, 2014
- MCAS Cherry Point Integrated Natural Resources Management Plan, 2012
- MCAS Cherry Point Integrated Cultural Resources Management Plan, 2018

1.7 Relevant Laws and Regulations

This EA has been prepared in accordance with federal and state laws, statutes, regulations, and policies pertinent to the implementation of the Proposed Action, including the following:

- **NEPA** (42 U.S.C. sections 4321–4370h)
- **CEQ Regulations for Implementing the Procedural Provisions of NEPA** (40 CFR 1500-1508)
- **Navy regulations for implementing NEPA** (32 CFR 775).
- **MCO 5090.2**, Volume 12, Environmental Planning and Review.
- **MCO 8020.10**, Marine Corps Explosive Safety Management Program
- **National Historic Preservation Act** (54 U.S.C. section 306108 et seq.)
- **Endangered Species Act (ESA)** (16 U.S.C. section 1531 et seq.)
- **Migratory Bird Treaty Act** (16 U.S.C. section 703-712)
- **Marine Mammal Protection Act (MMPA)** (16 U.S.C. section 1361 et seq.)
- **Clean Air Act** (42 U.S.C. section 7401 et seq.)
- **Clean Water Act (CWA)** (33 U.S.C. section 1251, et seq.)
- **Coastal Zone Management Act (CZMA)** (16 U.S.C. section 1451 et seq.)
- **Neuse River Basin Riparian Buffer Rules** (15A North Carolina Administrative Code 02B.0714)
- **EO 12898**, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

A description of the Proposed Action's consistency with these laws, policies and regulations, as well as the names of regulatory agencies responsible for their implementation, is presented in Chapter 5 (**Table 5.1-1**).

1.8 Public Agency Participation and Intergovernmental Coordination

For this project, which will affect lands within the boundaries of the Air Station, the Final EA will be published to the installation website and advertisements will be published in the New Bern Sun Journal. Public comments can be submitted to the MCAS Cherry Point Environmental Affairs Department.

The U.S. Marine Corps has coordinated or consulted with the U.S. Army Corps of Engineers (USACE), U.S. Coast Guard, and North Carolina Department of Environmental Quality (NCDEQ) through the permitting process regarding the Preferred Alternative.

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2 Proposed Action and Alternatives

2.1 Proposed Action

The Proposed Action would widen Slocum Road from two lanes to four lanes and relocate the road to better comply with ESQD criteria regarding PTRs, provide an additional concrete two-lane bridge beside the existing two-lane bridge over Slocum Creek, and provide improved gate and inspection facilities.

The new ECF would include a visitor control center, gate house, four sentry booths, main gate inspection canopies, overwatch defensive fighting position, and a truck/privately owned vehicle (POV) inspection office. The roadway section of the improvement adds two lanes to serve Slocum Road traffic as well as providing access from staff housing off Alexander Road. The new roadway will begin at the eastern terminus of the base near the North Carolina Department of Transportation (NCDOT) overpass project at U.S. Highway 70 and will terminate at the intersection with Roosevelt Boulevard.

The proposed bridge over Slocum Creek would span coastal wetlands along Slocum Creek, and construction would be completed from a temporary work bridge and/or barge. The temporary work bridge would be constructed in two parts such that the navigable opening of Slocum Creek would be maintained throughout construction.

Site preparation would include site earthwork, clearing and grubbing and demolition of existing utilities. Site earthwork would include mobilization, rough and fine grading, excavation, backfill, compaction, and disposal of materials. Paving and site improvements would include landscaping, creation of a static display, roadways, erosion and sediment control, parking lots, sidewalks, chain link site fencing, demolition and relocation of boat storage area, main entrance signage, and dumpster and equipment pads. Buildings #4396 and #4783 would be demolished to clear the project site.

Electrical utilities for the new ECF would include electrical distribution, traffic signals, communication distribution, and area lighting. Electrical distribution would include primary and secondary systems. Communication distribution would include copper and fiber optic conduit runs, basic telephone, computer network, security and fire alarm systems, and all supporting infrastructure. Mechanical Utilities include water distribution, sanitary sewer system, and storm drainage system.

2.2 Screening Factors

NEPA's implementing regulations provide guidance on the consideration of alternatives to a federally proposed action and require rigorous exploration and objective evaluation of reasonable alternatives. Only those alternatives determined to be reasonable and to meet the purpose and need require detailed analysis.

Potential alternatives that meet the purpose and need were required to comply with:

- Unified Facilities Criteria (UFC) 2-000-05N Facility Planning Criteria For Navy/Marine Corps Shore Installations; and
- Navy/Marine Corps Anti-Terrorism/Force Protection (AT/FP) requirements.

Alternatives for the Proposed Action were evaluated against screening factors:

1. Must create new ECF that complies with all AT/FP requirements and provide proper inspection facilities for commercial vehicles entering the Air Station
2. Must comply with ESQD criteria for PTRs
3. Must enhance the flow of mobilizing forces to the APOE in order to meet Marine Corps' mission requirements
4. Must enhance the service of ordnance deliveries to the station ordnance areas
5. Must minimize impacts to wetlands, streams, stream buffers, and other natural resources to the greatest extent practicable

2.3 Alternatives Carried Forward

Based on the reasonable alternative screening factors and meeting the purpose and need for the Proposed Action, one action alternative for the realignment of Slocum Road was selected for analysis in this EA.

2.3.1 No Action Alternative

Under the No Action Alternative, the Marine Corps would not realign Slocum Road and construct a new ECF. The No Action Alternative would not meet the purpose and need as described in Section 1.4, and, therefore, is not considered a reasonable alternative. However, CEQ guidelines stipulate that the No Action Alternative must be analyzed to assess any environmental consequences that may occur if the Proposed Action is not implemented. Therefore, this alternative was carried forward for analysis.

2.3.2 Alternative 1 (Preferred Alternative)

Under the Preferred Alternative, the Marine Corps would realign Slocum Road and widen it from two lanes to four, construct an additional concrete two-lane bridge beside the existing two-lane bridge over Slocum Creek, and construct a new ECF. The new ECF would include a visitor control center, gate house, four sentry booths, main gate inspection canopies, overwatch defensive fighting position, and a truck/POV inspection office. The roadway section of the improvement adds two lanes to serve Slocum Road traffic as well as providing access from staff housing off Alexander Road. The new roadway will begin at the eastern terminus of the base near the NCDOT overpass project at U.S. Highway 70 and will terminate at the intersection with Roosevelt Boulevard. The intersection of New Slocum Road and Stanley Road would be constructed using a "Green T" design. In order accommodate the realignment of Slocum Road under the Preferred Alternative, Alexander Road from Hertford Road to Stanley Road would be realigned south of Slocum Road.

The Preferred Alternative would impact approximately 5.3 acres of wetlands, 38,031 square feet (SF) (0.9 acres) of stream buffer permanently, 3,239 SF (0.07 acres) of stream buffer temporarily, and 254 linear feet (LF) of stream. The components of the Preferred Alternative are displayed in **Figure 2.3-1**.

Figure 2.3-1. Alternative 1 (Preferred Alternative)

2.4 Alternatives Considered but not Carried Forward for Detailed Analysis

The following alternatives were considered, but not carried forward for detailed analysis in this EA as they did not meet the purpose and need for the project and did not satisfy the reasonable alternative screening factors presented in Section 2.2.

COA 1 from the CDW Report was considered but eliminated from analysis. COA 1 would have impacted 10.6 acres of wetlands, 1.0 acres of stream buffer, and 330 LF of stream. COA 1 was eliminated from consideration in order to minimize impacts to wetlands and natural resources.

COA 2 from the CDW Report was considered but eliminated from analysis. COA 2 would have impacted 7.0 acres of wetlands, 1.8 acres of stream buffer, and 750 LF of stream. COA 2 was eliminated from consideration in order to minimize impacts to wetlands and natural resources.

COA 4 from the CDW Report was considered but eliminated from analysis. COA 4 would have impacted 2.9 acres of wetlands, 0.3 acres of stream buffer, and 330 LF of stream. COA 4 was eliminated from consideration due to the proximity of the gate to the housing area, which would have increased noise and light pollution. The curvature of the roadway for COA 4 would also present security challenges due to the sight line.

An alternative was considered for expanding Slocum Road in place; however, this alternative would not have avoided the ESQD arcs. Therefore, this alternative was eliminated from consideration.

2.5 Best Management Practices Included in the Proposed Action

This section presents an overview of the best management practices (BMPs) that are incorporated into the Proposed Action in this document. BMPs are existing policies, practices, and measures that the U.S. Marine Corps would adopt to reduce the environmental impacts of designated activities, functions, or processes. Although BMPs mitigate potential impacts by avoiding, minimizing or reducing/eliminating impacts, BMPs are distinguished from potential mitigation measures because BMPs are (1) existing requirements for the Proposed Action, (2) ongoing, regularly occurring practices, or (3) not unique to this Proposed Action. In other words, the BMPs identified in this document are inherently part of the Proposed Action and are not potential mitigation measures proposed as a function of the NEPA environmental review process for the Proposed Action. **Table 2.5-1** includes a list of BMPs.

Table 2.5-1. Best Management Practices for the Proposed Action

Best Management Practice	***Description***	***Impacts Reduced/Avoided***
Erosion and Sediment Control Plan	The Erosion and Sediment Control Plan would identify site-specific BMPs to implement during construction and demolition activities, such as silt fencing, watering exposed soils, etc.	Reduce erosion at construction and demolition sites. Minimize impacts on nearby water resources from sedimentation.

Table 2.5-1. Best Management Practices for the Proposed Action (cont.)

Best Management Practice	*Description*	*Impacts Reduced/Avoided*
Stormwater Pollution Prevention Plan	A Stormwater Pollution Prevention Plan would be prepared in accordance with a National Pollutant Discharge Elimination System (NPDES) permit. This plan would contain an erosion and sedimentation control plan. The plan would incorporate BMPs for erosion and sedimentation control, including techniques to diffuse and slow the velocity of stormwater runoff.	Reduce erosion, sedimentation, and stormwater runoff. Minimize impacts to nearby surface water resources.
Equipment cleaning and access, fill quality	Construction equipment and vehicles would be thoroughly cleaned before brought on site. All fill material brought to the construction site from off site would be checked to ensure that it is free from contaminants and does not contain any seeds or plant materials from non-native or invasive species. All mechanized clearing and grading, vehicle traffic, equipment staging, and the deposition of soil would be confined to the temporary and/or permanent project footprint or to other disturbed or developed land.	Reduce the potential for impacts from invasive/non-native plants and animals. Minimize soil disturbance footprint.
Fire Prevention Measures	The use of shields, protective mats, or other fire prevention equipment during grinding and welding to prevent or minimize the potential for fire. Vehicles would not be driven or parked in areas where catalytic converters could ignite dry vegetation. No smoking or disposal of cigarette butts would take place within vegetated areas.	Minimize the potential for fire.
Low Impact Development design features	Low Impact Development design features would be implemented to minimize the potential impacts to soils from stormwater runoff.	Reduce erosion, sedimentation, and stormwater runoff. Minimize impacts to nearby surface water resources.
Transportation coordination	Coordination with the responsible agencies regarding the use of public roads during project construction.	Minimize any disruption of local traffic

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3 Affected Environment and Environmental Consequences

This chapter presents a description of the environmental resources and baseline conditions that could be affected from implementing any of the alternatives and an analysis of the potential direct and indirect effects of each alternative.

All potentially relevant environmental resource areas were initially considered for analysis in this EA. In compliance with NEPA, CEQ, and Department of Navy and Marine Corps guidelines; the discussion of the affected environment (i.e., existing conditions) focuses only on those resource areas potentially subject to impacts. Additionally, the level of detail used in describing a resource is commensurate with the anticipated level of potential environmental impact.

"Significantly," as used in NEPA, requires considerations of both context and intensity. Context means that the significance of an action must be analyzed in several contexts such as society as a whole (e.g., human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of a proposed action. For instance, in the case of a site-specific action, significance would usually depend on the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant. Intensity refers to the severity or extent of the potential environmental impact, which can be thought of in terms of the potential amount of the likely change. In general, the more sensitive the context, the less intense a potential impact needs to be in order to be considered significant. Likewise, the less sensitive the context, the more intense a potential impact would be expected to be significant.

This section includes air quality, noise, biological resources, water resources, transportation, and public health and safety. Resources that have little to no potential for impact have been eliminated from further evaluation. These include:

Airspace: The Proposed Action does not alter, use, or have the potential to affect airspace at the installation.

Hazardous Materials and Wastes: The Proposed Action would not introduce any new hazardous materials in the environment. All hazardous wastes generated by construction and demolition activities would be handled under the existing Resource Conservation and Recovery Act -compliant waste management programs and MCAS Cherry Point Standard Operating Procedures.

Socioeconomics and Environmental Justice: The proposed construction and demolition activities, could generate short-term employment and income to civilian contractors as well as temporary beneficial impacts in the local economy, resulting from an increase in demand for goods and services. The Proposed Action would not change the local, regional, or statewide economics or social conditions or affect any specific population or demographic group. No impacts to socioeconomics and environmental justice would be expected.

Infrastructure: It is not anticipated that there would be any changes to personnel loading, operations, or training activities as a result of the Proposed Action. There would be minimal change in demand for potable water and electricity or wastewater generation under the Proposed Action. During construction and demolition activities, contractors are responsible for the removal of construction debris. Waste

concrete would be crushed and staged for later use, or if unsuitable would be disposed of at an approved Construction and Demolition Debris landfill. Stormwater management facilities would be constructed as part of the Proposed Action. Stormwater management design would be implemented in accordance with NCDEQ regulations and section 438 of the Energy Independence and Security Act. It is anticipated that some or all of the project area would be designated as low density, per NCDEQ, to reduce the need for stormwater management facilities. As such, there would be negligible impacts on MCAS Cherry Point's infrastructure.

Cultural Resources: There are no known cultural resources within the project area. Ground disturbing activities during demolition and construction could unearth an unknown or unmapped cultural resource. In an event such as this, all work would cease until approved by the MCAS Cherry Point Cultural Resources Manager.

Geological Resources: The proposed construction and demolition activities would require minor grading as well as potential removal and/or compaction of soils. The majority of the project site contains soils and topography that are already disturbed. Standard erosion and sedimentation control procedures, outlined in MCAS Cherry Point's stormwater pollution prevention plan, would be implemented to minimize impacts to soils.

3.1 Air Quality

This discussion of air quality includes criteria pollutants, standards, sources, permitting, and greenhouse gases (GHGs). Air quality in a given location is defined by the concentration of various pollutants in the atmosphere. A region's air quality is influenced by many factors, including the type and amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions.

Most air pollutants originate from human-made sources, including mobile sources (e.g., cars, trucks, buses) and stationary sources (e.g., factories, refineries, power plants), as well as indoor sources (e.g., some building materials and cleaning solvents). Air pollutants are also released from natural sources such as volcanic eruptions and forest fires.

3.1.1 Regulatory Setting

3.1.1.1 Criteria Pollutants and National Ambient Air Quality Standards

The principal pollutants defining the air quality, called "criteria pollutants," include carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), ozone, suspended particulate matter less than or equal to 10 microns in diameter (PM_{10}), fine particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$), and lead (Pb). CO, SO_2, Pb, and some particulates are emitted directly into the atmosphere from emissions sources. Ozone, NO_2, and some particulates are formed through atmospheric chemical reactions that are influenced by weather, ultraviolet light, and other atmospheric processes.

Under the Clean Air Act, the U.S. Environmental Protection Agency (USEPA) has established National Ambient Air Quality Standards (NAAQS) (40 CFR 50) for these pollutants. NAAQS are classified as primary or secondary. Primary standards protect against adverse health effects; secondary standards protect

against welfare effects, such as damage to farm crops and vegetation and damage to buildings. Some pollutants have long-term and short-term standards. Short-term standards are designed to protect against acute, or short-term, health effects, while long-term standards were established to protect against chronic health effects.

Areas that are and have historically been in compliance with the NAAQS are designated as attainment areas. Areas that violate a federal air quality standard are designated as nonattainment areas. Areas that have transitioned from nonattainment to attainment are designated as maintenance areas and are required to adhere to maintenance plans to ensure continued attainment. Areas that lack sufficient data to determine their classification are designated "unclassifiable," and are treated as attainment areas for the purpose of stationary source air permitting. MCAS Cherry Point is in a region designated as attainment/unclassifiable.

In addition to the NAAQS for criteria pollutants, national standards exist for hazardous air pollutants (HAPs), which are regulated under section 112(b) of the 1990 Clean Air Act Amendments. The *National Emission Standards for Hazardous Air Pollutants* regulate HAP emissions from stationary sources (40 CFR 61).

3.1.1.2 Mobile Sources

HAPs emitted from mobile sources are called Mobile Source Air Toxics (MSATs). MSATs are compounds emitted from highway vehicles and non-road equipment that are known or suspected to cause cancer or other serious health and environmental effects. In 2001, USEPA issued its first MSAT Rule, which identified 201 compounds as being HAPs that require regulation. A subset of six of the MSAT compounds was identified as having the greatest influence on health and included benzene, butadiene, formaldehyde, acrolein, acetaldehyde, and diesel particulate matter. More recently, USEPA issued a final rule establishing the Tier 3 Motor Vehicle Emission and Fuel Standards program (79 Federal Register 23414). The Tier 3 program is part of a comprehensive approach to reducing the impacts of motor vehicles on air quality and public health. The program considers the vehicle and its fuel as an integrated system, setting new vehicle emission standards and a new gasoline sulfur standard beginning in 2017. Construction equipment, however, would be operated intermittently for the duration of construction and would produce negligible ambient HAPs in a localized area. As a result, MSAT emissions are not considered further in this analysis.

3.1.1.3 General Conformity

The USEPA General Conformity Rule applies to federal actions occurring in nonattainment or maintenance areas when the total direct and indirect emissions of nonattainment pollutants (or their precursors) exceed specified thresholds. Because MCAS Cherry Point is located in an area of good air quality designated as attainment/unclassified, the General Conformity Rule does not apply.

3.1.1.4 Permitting

The Proposed Action involves construction that involves use of mobile sources that generate air pollutant emissions. The operation of the road and new entrance, once constructed, would not include any new or modified major stationary sources. Small heating units and an emergency generator are

planned for the new construction, but these are not significant stationary sources and therefore are not carried forward in the analysis.

3.1.1.5 Greenhouse Gases

GHGs are gas emissions that trap heat in the atmosphere. These emissions occur from natural processes and human activities. Scientific evidence indicates a trend of increasing global temperature over the past century due to an increase in GHG emissions from human activities. The climate change associated with this global warming is predicted to produce negative economic and social consequences across the globe.

In an effort to reduce energy consumption, reduce GHGs, reduce dependence on petroleum, and increase the use of renewable energy resources the Navy/Marine Corps has implemented a number of renewable energy projects. The Navy has established FY 2020 GHG emissions reduction targets of 34 percent from a FY 2008 baseline for direct GHG emissions and 13.5 percent for indirect emissions. Examples of Navy-wide GHG reduction projects include energy efficient construction, thermal and photovoltaic solar systems, geothermal power plants, and the generation of electricity with wind energy. The Navy/Marine Corps continues to promote and install new renewable energy projects and EO 13834, *Efficient Federal Operations*, requires federal agencies to track and report on GHG emissions and other appropriate performance measures.

3.1.2 Affected Environment

The most recent emissions inventory for Craven County is shown in **Table 3.1-1**. Volatile organic compound (VOC) and nitrogen oxide (NO_x) emissions are used to represent ozone generation because they are precursors of ozone.

Table 3.1-1. Craven County Air Emissions Inventory (2017)

Location	VOC (tpy)	CO (tpy)	NOx (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Craven County	21,402	25,364	3,492	843	3,838	1,622

Source: USEPA 2020.

Legend: tpy = tons per year; NO_x = nitrogen oxide; VOC = Volatile Organic Compound; CO = Carbon Monoxide; SO_2 = sulfur dioxide; PM_{10} = particulate matter less than or equal to 10 microns in diameter; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter.

3.1.3 Environmental Consequences

Effects on air quality are based on estimated direct and indirect emissions associated with the action alternatives. The region of influence (ROI) for assessing air quality impacts is the air basin in which the project is located, Craven County, North Carolina.

Estimated emissions from the proposed federal action are compared to the Prevention of Significant Deterioration (PSD) permitting thresholds for a major stationary source to assess air quality impacts.

3.1.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur and there would be no change to baseline air quality. Therefore, no significant impacts to air quality or air resources would occur with implementation of the No Action Alternative.

3.1.3.2 Alternative 1 (Preferred Alternative)

Potential Impacts

The widening of Slocum Road from two lanes to four land and the relocation of the road, construction of a new, two-lane bridge and a new installation entrance with buildings would generate localized air quality impacts for a period of 2.5 years. Once the road, bridge and building construction is complete, emissions related to operations would not be anticipated to be greater than current operations. Therefore, the air quality impacts of the Proposed Action are limited to those created by the demolition and construction activities. **Appendix A** contains detailed Air Quality calculations. Information contained in the 50% Basis of Design and the Cost Estimates in Appendix M of the MILCON CDW Report was used to prepare the emission estimates (NAVFAC 2020).

For attainment area criteria pollutants, the project air quality analysis uses the USEPA's PSD permitting threshold of 250 tons per year (TPY) as an initial indicator of the local significance of potential impacts to air quality. It is important to note that these indicators only provide a clue to the potential impacts to air quality. In the context of criteria pollutants for which the proposed project region is in attainment of a NAAQS, the analysis compares the annual net increase in emissions estimated for each project alternative to the 250 TPY PSD permitting threshold. The PSD permitting threshold represents the level of potential new emissions below which a new or existing minor non-listed stationary source may acceptably emit without triggering the requirement to obtain a permit. Thus, if the intensity of any net emissions increase for a project alternative is below 250 TPY in the context of an attainment criteria pollutant the indication is the air quality impacts will be insignificant for that pollutant.

Table 3.1-2 presents the estimated construction emissions for both facilities.

Table 3.1-2. Estimated Construction Emissions for Slocum Road Widening Project

Summary	*VOC tpy*	*CO tpy*	*NO_x tpy*	*SO_2 tpy*	*PM_{10} tpy*	*$PM_{2.5}$ tpy*	*CO_2 MT/yr*
2021	0.30	1.92	2.50	0.10	0.19	0.18	337
2022	1.92	12.48	16.27	0.64	1.22	1.18	2,193
2023	0.77	4.99	6.51	0.26	0.49	0.47	877
Comparative Threshold	250	250	250	250	250	250	NA
Exceed Threshold?	No	No	No	No	No	No	NA

Legend: tpy = tons per year; MT/yr = metric tons per year, CO_2 = carbon dioxide

Construction emissions do not exceed the comparative threshold. Therefore, implementation of the Preferred Alternative would not result in significant impacts to air quality.

Greenhouse Gases

Implementation of the Preferred Alternative would contribute directly to emissions of GHGs from the combustion of fossil fuels. Demolition, construction, and clearing activities would generate a total of

approximately 3,374 tons of carbon dioxide (CO_2). This would be comparable to having an additional 659 cars on the road driving an average of 11,500 miles for one year. These emissions, while small, would increase the atmosphere's concentration of GHGs, and, in combination with past and future emissions from all other sources, contribute incrementally to the global warming that produces the adverse effects of climate change.

3.2 Noise

This discussion of noise includes the types or sources of noise and the associated sensitive receptors in the human environment.

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 is all around us. The perception and evaluation of sound involves three basic physical characteristics:

- Intensity – the acoustic energy, which is expressed in terms of sound pressure, in decibels (dB)
- Frequency – the number of cycles per second the air vibrates, in Hertz
- Duration – the length of time the sound can be detected

Noise is defined as unwanted or annoying sound that interferes with or disrupts normal human activities. Although continuous and extended exposure to high noise levels (e.g., through occupational exposure) can cause hearing loss, the principal human response to noise is annoyance. The response of different individuals to similar noise events is diverse and is influenced by the type of noise, perceived importance of the noise, its appropriateness in the setting, time of day, type of activity during which the noise occurs, and sensitivity of the individual.

3.2.1 Basics of Sound and A-Weighted Sound Level

The loudest sounds that can be detected comfortably by the human ear have intensities that are a trillion times higher than those of sounds that can barely be detected. This vast range means that using a linear scale to represent sound intensity is not feasible. The dB is a logarithmic unit used to represent the intensity of a sound, also referred to as the sound level.

To mimic the human ear's non-linear sensitivity and perception of different frequencies of sound, the spectral content is weighted. For example, environmental noise measurements are usually on an "A-weighted" scale that filters out very low and very high frequencies in order to replicate human sensitivity. It is common to add the "A" to the measurement unit in order to identify that the measurement has been made with this filtering process (dBA).

3.2.2 Noise Metrics

A metric is a system for measuring or quantifying a particular characteristic of a subject. Since noise is a complex physical phenomenon, different noise metrics help to quantify the noise environment. The noise metrics relevant to this EA is the Day-Night Average Sound Level (DNL) which is the most commonly used tool for analyzing noise generated at an airfield, and the maximum sound level (L_{max}).

The DNL metric is the energy-averaged sound level measured over a 24-hour period, with a 10-dB penalty assigned to noise events occurring between 10 p.m. and 7 a.m. (acoustic night). DNL values are

average quantities, mathematically representing the continuous sound level that would be present if all of the variations in sound level that occur over a 24-hour period were averaged to have the same total sound energy.

L_{max} is the highest A-weighted sound level measured during a single event where the sound level changes value with time (e.g., an aircraft overflight). For example, during an aircraft overflight, the noise level starts at the ambient or background noise level, rises to the maximum level as the aircraft flies closest to the observer, and returns to the background level as the aircraft recedes into the distance. L_{max} defines the maximum sound level occurring for a fraction of a second. For aircraft noise, the "fraction of a second" over which the maximum level is defined is generally 1/8 second (American National Standards Institute 1988).

3.2.3 Regulatory Setting

Under the Noise Control Act of 1972, the Occupational Safety and Health Administration established workplace standards for noise. The minimum requirement states that constant noise exposure must not exceed 90 dBA over an 8-hour period. The highest allowable sound level to which workers can be constantly exposed is 115 dBA and exposure to this level must not exceed 15 minutes within an 8-hour period. The standards limit instantaneous exposure, such as impact noise, to 140 dBA. If noise levels exceed these standards, employers are required to provide hearing protection equipment that will reduce sound levels to acceptable limits.

3.2.4 Affected Environment

The predominant noise sources at MCAS Cherry Point consist of aircraft operations, both at and around the airfields. Other components such as construction, aircraft ground support equipment for maintenance purposes, and vehicle traffic produce noise, but such noise generally represents a transitory and negligible contribution to the average noise level environment.

The project location is within the aircraft generated noise contours and range from 65 dB to 75 dB DNL, as shown in **Figure 3.2-1**.

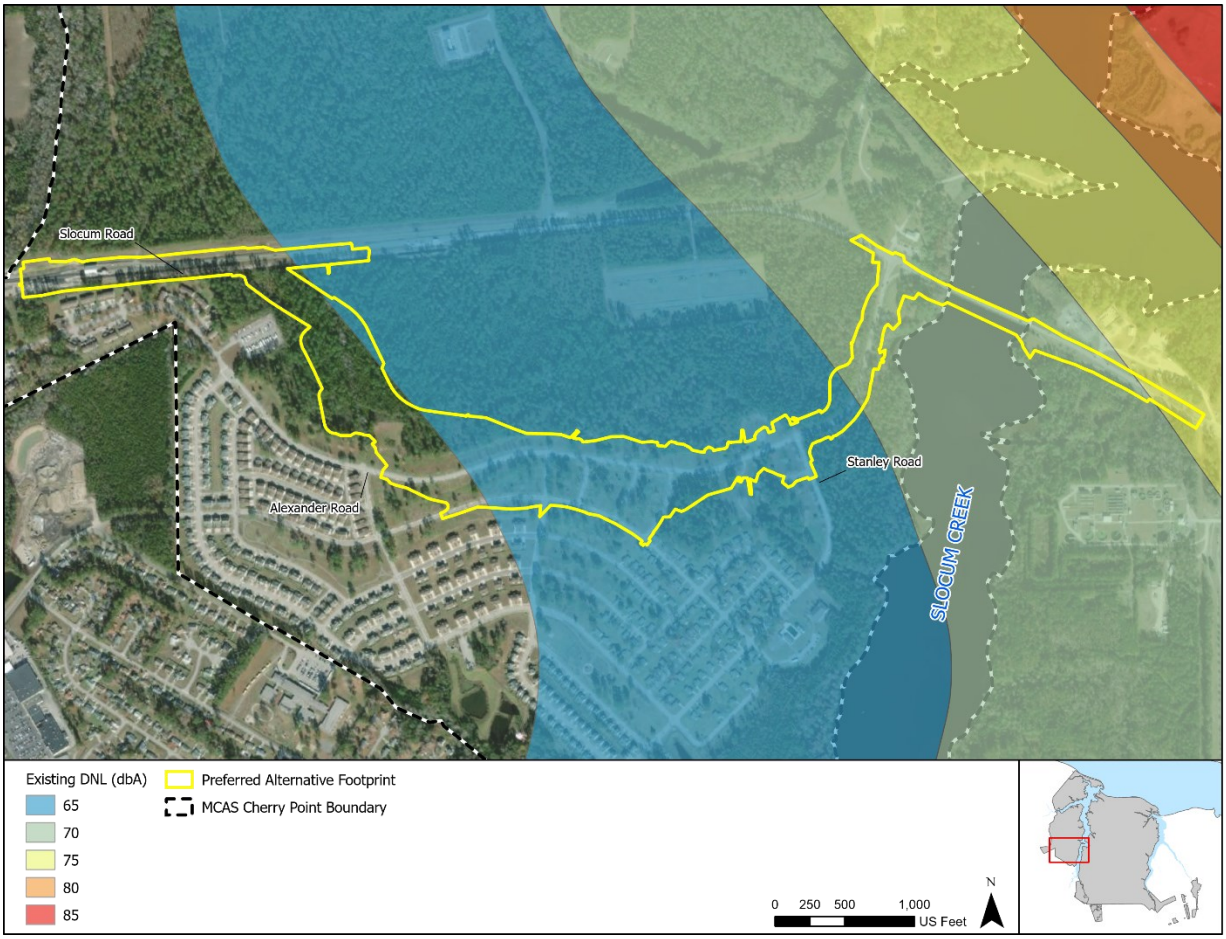

Figure 3.2-1. Existing DNL Noise Contours from Aircraft Noise at MCAS Cherry Point

The federal government supports conditions free from noise that threaten human health and welfare and the environment. Response to noise varies, depending on the type and characteristics of the noise, distance between the noise source and whoever hears it (the receptor), receptor sensitivity, and time of day. A noise sensitive receptor is defined as a land use where people involved in indoor or outdoor activities may be subject to stress or considerable interference from noise. Such locations or facilities often include residential dwellings, hospitals, nursing homes, educational facilities, and libraries. Sensitive receptors may also include noise sensitive cultural practices, some domestic animals, or certain wildlife species.

The nearest sensitive receptors (facilities with noise sensitive uses, such as child care centers, hospitals, or residential areas) are approximately 100 feet away from the proposed project site. The Proposed Action site lies immediately adjacent to the Slocum Housing area on MCAS Cherry Point. As such, the housing area lies within 100 feet of the project footprint.

3.2.5 Environmental Consequences

Analysis of potential noise impacts includes estimating likely noise levels from the Proposed Action and determining potential effects to sensitive receptor sites.

3.2.5.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur and there would be no change to baseline noise levels. Therefore, no significant impacts due to the noise environment would occur with implementation of the No Action Alternative.

3.2.5.2 Alternative 1 (Preferred Alternative)

As described in **Section 3.5.4**, Slocum Housing residential area is immediately adjacent to the project site, and at times is within 100 feet of the limits of disturbance. Using the Federal Highway Administration's Roadway Construction Noise Model, the nearest receptor residences would experience noise levels of approximately 80.4 dBA from construction equipment operation. All noise impacts from construction would be temporary in nature and would only occur during normal business hours (8:00 am to 5:00 pm). In addition, the walls and windows of homes would reduce the noise experienced indoors. Portions of the Slocum Housing are within the 65 DNL contour. These residences would likely be habituated to general noise from aircraft activity. However, construction activities would likely to cause temporary adverse impacts due to noise during construction. Residences over 500 feet away would experience noise levels of less than 65 dBA.

Operation of the ECF would produce longer-term noise impacts for the nearby residences. In order to reduce operational noise, an earthen berm would be constructed to the south of the Vehicle Inspection and Gate House area. The earthen berm will would act as a sound barrier and help with any adverse noise impacts experienced by the nearer residences to the project area.

Therefore, implementation of the Preferred Alternative would not result in significant impacts to the noise environment.

3.3 Biological Resources

Biological resources include living, native, or naturalized plant and animal species and the habitats within which they occur. Plant associations are referred to generally as vegetation, and animal species are referred to generally as wildlife. Habitat can be defined as the resources and conditions present in an area that support a plant or animal.

Within this EA, biological resources are defined as vegetation, wildlife, and threatened and endangered species.

3.3.1 Regulatory Setting

Special-status species, for the purposes of this assessment, are those species listed as threatened or endangered under the ESA as well as species afforded Federal protection under the MMPA and Bald and Golden Eagle Protection Act (BGEPA).

The purpose of the ESA is to conserve the ecosystems upon which threatened and endangered species depend and to conserve and recover listed species. Section 7 of the ESA requires action proponents to consult with the U.S. Fish and Wildlife Service or National Marine Fisheries Service to ensure that their actions are not likely to jeopardize the continued existence of federally listed threatened or endangered species, or result in the destruction or adverse modification of designated critical habitat. Critical habitat

is an area protected by ESA that contains features essential to the conservation of an endangered or threatened species and that may require special management and protection. Critical habitat cannot be designated on any areas owned, controlled, or designated for use by the DoD where an Integrated Natural Resources Management Plan has been developed that, as determined by the Department of Interior or Department of Commerce Secretary, provides a benefit to the species subject to critical habitat designation.

All marine mammals are protected under the provisions of the MMPA. The MMPA prohibits any person or vessel from "taking" marine mammals in the U.S. or the high seas without authorization. The MMPA defines "take" to mean "to harass, hunt, capture, or kill or attempt to harass, hunt, capture, or kill any marine mammal."

Bald and golden eagles are protected by the BGEPA. This Act prohibits anyone, without a permit issued by the Secretary of the Interior, from taking bald eagles, including their parts, nests, or eggs. The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb."

The Magnuson-Stevens Fishery Conservation and Management Act provides for the conservation and management of the fisheries. Under the Act, essential fish habitat (EFH) consists of the waters and substrate needed by fish to spawn, breed, feed, or grow to maturity.

Species protected by the Migratory Bird Treaty Act are not assessed here in accordance with the Department of Interior Solicitor's Opinion M-37050, Incidental Take Prohibited Under the MBTA, issued December 22, 2017 which concludes that the Migratory Bird Treaty Act's prohibition on take (defined as pursuing, hunting, taking, capturing, killing, or attempting to do the same) applies only to "direct and affirmative purposeful actions that reduce migratory birds, their eggs, or their nests" and not to the losses incidental to otherwise lawful activities.

3.3.2 Affected Environment

3.3.2.1 Vegetation

There are five natural community types present on MCAS Cherry Point: pine, grassland, pine-hardwood, hardwood, and hardwood–pine (See **Table 3.3-1**). The most abundant community type is forests, with 6,913 acres of hardwood and pine forests (approximately 81% of the natural communities). Pine forest is the dominant natural community, totaling 4,222 acres distributed throughout the Main Station. Loblolly pine (*Pinus taeda*) dominates the canopy in broad interstream areas. Loblolly forests are burned by prescription on a 3–5 year cycle to facilitate military training, reduce wildfire danger, improve wildlife habitat, and promote native plant communities (MCAS Cherry Point 2012).

Table 3.3-1. Natural Vegetation Communities at MCAS Cherry Point

Natural Community	***Acres***
Pine	4,222
Grassland	1,631
Pine-Hardwood	1,499
Hardwood	670
Hardwood–Pine	522
Total	**8,544**

The majority of the project site is located in areas that are developed of have been previously disturbed. The rest of the project site contains pine forest (26.3 acres) and pine-hardwood forest (0.3 acres). The canopy of pine forests at MCAS Cherry Point is dominated by loblolly pine. During the stream assessment and wetland delineation for the project area, the dominant trees and shrubs observed included loblolly pine, longleaf pine (*Pinus palustris*), sweetgum (*Liquidambar styraciflua*), blackgum (*Nyssa sylvatica*), red maple (*Acer rubrum*), southern wax myrtle (*Myrica cerifera*), bald cypress (*Taxodium distichum*), sweetbay magnolia (*Magnolia virginiana*), American beautyberry (*Callicarpa americana*), dwarf palmetto (*Sabal minor*), groundseltree (*Baccharis halimifolia*), and red bay (*Persea borbonia*). Dominant species observed in the herbaceous layer typically included chalky bluestem (*Andropogon capillipes*), giant cane (*Arundinaria gigantea*), jewelweed (*Impatiens capensis*), greenbrier (*Smilax laurifolia*), crossvine (*Bignonia capreolata*), smartweed (*Polygonum sp.*), Marsh parsley (*Cyclospermum leptophyllum*), lizard's tail (*Saururus cernuus*), microstegium (*Microstegium vimineum*), woodoats (*Chasmanthium latifolium*), and arrow arum (*Peltandra virginica*).

3.3.2.2 Wildlife

Common mammal species at MCAS Cherry Point include white-tailed deer (*Odocoileus virginianus*), bobcat (*Lynx rufus*), gray fox (*Urocyon cinereoargenteus*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), swamp rabbit (*Sylvilagus aquaticus*), eastern cottontail (*Sylvilagus floridanus*), eastern gray squirrel (*Sciurus carolinensis*), fox squirrel (*Sciurus niger)*, and many small rodents and shrews. Bird species that are widespread include wild turkey (*Meleagris gallopavo*), northern bobwhite (*Colinus virginianus*), and the mourning dove (*Zenaida macroura*). Resident and migratory waterfowl are also common. Ibis (subfamily *Threskiornithinae*), cormorants (family *Phalacrocoracidae*), herons and egrets (family *Ardeidae*), and belted kingfisher (*Ceryle alcyon*) are common throughout flooded areas. Common songbirds include red-eyed vireo (*Vireo olivaceus*), cardinal (family *Cardinalidae*), tufted titmouse (*Baeolophus bicolor*), ruby-throated hummingbird (*Archilochus colubris*), eastern towhee (*Pipilo erythrophthalmus*), wood thrush (*Hylocichla mustelina*), summer tanager (*Piranga rubra*), blue-gray gnatcatcher (*Polioptila caerulea*), hooded warbler (*Wilsonia citrina*), and Carolina wren (*Thryothorus ludovicianus*). Common herpetofauna include box turtle (*Terrapene* spp.), common garter snake (*Thamnophis sirtalis*), eastern diamondback rattlesnake (*Crotalus adamanteus*), timber rattlesnake (*Crotalus horridus*), and American alligator (*Alligator mississippiensis*) (MCAS Cherry Point 2012).

3.3.2.3 Threatened and Endangered Species

MCAS Cherry Point is located within Craven County, North Carolina, which is home to ten species that are federally listed as threatened or endangered, or a candidate for listing. The species are:

- Red-cockaded woodpecker (*Picoides borealis*) (Endangered),
- Red knot (*Calidris canutus*) (Threatened),
- Eastern black rail (*Laterallus jamaicensis ssp. jamaicensis*) (Threatened),
- Northern Long-eared bat (*Myotis septentrionalis*) (Threatened),
- West Indian manatee (*Trichechus manatus*) (Threatened),
- Green sea turtle (*Chelonia mydas*) (Threatened),

- Leatherback sea turtle (*Dermochelys coriacea*) (Endangered),
- Rough-leaved loosestrife (*Lysimachia asperulaefolia*) (Endangered),
- Sensitive joint-vetch (*Aeschynomene virginica*) (Threatened), and
- American alligator (*Alligator mississippiensis*) [Threatened due to similarity in appearance]

The American alligator is listed by the U.S. Fish and Wildlife Service as threatened due to similarity of appearance to the threatened American crocodile (*Crocodylus acutus*). Federal agencies are not responsible for fulfilling the requirements of section 7 with respect to actions that may affect species protected due to similarity of appearance. Therefore, this species is not analyzed in this EA.

The bald eagle (*Haliaeetus leucocephalus*) has been removed from the endangered species list, but it remains protected under the BGEPA. Protective measures and monitoring requirements for bald eagles, described in this chapter, are requirements of MCAS Cherry Point's permit under this law.

No designated critical habitat or EFH is located within the project area.

3.3.3 Environmental Consequences

3.3.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur and there would be no change to biological resources. Therefore, no significant impacts to biological resources would occur with implementation of the No Action Alternative.

3.3.3.2 Alternative 1 (Preferred Alternative)

The majority of the proposed demolition and construction associated with the Proposed Action would occur in a previously disturbed area of the base that support no vegetation and provides no natural habitat to wildlife. Approximately 26.3 acres of pine forest and 0.3 acres of mixed pine-hardwood forest occurs within the footprint of the Proposed Action. Some of this natural vegetation would be removed for the realignment of Slocum Road and construction of the new ECF, and this would also remove wildlife habitat. However, the small area would represent only a fraction of the natural vegetation and wildlife habitat on the base. Noise could displace wildlife temporarily during construction activities in the area immediately surrounding the construction site.

Pedestrian surveys of the project site were conducted in June 2019 to survey for threatened and endangered species and suitable habitat. No threatened and endangered species were observed within the project area. A review of the North Carolina Natural Heritage database found no known occurrences of any federally protected species in the project area. Due to the lack of suitable habitat, the lack of known occurrences, and the lack of observed species within areas of potentially suitable habitats in the project study area, the Proposed Action is not anticipated to have any effect on protected habitats, plants, or animals. There would be no significant impact on threatened and endangered species and no formal consultation between the Marine Corps and U.S. Fish and Wildlife Service or the National Marine Fisheries Service would be required.

Therefore, implementation of the Preferred Alternative would not result in significant impacts to biological resources.

3.4 Water Resources

This discussion of water resources includes surface water, wetlands, and floodplains. This section also discusses the physical characteristics of wetlands, etc.; terrestrial wildlife and vegetation are addressed in **Section 3.3**, Biological Resources.

Surface water resources generally consist of wetlands, lakes, rivers, and streams. Surface water is important for its contributions to the economic, ecological, recreational, and human health of a community or locale. A Total Maximum Daily Load is the maximum amount of a substance that can be assimilated by a water body without causing impairment. A water body can be deemed impaired if water quality analyses conclude that exceedances of water quality standards occur.

Wetlands are jointly defined by USEPA and USACE as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." Wetlands generally include "swamps, marshes, bogs and similar areas."

Floodplains are areas of low-level ground present along rivers, stream channels, large wetlands, or coastal waters. Floodplain ecosystem functions include natural moderation of floods, flood storage and conveyance, groundwater recharge, and nutrient cycling. Floodplains also help to maintain water quality and are often home to a diverse array of plants and animals. In their natural vegetated state, floodplains slow the rate at which the incoming overland flow reaches the main water body. Floodplain boundaries are most often defined in terms of frequency of inundation, that is, the 100-year and 500-year flood. Floodplain delineation maps are produced by the Federal Emergency Management Agency and provide a basis for comparing the locale of the Proposed Action to the floodplains.

3.4.1 Regulatory Setting

The CWA establishes federal limits, through the NPDES program, on the amounts of specific pollutants that can be discharged into surface waters to restore and maintain the chemical, physical, and biological integrity of the water. The NPDES program regulates the discharge of point (i.e., end of pipe) and nonpoint sources (i.e., stormwater) of water pollution.

The North Carolina NPDES stormwater program requires construction site operators engaged in clearing, grading, and excavating activities that disturb one acre or more to obtain coverage under an NPDES Construction General Permit for stormwater discharges. Construction or demolition that necessitates an individual permit also requires preparation of a Notice of Intent to discharge stormwater and a Stormwater Pollution Prevention Plan that is implemented during construction. As part of the 2010 Final Rule for the CWA, titled *Effluent Limitations Guidelines and Standards for the Construction and Development Point Source Category*, activities covered by this permit must implement non-numeric erosion and sediment controls and pollution prevention measures.

Wetlands are currently regulated by the USACE under section 404 of the CWA as a subset of all "Waters of the United States." Waters of the United States are defined as (1) traditional navigable waters, (2) wetlands adjacent to navigable waters, (3) nonnavigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow perennially or have continuous flow at

least seasonally (e.g., typically 3 months), and (4) wetlands that directly abut such tributaries under section 404 of the CWA, as amended, and are regulated by USEPA and the USACE. The CWA requires that North Carolina establish a section 303(d) list to identify impaired waters and establish Total Maximum Daily Loads for the sources causing the impairment.

Section 404 of the CWA authorizes the Secretary of the Army, acting through the Chief of Engineers, to issue permits for the discharge of dredge or fill into wetlands and other Waters of the United States. Any discharge of dredge or fill into Waters of the United States requires a permit from the USACE.

Section 438 of the Energy Independence and Security Act establishes storm water design requirements for development and redevelopment projects. Under these requirements, federal facility projects larger than 5,000 square feet must "maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of flow."

EO 11990, *Protection of Wetlands,* requires that federal agencies adopt a policy to avoid, to the extent possible, long- and short-term adverse impacts associated with destruction and modification of wetlands and to avoid the direct and indirect support of new construction in wetlands whenever there is a practicable alternative.

EO 11988, *Floodplain Management*, requires federal agencies to avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development unless it is the only practicable alternative. Flood potential of a site is usually determined by the 100-year floodplain, which is defined as the area that has a one percent chance of inundation by a flood event in a given year.

3.4.2 Affected Environment

The following discussions provide a description of the existing conditions for each of the categories under water resources at MCAS Cherry Point. Water Resources can be seen in **Figure 3.4-1**.

3.4.2.1 Surface Water

Surface water includes all lakes, ponds, rivers, streams, and impoundments, within a defined area or watershed. MCAS Cherry Point is located within the lower basin of the Neuse River Watershed. The Neuse River bounds the installation to the north, and two perennial streams are located within the boundaries of the installation, Slocum and Hancock Creeks. Slocum Creek is located on the west side of the installation and flows north into the Neuse River; Hancock Creek bounds MCAS Cherry Point to the east and also flows north into the Neuse River. Tucker Creek flows onto the northwest portion of the installation and joins Slocum Creek just south of the confluence with the Neuse River (MCAS Cherry Point 2012).

Figure 3.4-1. Water Resources near Proposed Action Area at MCAS Cherry Point

MCAS Cherry Point also contains multiple small tributaries that feed into the perennial streams and Neuse River. These small streams have generally intermittent flow, especially in inland areas. Stream levels tend to be higher during the winter months when evapotranspiration rates are lower (MCAS Cherry Point 2012).

The project site is located adjacent to Slocum Creek and overlaps with a small unnamed tributary to Slocum Creek.

3.4.2.2 Wetlands

There are 1,234 acres of wetlands within the boundaries of MCAS Cherry Point. There are approximately 734 acres of forested wetlands on the installation, the majority of which are located in the riparian zones of the major streams and their tributaries. Blackwater swamps occur within the inland floodplains of the tributary streams. During the stream assessment and wetland delineation for the project area, the dominant trees and shrubs observed in forested wetlands included loblolly pine, longleaf pine, sweetgum, blackgum, red maple, southern wax myrtle, bald cypress, sweetbay magnolia, American beautyberry, dwarf palmetto, groundseltree, and red bay. Dominant species observed in the herbaceous layer typically included chalky bluestem, giant cane, jewelweed, greenbrier, crossvine, smartweed, Marsh parsley, lizard's tail, microstegium, woodoats, and arrow arum. There are approximately 168 acres of emergent wetland on the installation, which is found along the edges of the Neuse River, Slocum Creek, Hancock Creek, and their larger tributaries. These emergent wetlands contain big cordgrass (*Spartina cynosuroides*), black needlerush (*Juncus roemerianus*), Jamaica swamp sawgrass (*Cladium mariscus* spp. *Jamaicense*), and broadleaf cattail (*Typha latifolia*). The remaining wetlands on the installation are small amounts of unconsolidated bottom and scrub-shrub wetland (MCAS Cherry Point 2012). Wetlands in the vicinity of the project area can be seen in **Figure 3.4-1**.

3.4.2.3 Floodplains

Parts of MCAS Cherry Point are located within the 500-year and 100-year floodplains associated with the various surface water bodies located on the installation. Small portions of the project site are located within Federal Emergency Management Agency Zone X, (0.2 percent chance of flooding annually, or the 500-year floodplain) and Zone AE, (1 percent chance of flooding annually, or the 100-year floodplain). These floodplains are associated with an unnamed tributary to Slocum Creek and Slocum Creek. The area proposed for construction of the new ECF is not located within a floodplain.

3.4.3 Environmental Consequences

In this EA the analysis of water resources looks at the potential impacts on surface water, wetlands, and floodplains. The analysis of surface water quality considers the potential for impacts that may change the water quality, including both improvements and degradation of current water quality. The impact assessment of wetlands considers the potential for impacts that may change the local hydrology, soils, or vegetation that support a wetland. The analysis of floodplains considers if any new construction is proposed within a floodplain or may impede the functions of floodplains in conveying floodwaters.

3.4.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur and there would be no change to baseline water resources. Therefore, no significant impacts to water resources would occur with implementation of the No Action Alternative.

3.4.3.2 Proposed Action (Preferred Alternative) Potential Impacts

The Proposed Action would widen Slocum Road from two lanes to four lanes and relocate the road to better comply with ESQD criteria regarding PTRs, provide an additional two-lane bridge beside the existing two-lane bridge over Slocum Creek, and provide improved gate and inspection facilities via a new ECF. As shown on **Figure 3.4-1**, the project footprint would impact an unnamed tributary of Slocum Creek. The filling of this area would require redirection of the stream, or placing a culvert in the stream to allow the area to be covered with concrete. The Proposed Action would impact approximately 5.3 acres of wetlands, 38,031 SF (0.9 acres) of stream buffer permanently, 3,239 SF (0.07 acres) of stream buffer temporarily, and 254 LF of stream. No coastal wetlands would be impacted by the Proposed Action.

A stream assessment and wetland delineation for the project area have been completed and the Jurisdictional Determination is under review by USACE. Once approved, an Individual Permit would be completed to comply with section 404 of the CWA. Mitigation for stream, wetland, and riparian buffer impacts may be required and may include in-kind stream restoration, or purchase of mitigation credits. The type and quantity or required mitigation will be determined through the permitting process. While there would be minor, negative impacts on wetlands and surface waters, these impacts would be lessened through required mitigation. There are no coastal wetland impacts associated with the Proposed Action. Therefore, the impacts to wetlands, surface waters, and floodplains would be less than significant under the Proposed Action.

The proposed construction and demolition activities with ground disturbance would contribute to stormwater runoff which potentially degrades water quality of nearby surface waters from increased sedimentation. This impact would be temporary during demolition and construction activities and would be reduced from implementation of BMPs such as silt fencing around the construction site. The additional paved areas from the proposed roadway, ECF, and parking areas would increase the impervious surface, further increasing stormwater runoff. Two stormwater control features would be constructed as part of the Proposed Action to receive stormwater runoff from the project area. All construction and demolition would be done in adherence to MCAS Cherry Point's state-required Stormwater Pollution Prevention Plan, as well as all required Erosion and Sedimentation control procedures. Adherence to these procedures would ensure that surface waters remain protected from uncontrolled erosion and sedimentation from exposed soil during construction activities. Additionally, low impact development techniques would be incorporated where practicable to restore and maintain hydrology and groundwater recharge.

During bridge construction, minor substrate impacts that may increase turbidity would be expected; however, impacts to adjacent downstream receiving waters would be minimized using erosion control measures.

Therefore, implementation of the Preferred Alternative would not result in significant impacts to water resources.

3.5 Coastal Zone

The coastal zone is the interface between land and water and is vital to the well-being of our county. It supports half of the nation's population and supports ecologically important habitat and natural resources.

3.5.1 Regulatory Setting

Through the CZMA of 1972, Congress established national policy to preserve, protect, develop, restore, or enhance resources in the coastal zone. This Act encourages coastal states to properly manage use of their coasts and coastal resources, prepare and implement coastal management programs, and provide for public and governmental participation in decisions affecting the coastal zone. To this end, CZMA imparts an obligation upon federal agencies whose actions or activities affect any land or water use or natural resource of the coastal zone to be carried out in a manner consistent to the maximum extent practicable with the enforceable policies of federally approved state coastal management programs. As a federal agency, the Marine Corps is required to determine whether its proposed activities would affect the coastal zone. This takes the form of a consistency determination, a negative determination, or a determination that no further action is necessary.

MCAS Cherry Point is located in Craven County, North Carolina, which is located in North Carolina's coastal zone. The North Carolina Coastal Area Management Act (CAMA) of 1974 was passed in accordance with the federal CZMA. It establishes a cooperative program of coastal area management between local and state governments. CAMA establishes the North Carolina Coastal Resources Commission, required local land use planning in the coastal counties, and provides for a program for regulating development. The North Carolina Coastal Management Program was federally approved in 1978. North Carolina's coastal zone includes the 20 counties that are adjacent to, adjoining, intersected by, or bounded by the Atlantic Ocean or any coastal sound, including Craven County. The coastal zone extends seaward to the 3 nautical mile territorial sea limit.

The Craven County Comprehensive Plan (CAMA Core Land Use Plan), adopted by the Craven County Board of Commissioners on August 3, 2009 and certified by the Coastal Resource Commission on October 30, 2010, addresses land use planning in relation to CAMA. According to this Comprehensive Land Use Plan, MCAS Cherry Point – Marine Air Station is considered as protected lands; however, the project study area is not located within these protected lands or any other designated protected lands. The Proposed Action on MCAS Cherry Point would be consistent with the operation the applicable policies of the North Carolina Coastal Management Program and Craven County's comprehensive plan policies.

3.5.2 Affected Environment

There are two tiers of regulatory review for projects within the coastal zone. The first tier includes projects that are located in Areas of Environmental Concern, which are designated by the state. The second tier includes land uses with the potential to affect coastal waters, even though they are not

defined as Areas of Environmental Concern. These proposed projects are reviewed under the CAMA General Policy Guidelines. These policies are explained in more detail below.

The North Carolina Coastal Resources Commission designated Areas of Environmental Concern within the 20 coastal counties and set rules for managing development within these areas. An Area of Environmental Concern is an area of natural importance. These areas may be easily destroyed by erosion or flooding, or may have environmental, social, economic, or aesthetic values that make them valuable. The classification protects the area from uncontrolled development. Projects located within an Area of Environmental Concern undergo a more thorough level of regulatory review.

Areas of Environmental Concern include almost all coastal waters and about three percent of the land in the 20 coastal counties. The four categories of Areas of Environmental Concern are:

- The Estuarine and Ocean System, which includes public trust areas, estuarine coastal waters, coastal shorelines, and coastal wetlands;
- The Ocean Hazard System, which includes components of barrier island systems;
- Public Water Supplies, which include certain small surface water supply watersheds and public water supply well fields; and
- Natural and Cultural Resource Areas, which include coastal complex natural areas; areas providing habitat for federal or state designated rare, threatened or endangered species; unique coastal geologic formations; or significant coastal archaeological or historic resources.

General Policy Guidelines

Projects that are located outside of an Area of Environmental Concern are reviewed under the General Policy Guidelines. The North Carolina CAMA sets forth 11 General Policy Guidelines addressing:

- Coastal energy policies;
- Coastal water quality policies;
- Floating structure policies;
- Mitigation policies;
- Policies on beneficial use and availability of materials resulting from the excavation or maintenance of navigational channels;
- Policies on use of coastal airspace;
- Policies on ocean mining;
- Policies on water- and wetland-based target areas for military training areas;
- Post-disaster policies;
- Shorefront access policies; and
- Shoreline erosion policies.

The purpose of these rules is to establish generally applicable objectives and policies to be followed in the public and private use of land and water areas within the coastal area of North Carolina.

3.5.3 Environmental Consequences

The location and extent of a proposed action needs to be evaluated for its potential effects on a project site and adjacent land uses. Factors affecting a proposed action in terms of land use include its compatibility with on site and adjacent land uses, restrictions on public access to land, or change in an existing land use that is valued by the community.

3.5.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur and there would be no change to the existing land use within the coastal zone of North Carolina. Therefore, no significant impacts to the coastal zone would occur with implementation of the No Action Alternative.

3.5.3.2 Proposed Action (Preferred Alternative) Potential Impacts

The Proposed Action would not have any significant coastal effect. Minor substrate impacts that may increase turbidity would be expected during bridge construction; however, impacts to adjacent downstream receiving waters would be minimized using erosion control measures. There are no coastal wetland impacts associated with the Proposed Action. The installation would adhere to all applicable state and federal regulations regarding the construction, maintenance, and operation of the new ECF, bridge, and new roadway. Therefore, the proposed project would be consistent, to the maximum extent practicable, with the enforceable policies of North Carolina's federally approved coastal management program.

MCAS Cherry Point has developed a Coastal Consistency Determination that finds the Proposed Action to be consistent with the enforceable policies of North Carolina's CAMA.

Therefore, implementation of the Preferred Alternative would not result in significant impacts to land use within the coastal zone.

3.6 Traffic and Transportation

Transportation includes all of the air, land, and sea routes with the means of moving passengers and goods. A transportation system can consist of any or all of the following: roadways, bus routes, railways, subways, bikeways, trails, waterways, airports, and taxis, and can be looked at on a local or regional scale.

Traffic is commonly measured through average daily traffic and design capacity. These two measures are used to assign a roadway with a corresponding level of service (LOS). The LOS designation is a professional industry standard used to describe the operating conditions of a roadway segment or intersection. The LOS is defined on a scale of A to F that describes the range of operating conditions on a particular type of roadway facility. LOS A through LOS B indicates free flow travel. LOS C indicates stable traffic flow. LOS D indicates the beginning of traffic congestion. LOS E indicates the nearing of traffic breakdown conditions. LOS F indicates stop-and-go traffic conditions and represents unacceptable congestion and delay.

3.6.1 Regulatory Setting

EO 13834 encourages government entities to improve building efficiency, performance, and management by including in the planning for new buildings or leases, cost-effective strategies to optimize sustainable space usage and consideration of existing community transportation planning and infrastructure, including access to public transit. This EO encourages the coordination of federal real property discussions with local communities in an effort to encourage planned transportation investments that aim to support public transit access.

3.6.2 Affected Environment

Access to MCAS Cherry Point is provided through four ECFs. These are the Roosevelt, Cunningham, Slocum, and Catawba gates. The Roosevelt ECF operates 24 hours per day, seven days a week. The other three ECFs operate on more limited schedules. The Cunningham gate operates during peak traffic times on weekdays to alleviate inbound and outbound traffic, but because it is located within an airfield runway clear zone, it is otherwise closed (MCAS Cherry Point 2013). The Slocum Gate operates weekdays as inbound only for the AM Peak hour and then switches to inbound and outbound operations until the designated closing time (MCAS Cherry Point 2020).

MCAS Cherry Point is generally laid out in a grid network of roadways within the western quadrant of the runways. Roosevelt Boulevard is the major north-south arterial through the air station. Housing and support services are generally on the west side of Roosevelt Boulevard, while bachelor housing, administrative, training, and maintenance facilities are generally on the east side, nearer the airfield. Most roads on the air station have one travel lane in each direction. Intersections are generally STOP controlled or signalized. Speed limits are 20 miles per hour (mph) for many roads, and up to 45 mph for arterials (MCAS Cherry Point 2013).

Traffic volume on Slocum Road has been reduced to about 9,800 ppd, through restricted gate hours which is permissible within the PTR arcs of the magazine area.

3.6.3 Environmental Consequences

Impacts to ground traffic and transportation are analyzed by considering the possible changes to existing traffic conditions and the capacity of area roadways from proposed increases in commuter and construction traffic.

3.6.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur and there would be no change to transportation. Therefore, no significant impacts would occur with implementation of the No Action Alternative.

3.6.3.2 Alternative 1 (Preferred Alternative)

During construction there would be minor disturbances to traffic flow from the entrance and exit of construction related equipment and materials to the proposed project site. All traffic related issues from construction would be temporary in nature and would not lead to permanent increases in traffic congestion or impede traffic flow in the long-term.

The Proposed Action would alter the existing traffic patterns along Slocum Road and Alexander Road. Currently, the roadways are parallel and intersect with each other, Slocum Road being the main access roadway from US-70 through the existing Slocum Road ECF. Alexander Road is a primary local roadway within the housing area for the installation. The Proposed Action would realign both roadways and create a new intersection along the realigned Slocum Road with Stanley Road. Existing Alexander Road would also be realigned to intersect with Stanley Road, requiring all traffic on Alexander Road and Stanley Road to utilize the new Slocum Road and Stanley Road intersection. This project would also replace the existing ECF at Slocum Road and provide a new ECF that will serve as the main entrance and exit point into and out of MCAS Cherry Point. The proposed layout of the new ECF and roadway network are illustrated in **Figure 2.3-1**.

In association with the design of the new roadway alignment and Slocum Road ECF, a traffic analysis was completed to ensure that the roadway network changes associated with the Proposed Action would function at acceptable LOS for existing and future needs. The traffic analysis was conducted for the intersections and critical roadway segments using 2040 projected traffic volumes using the SimTraffic simulation method. Specific locations of the analysis include:

- New intersection of Stanley Road at Slocum Road,
- New intersection of the realigned Slocum Road at Old Slocum Road,
- New U-turn on Slocum Road between Stanley Road and Old Slocum Road intersections, and
- New Slocum Gate ECF.

For the new intersection of Stanley Road at Slocum Road, analysis results indicated that the worst movement delay would be less than 20 seconds in the AM peak and less than 3 seconds in each of the Mid-Day and PM peaks. On the Stanley Road Northbound approach, drivers would anticipate a 9.3 second delay to turn right. The intersection delays would be higher in the AM peak hour than in the other peak hours due to the heavy influx of drivers heading into the facility to report to work through the Slocum Gate ECF. The results also show that queuing on each of the intersection approaches would be contained to storage (MCAS Cherry Point 2020).

For the new intersection of the realigned Slocum Road at Old Slocum Road, the analysis results indicated that the worst movement delay would be less than 10 seconds per vehicle in each of the three peak periods (MCAS Cherry Point 2020).

For the new U-turn on Slocum Road between Stanley Road and Old Slocum Road intersections, the analysis results indicated that the U-turn delay would be less than 20 seconds per vehicle in the peak periods, and queuing would be accommodated within the storage (MCAS Cherry Point 2020).

A queue analysis for the new Slocum Gate ECF was conducted as part of the traffic analysis. The simulation included 5 ID check lanes and a processing rate of 325 vehicles per hour per lane, which is 11 seconds per vehicle. The results of the analysis indicated the 95th percentile queue length during the AM peak, when traffic is heaviest, would be 445 feet. The max queue length would be 572 feet during the AM peak. The new ID check area would be located over 1 mile from the US 70 interchange (MCAS Cherry Point 2020).

Based on the traffic analysis, the LOS for the new roadway alignment would be acceptable at all intersections. Traffic at the Roosevelt ECF would be anticipated to decrease when the new Slocum ECF becomes operational as the main entry and exit point for the installation. The traffic restrictions due to ESQD arcs along Slocum Road would no longer be required. There would be long-term, minor impacts to traffic at MCAS Cherry Point as a result of the new roadway alignment and construction of the new ECF at Slocum Road.

Therefore, implementation of the Preferred Alternative would not result in significant impacts to transportation or traffic flow.

3.7 Public Health and Safety

This discussion of public health and safety includes consideration for any activities, occurrences, or operations that have the potential to affect the safety, well-being, or health of members of the public. A safe environment is one in which there is no, or optimally reduced, potential for death, serious bodily injury or illness, or property damage. The primary goal is to identify and prevent potential accidents or impacts on the general public. Public health and safety within this EA discusses information pertaining to community emergency services, construction activities, operations, and environmental health and safety risks to children.

Public health and safety during construction, demolition, and renovation activities is generally associated with construction traffic, as well as the safety of personnel within or adjacent to the construction zones.

Operational safety may refer to the actual use of the facility or built-out proposed project, or training or testing activities and potential risks to inhabitants or users of adjacent or nearby land and water parcels. Safety measures are often implemented through designated safety zones, warning areas, or other types of designations.

Environmental health and safety risks to children are defined as those that are attributable to products or substances a child is likely to come into contact with or ingest, such as air, food, water, soil, and products that children use or to which they are exposed.

3.7.1 Regulatory Setting

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

3.7.2 Affected Environment

Currently, Slocum Road is encroached by ESQD arcs of the magazine area. When in elevated Force Protection conditions, ID checks at the Slocum ECF cause inbound traffic to be backed up onto U.S. Highway 70, and NC Highway 101, causing delays and potentially endangering motorists. Both existing lanes of Slocum Road are utilized for inbound traffic during the peak morning hours, leaving no return path for rejected vehicles. Due to substandard inspection facilities at Slocum Road and the lack of a Pass

& ID office there, most of the commercial vehicle inspections each day are performed at the Main Gates. Sentries manning the ID checkpoints must stand in the middle of the road or on a muddy shoulder, exposing them to adverse weather conditions and traffic hazards. At night, portable, generator powered lighting units provide the only illumination. Lighting is inadequate for properly inspecting vehicle interiors. These factors reduce sentry efficiency and safety.

The intent of the Proposed Action is to provide to provide significant and necessary security, safety, and transportation improvements along Slocum Road.

3.7.3 Environmental Consequences

The safety and environmental health analysis addresses issues related to the health and well-being of military personnel and civilians living on or in the vicinity of MCAS Cherry Point. Specifically, this section provides information on hazards associated with demoltion and construction associated with the Proposed Action and the long-term impact of realigning Slocum Road and contructing the new Slocum Road ECF. Additionally, this section addresses the environmental health and safety risks to children.

3.7.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur. The current Slocum Road ECF does not provide appropriate safety and security for the sentries manning ID check points. Slocum Road is currently encroached by ESQD arcs, which results in lowered roadway capacity. Implementation of the No Action Alternative would result in long-term negative impacts to public health and safety at MCAS Cherry Point.

3.7.3.2 Alternative 1 (Preferred Alternative)

During construction and demolition, contractors would be required to wear proper personal protective equipment such as hard hats, gloves, steel toed boots, eye protection, and long pants/long sleeve shirts as necessary, and safe equipment operation procedures would be followed. Construction and demolition activities occurring at MCAS Cherry Point are required to be conducted in a manner that is consistent with all federal regulations, including all applicable Occupational Safety and Health Administration and Marine Corps requirements.

Once operational, the new Slocum Road ECF would function as the main entry and exit point for MCAS Cherry Point. The Proposed Action would provide proper inspection facilities for commercial vehicles entering the installation, enhance the service of ordnance deliveries to the station ordnance areas, increase the ability to quickly and efficiently process inbound traffic on Slocum Road, and upgrade the entrance and traffic controls to meet current safety and security requirements. The new ECF would provide AT/FP features and comply with AT/FP regulations, and physical security mitigation in accordance with DoD Minimum Anti-Terrorism Standards for Buildings.

The newly realigned Slocum Road would not be encroached by ESQD arcs of the magazine area. This would create the long-term benefit of removing most installation traffic within the ESQD arcs. The overall impacts to public health and safety as a result of the Proposed Action would be beneficial.

There are no environmental health or safety risks associated with the Proposed Action that would disproportionately affect children.

Therefore, implementation of the Preferred Alternative would not result in significant impacts to public health and safety.

3.8 Summary of Potential Impacts to Resources and Impact Avoidance and Minimization

A summary of the potential impacts associated with each of the action alternatives and the No Action Alternative is presented in **Table 3.8-1**. There are no anticipated significant impacts.

Table 3.8-1. Summary of Potential Impacts to Resource Areas

Resource Area	*No Action Alternative*	*Alternative 1 (Preferred Alternative)*
Air Quality	The No Action Alternative would have no significant impacts to air quality.	• The emissions associated with construction and demolition would be temporary and localized. • Estimated emissions would not exceed any of the comparative thresholds. • The emissions would contribute directly to emission of GHGs from combustion of fossil fuels.
Noise	The No Action Alternative would have no significant impacts to the noise environment.	• Under the Proposed Action, there would be short-term and temporary noise generated by construction and demolition equipment and activities. • The predominate noise source at MCAS Cherry Point is from aircraft operations and it is expected that the construction noise would cause temporary minor adverse impacts to residential units nearest project site. • Operation of the ECF would produce longer-term noise impacts for the nearby residences. In order to reduce operational noise, an earthen berm would be constructed to the south of the Vehicle Inspection and Gate House area. The earthen berm will would act as a sound barrier and help with any adverse noise impacts experienced by the nearer residences to the project area.
Biological Resources	The No Action Alternative would have no significant impacts to biological resources.	• The majority of the proposed construction would occur in previously disturbed areas that support no native vegetation or wildlife. • The Proposed Action would remove small areas of natural vegetation. The impacts to wildlife would be minimal.
Water Resources	The No Action Alternative would have no significant impacts to water resources.	• The Proposed Action would impact approximately 5.3 acres of wetlands, 38,031 SF (0.9 acres) of stream buffer permanently, 3,239 SF (0.07 acres) of stream buffer temporarily, and 254 LF of stream. An individual wetland permit would be completed to comply with section 404 of the CWA and to determine what mitigation would be required. • During bridge construction, minor substrate impacts that may increase turbidity would be expected; however, impacts to adjacent downstream receiving waters would be minimized using erosion control measures. • The proposed construction and demolition activities with ground disturbance would contribute to stormwater runoff which potentially degrades water quality of nearby surface waters from increased sedimentation. This impact would be temporary during demolition and construction activities and would be reduced from implementation of BMPs such as silt fencing around the construction site. • The additional paved areas from the proposed roadway, ECF, and parking areas would increase the impervious surface, further increasing stormwater runoff. Two stormwater control features would be constructed as part of the Proposed Action to receive stormwater runoff from the project area. All construction and demolition would be done in adherence to MCAS Cherry Point's state-required Stormwater

Table 3.8-1. Summary of Potential Impacts to Resource Areas

Resource Area	*No Action Alternative*	*Alternative 1 (Preferred Alternative)*
		Pollution Prevention Plan, as well as all required Erosion and Sedimentation control procedures.
Coastal Zone	The No Action Alternative would have no significant impacts to coastal zone.	• Minor substrate impacts that may increase turbidity would be expected during bridge construction; however, impacts to adjacent downstream receiving waters would be minimized using erosion control measures. • The Proposed Action would be consistent, to the maximum extent practicable, with the enforceable policies of North Carolina's federally approved coastal management program.
Traffic and Transportation	The No Action Alternative would have no significant impacts to traffic and transportation.	• During construction there would be minor disturbances to traffic flow from the entrance and exit of construction related equipment and materials to the proposed project site. • Based on the traffic analysis, the LOS for the new roadway alignment would be acceptable at all intersections. • Traffic at the Roosevelt ECF would be anticipated to decrease when the new Slocum ECF becomes operational as the main entry and exit point for the installation. • The traffic restrictions due to ESQD arcs along Slocum Road would no longer be required.
Public Health and Safety	The No Action Alternative would have a negative long-term impact to public health and safety.	• During construction at the Proposed Action sites, Occupational Safety and Health Act regulations, procedures, and anti-terrorism/force protection requirements would be followed. • The Proposed Action would provide proper inspection facilities for commercial vehicles entering the installation, enhance the service of ordnance deliveries to the station ordnance areas, increase the ability to quickly and efficiently process inbound traffic on Slocum Road, and upgrade the entrance and traffic controls to meet current safety and security requirements. • The newly realigned Slocum Road would not be encroached by ESQD arcs of the magazine area. • There are no environmental health or safety risks associated with the Proposed Action that would disproportionately affect children.

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4 Cumulative Impacts

This section (1) defines cumulative impacts, (2) describes past, present, and reasonably foreseeable future actions relevant to cumulative impacts, (3) analyzes the incremental interaction the Proposed Action may have with other actions, and (4) evaluates cumulative impacts potentially resulting from these interactions.

4.1 Definition of Cumulative Impacts

The approach taken in the analysis of cumulative impacts follows the objectives of the NEPA, CEQ regulations, and CEQ guidance. Cumulative impacts are defined in 40 CFR section 1508.7 as "the impact on the environment that results from the incremental impact of the action when added to the other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."

To determine the scope of environmental impact analyses, agencies shall consider cumulative actions, which when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact analysis document.

In addition, CEQ and USEPA have published guidance addressing implementation of cumulative impact analyses—Guidance on the Consideration of Past Actions in Cumulative Effects Analysis (CEQ 2005) and Consideration of Cumulative Impacts in U.S. Environmental Protection Agency (USEPA) Review of NEPA Documents (USEPA 1999). CEQ guidance entitled *Considering Cumulative Impacts Under NEPA* (1997) states that cumulative impact analyses should:

"…determine the magnitude and significance of the environmental consequences of the Proposed Action in the context of the cumulative impacts of other past, present, and future actions...identify significant cumulative impacts…[and]…focus on truly meaningful impacts."

Cumulative impacts are most likely to arise when a relationship or synergism exists between a proposed action and other actions expected to occur in a similar location or during a similar time period. Actions overlapping with or in close proximity to the Proposed Action would be expected to have more potential for a relationship than those more geographically separated. Similarly, relatively concurrent actions would tend to offer a higher potential for cumulative impacts. To identify cumulative impacts, the analysis needs to address the following three fundamental questions.

- Does a relationship exist such that affected resource areas of the Proposed Action might interact with the affected resource areas of past, present, or reasonably foreseeable actions?
- If one or more of the affected resource areas of the Proposed Action and another action could be expected to interact, would the Proposed Action affect or be affected by impacts of the other action?
- If such a relationship exists, then does an assessment reveal any potentially significant impacts not identified when the Proposed Action is considered alone?

4.2 Scope of Cumulative Impacts Analysis

The scope of the cumulative impacts analysis involves both the geographic extent of the effects and the time frame in which the effects could be expected to occur. For this EA, the study area delimits the geographic extent of the cumulative impacts analysis. In general, the study area will include those areas previously identified in Chapter 3 for the respective resource areas. The time frame for cumulative impacts centers on the timing of the Proposed Action.

Another factor influencing the scope of cumulative impacts analysis involves identifying other actions to consider. Beyond determining that the geographic scope and time frame for the actions interrelate to the Proposed Action, the analysis employs the measure of "reasonably foreseeable" to include or exclude other actions. For the purposes of this analysis, public documents prepared by federal, state, and local government agencies form the primary sources of information regarding reasonably foreseeable actions. Documents used to identify other actions include notices of intent for Environmental Impact Statements (EIS) and EAs, management plans, land use plans, and other planning related studies.

4.3 Past, Present, and Reasonably Foreseeable Actions

This section will focus on past, present, and reasonably foreseeable future projects at and near the Proposed Action locale. In determining which projects to include in the cumulative impacts analysis, a preliminary determination was made regarding the past, present, or reasonably foreseeable action. Specifically, using the first fundamental question included in Section 4.1, it was determined if a relationship exists such that the affected resource areas of the Proposed Action included in this EA might interact with the affected resource area of a past, present, or reasonably foreseeable action. If no such potential relationship exists, the project was not carried forward into the cumulative impacts analysis. In accordance with CEQ guidance (CEQ 2005), these actions considered but excluded from further cumulative effects analysis are not catalogued here as the intent is to focus the analysis on the meaningful actions relevant to informed decision-making.

4.3.1 Past Actions

Grow the Force in North Carolina. The Marine Corps prepared an EIS in December 2009 to evaluate the environmental impacts associated with an increase in 9,900 Marine Corps and civilian personnel at Marine Corps Base Camp Lejeune, MCAS New River, and MCAS Cherry Point. Also analyzed was the construction of new infrastructure and demolition and upgrades to existing infrastructure to support the staff increases. No significant impacts to resources from the addition of personnel and construction of associated facilities at MCAS Cherry Point were identified. A Record of Decision for the action was published on February 2, 2010 (Federal Register / Vol. 75, No. 21). All construction projects at MCAS Cherry Point associated with the Grow the Force action are currently complete; therefore, there would be no temporal overlap with the construction proposed in this EA.

Basing the U.S. Marine Corps F-35 on the East Coast. The U.S. Department of the Navy prepared an EIS in May 2010 to evaluate the environmental impacts associated with basing of three F-35 operational squadrons and the Pilot Training Center at MCAS Beaufort in Beaufort, South Carolina, and eight operational squadrons at MCAS Cherry Point. To support the basing action, the Proposed Action

included: construction and renovation of airfield facilities and infrastructure necessary to accommodate and maintain the F-35 squadrons; changes to personnel to accommodate squadron staffing; and required F-35 training operations. The F-35 aircraft replace legacy Marine Corps F/A- 18A/B/C/D Hornet and AV-8B Harrier aircraft. The EIS determined that there would be no significant, immitigable impacts at MCAS Cherry Point. A Record of Decision for the action was published on December 15, 2010 (Federal Register /Vol. 75, No. 240).

Fleet Readiness Center East Facilities Improvements in Support of F-35 Depot Capability Establishment. The U.S. Department of the Navy prepared an EA in June 2013 to evaluate the environmental impacts associated with establishing depot-level maintenance capabilities for the F-35 aircraft at Fleet Readiness Center East at MCAS Cherry Point. Construction of new facilities and modification of an existing facility were considered. The analysis indicated there would be no significant impact to resources associated with the proposed construction of new facilities and modification of an existing facility in support of establishing the Fleet readiness Center.

4.3.2 Present and Reasonably Foreseeable Actions

U.S. 70, Havelock Bypass. In December 2016, a Record of Decision was signed by the Department of Transportation, Federal Highway Administration for the construction of a 10.3-mile four-lane divided bypass around the southwest side of the City of Havelock and MCAS Cherry Point (Federal Highway Administration 2016). The EIS concluded that there would be impacts from change in land use, impacts to community facilities from displacement of the Craven County Waste Transfer facility, water quality impacts from increased stormwater runoff, localized increases in noise from traffic, fragmentation of some plant communities, and impacts to wetlands. Construction is to be completed in 2021 (Federal Highway Administration 2015). There would be a temporal overlap with the construction under the Preferred Alternative analyzed in this EA.

Roadway Improvements in Support of Flightline Utilities Modernization. The Marine Corps prepared an EA in May of 2017 to evaluate the environmental impacts of making improvements to 5th Avenue and C Street and creating temporary parking areas to ensure these streets could accept the volume of traffic diverted from 6th Avenue and A Street during the flightline utilities modernization project with minimal impact to traffic flow and that adequate parking would be available to offset parking area closures (Department of the Navy 2017). The proposed roadway improvements would be implemented in two phases. Phase 1 would: establish temporary parking area(s); extend 5th Avenue at the northwest and southeast terminus points; and widen C Street. Phase 2 would: establish permanent replacement asphalt parking areas; and remove the temporary parking areas. Facility demolition would be required in some areas. Phase 1 of the project began in FY 2019 and Phase 2 will begin in FY 2021 with each phase requiring approximately two years. The EA concluded there would be minor to negligible adverse impacts during construction and positive impacts to traffic and transportation.

Construction of Fire Stations at MCAS Cherry Point. The Marine Corps prepared an EA in May of 2017 to evaluate the environmental impacts of replacing the Main and Satellite Fire Stations on MCAS Cherry Point (Department of the Navy 2020). One location was considered for construction of the Main Station, and two locations were considered for construction of the Satellite Station. Facility demolition would be

required in some areas for the existing stations. Construction will begin in FY 2022. The EA concluded that there would be minor to negligible impacts during construction.

4.4 Cumulative Impact Analysis

Where feasible, the cumulative impacts were assessed using quantifiable data; however, for many of the resources included for analysis, quantifiable data is not available and a qualitative analysis was undertaken. In addition, where an analysis of potential environmental effects for future actions has not been completed, assumptions were made regarding cumulative impacts related to this EA/EIS where possible. The analytical methodology presented in Chapter 3, which was used to determine potential impacts to the various resources analyzed in this document, was also used to determine cumulative impacts.

4.4.1 Air Quality

4.4.1.1 Description of Geographic Study Area

The study area for cumulative air quality impacts is the county within which the project would occur, Craven County. Past, present, and future actions have the potential to cumulatively increase the criteria air pollutants within the county.

4.4.1.2 Relevant Past, Present and Future Actions

The air emissions associated with past projects described in Section 4.3.1 were temporary during construction and demolition of those facilities and improvements and would not interact with the Proposed Action. There is a temporal overlap in the proposed realignment of Slocum Road with construction and demolition of the fire stations and the U.S. 70 Bypass project described in Section 4.3.2.

4.4.1.3 Cumulative Impact Analysis

The proposed U.S. 70 Bypass project did not include construction of any facilities, nor did the analysis calculate the construction emissions for the highway since the action would occur within an attainment area. The analysis for the Bypass focused on the potential for the project to increase MSATs from traffic. The analysis did not predict higher levels of MSATs since the project would improve the operation of an existing highway making travel more efficient.

Construction and demolition of the fire stations would occur within the same timeframe as the realignment of Slocum Road. As a worst-case scenario the anticipated emissions from that project are included in this cumulative analysis. As shown in **Table 4.4-1**, the cumulative emissions from these projects would not be significant. Therefore, implementation of the Proposed Action combined with the past, present, and reasonably foreseeable future projects, would not result in significant impacts within the ROI.

Table 4.4-1. Cumulative Analysis for Air Quality

Summary	*VOC tpy*	*CO tpy*	*NOx tpy*	*SO_2 tpy*	*PM_{10} tpy*	*$PM_{2.5}$ tpy*	*CO_2 MT/yr*
Fire Stations (construction year 2022)[1]	0.3	1.0	1.4	0.6	2.6	0.4	229
Proposed Action (construction year 2022)	1.92	12.48	16.27	0.64	1.22	1.18	2,193
Cumulative Emissions	1.95	13.48	17.67	1.24	3.82	1.58	2,422
Comparative Threshold	250	250	250	250	250	250	25,000
Exceed Threshold?	No	No	No	No	No	No	No

Source: [1] Department of the Navy 2020.

4.4.2 Noise

4.4.2.1 Description of Geographic Study Area

The study area for cumulative noise impacts would be the proposed project area for the realignment of Slocum Road and construction of the new ECF.

4.4.2.2 Relevant Past, Present and Future Actions

None of the projects described in Section 4.3.1 and 4.3.2 would have a cumulative interaction with the Preferred Alternative with respect to noise. The construction noise associated with those actions would also be temporary, localized, and in general masked by the aircraft noise at the installation.

4.4.2.3 Cumulative Impact Analysis

The noise associated with the Preferred Alternative would be temporary and not create a new permanent noise source. Therefore, implementation of the Proposed Action combined with the past, present, and reasonably foreseeable future projects, would not result in significant impacts within the ROI.

4.4.3 Biological Resources

4.4.3.1 Description of Geographic Study Area

The study area for cumulative impacts to biological resources would be the installation, with a focus on the areas proposed for site clearance.

4.4.3.2 Relevant Past, Present and Future Actions

The potential impact to wildlife and vegetation from past construction activities has already occurred and likely included removal of some areas of natural habitat. The Fire Stations construction project would overlap temporally with the Proposed Action.

4.4.3.3 Cumulative Impact Analysis

The Fire Stations construction project is mostly located in areas that are heavily disturbed with little natural habitat. This action anticipated the potential removal of pine forest if Satellite Station Site 2 were chosen for construction. Similar to the Proposed Action, the impact to wildlife would be minimal.

There is substantial, undeveloped pine forests within the installation that provides wildlife habitat. Therefore, implementation of the Proposed Action combined with the past, present, and reasonably foreseeable future projects, would not result in significant impacts within the ROI.

4.4.4 Water Resources

4.4.4.1 Description of Geographic Study Area

The study area for cumulative impacts to water resources would be the proposed project site and adjacent surface waters.

4.4.4.2 Relevant Past, Present and Future Actions

None of the projects described in Section 4.3.1 and 4.3.2 would have a cumulative interaction with the Preferred Alternative.

4.4.4.3 Cumulative Impact Analysis

None of the past, present, or future actions would overlap geographically with the Preferred Alternative. Therefore, implementation of the Proposed Action combined with the past, present, and reasonably foreseeable future projects, would not result in significant impacts within the ROI.

4.4.5 Traffic and Transportation

4.4.5.1 Description of Geographic Study Area

The study area for cumulative traffic and transportation impacts would be the installation.

4.4.5.2 Relevant Past, Present and Future Actions

All of the projects described in Section 4.3.1 and 4.3.2 have the potential to cumulatively interact for transportation impacts.

4.4.5.3 Cumulative Impact Analysis

Cumulative transportation impacts from past, present, and future actions within the ROI would be less than significant because all of the actions have included improvements to transportation and congestion within the installation. The personnel increases associated with past actions (Grow the Force, F-35 Beddown, and Fleet Readiness Center East) were accounted for through various infrastructure improvements. The present and future actions (US 70 Bypass and Flightline Modernization) would continue to improve the flow of traffic within the installation and access to the main gates. Relocating the Main and Satellite Fire Stations would not have significant impacts to traffic flow on the installation. Implementation of the Proposed Action would have long-term, minor impacts to traffic at MCAS Cherry Point as a result of the new roadway alignment and construction of the new ECF at Slocum Road. Therefore, implementation of the Proposed Action combined with the past, present, and reasonably foreseeable future projects, would not result in significant impacts within the ROI.

4.4.6 Public Health and Safety

4.4.6.1 Description of Geographic Study Area

The study area for cumulative public health and safety impacts would be the installation.

4.4.6.2 Relevant Past, Present and Future Actions

The Fire Stations construction project has the potential to overlap temporally with the Proposed Action.

4.4.6.3 Cumulative Impact Analysis

The construction timelines for the Proposed Action and the Fire Stations construction project could potentially overlap. Each construction project would be required to adhere to all safety requirements and guidelines to ensure protection of personnel on the site and bystanders. Neither of these projects represents unique situations or an increased safety risk. Implementation of the Proposed Action would lead to long-term positive impacts to safety at MCAS Cherry Point. There are no significant impacts to public health and safety expected from either of these projects. Therefore, implementation of the Proposed Action combined with the past, present, and reasonably foreseeable future projects, would not result in significant impacts within the ROI.

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5 Other Considerations Required by NEPA

5.1 Consistency with Other Federal, State, and Local Laws, Plans, Policies, and Regulations

In accordance with 40 CFR 1502.16(c), analysis of environmental consequences shall include discussion of possible conflicts between the Proposed Action and the objectives of federal, regional, state and local land use plans, policies, and controls. **Table 5.1-1** identifies the principal federal and state laws and regulations that are applicable to the Proposed Action and describes briefly how compliance with these laws and regulations would be accomplished.

Table 5.1-1. Principal Federal and State Laws Applicable to the Proposed Action

Federal, State, Local, and Regional Land Use Plans, Policies, and Controls	***Status of Compliance***
National Environmental Policy Act; CEQ NEPA implementing regulations; Navy procedures for Implementing NEPA; MCO 5090.2, Volume 12, Environmental Planning and Review	Completion of EA will document compliance
Clean Air Act	Completion of EA will document compliance
Clean Water Act	Approval of Individual section 404/401 Permit will document compliance.
Coastal Zone Management Act	Concurrence with Coastal Consistency Determination will document compliance.
National Historic Preservation Act	Completion of EA will document compliance
Endangered Species Act	Completion of EA will document compliance
Migratory Bird Treaty Act	Completion of EA will document compliance
Bald and Golden Eagle Protection	Completion of EA will document compliance
Comprehensive Environmental Response and Liability Act	Completion of EA will document compliance
Emergency Planning and Community Right-to-Know Act	Completion of EA will document compliance
Federal Insecticide, Fungicide, and Rodenticide Act	Completion of EA will document compliance
Resource Conservation and Recovery Act	Completion of EA will document compliance
Toxic Substances Control Act	Completion of EA will document compliance
Invasive Species Act	Completion of EA will document compliance
Noxious Weed Act	Completion of EA will document compliance
EO 11988, Floodplain Management	Completion of EA will document compliance
EO 12088, Federal Compliance with Pollution Control Standards	The Proposed Action would comply with this order.

Table 5.1-1. Principal Federal and State Laws Applicable to the Proposed Action

Federal, State, Local, and Regional Land Use Plans, Policies, and Controls	*Status of Compliance*
EO 13045, Protection of Children from Environmental Health Risks and Safety Risks	Completion of EA will document compliance
EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations	Completion of EA will document compliance
EO 13834, Efficient Federal Operations	Completion of EA will document compliance

5.2 Irreversible or Irretrievable Commitments of Resources

Resources that are irreversibly or irretrievably committed to a project are those that are used on a long-term or permanent basis. This includes the use of non-renewable resources such as metal and fuel, and natural or cultural resources. These resources are irretrievable in that they would be used for this project when they could have been used for other purposes. Human labor is also considered an irretrievable resource. Another impact that falls under this category is the unavoidable destruction of natural resources that could limit the range of potential uses of that particular environment.

Implementation of the Proposed Action would involve human labor; the consumption of fuel, oil, and lubricants for construction vehicles; and loss of natural resources (vegetation at proposed Satellite Station Site). Implementing the Proposed Action would not result in significant irreversible or irretrievable commitment of resources.

5.3 Unavoidable Adverse Impacts

This EA has determined that the alternatives considered would not result in any significant impacts. Implementing the alternatives would result in the following unavoidable environmental impacts:

- Loss of vegetation within the proposed project footprint.
- Impact to 254 LF of stream, 5.3 acres of jurisdictional wetlands, and 38,031 SF (0.9 acres) of stream buffer.

5.4 Relationship between Short-Term Use of the Environment and Long-Term Productivity

NEPA requires an analysis of the relationship between a project's short-term impacts on the environment and the effects that these impacts may have on the maintenance and enhancement of the long-term productivity of the affected environment. Impacts that narrow the range of beneficial uses of the environment are of particular concern. This refers to the possibility that choosing one development site reduces future flexibility in pursuing other options, or that using a parcel of land or other resources often eliminates the possibility of other uses at that site.

In the short-term, effects to the human environment with implementation of the Proposed Action would primarily relate to the construction activity itself. Air quality and noise would be impacted in the short-term. There are no anticipated long-term impacts. The construction of the facility and operation would not significantly impact the long-term natural resource productivity of the area. The Proposed Action would not result in any impacts that would significantly reduce environmental productivity or permanently narrow the range of beneficial uses of the environment.

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Appendix A
Air Quality Calculations

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Slocum Road EA Emission Calcs

453.59 grams per pound

			2021		2022		2023	Mat Del	
Mobilization	55 days	6/21 - 9/21	100%	55					55
Central Corridor Roadway	385 days	9/21 - 2/23	21%	80	65%	250	14%	55	385
Bridge	301 days	10/21 - 12/22	20%	60	80%	240		0	602
Visitor Center	290 days	2/22 - 3/23			76%	220	24%	70	435
Gatehouse & Inspection Facilities	360 days	2/22 -6/23			61%	220	39%	140	540
Slocum West	205 days	5/22 - 2/23			78%	160	22%	45	205
Slocum East	195 days	7/22 - 5/23			51%	100	49%	95	195
Stanley Rd Ext to Slocum	210 days	8/22 - 6/23			48%	100	52%	110	210
		2000		195		1290		515	2,627
				10%		65%		26%	

Clearing 19.5 Acres 20 mi RT 3900 CY debris

Off-road Equipment	Hours	Engine HP	Load Factor	VOC g/hp-hr	CO g/hp-hr	NOx g/hp-hr	SO_2 g/hp-hr	PM10 g/hp-hr	PM2.5 g/hp-hr	CO_2 g/hp-hr
Dozer	226	145	0.58	0.38	1.41	4.17	0.12	0.30	0.29	536
Loader/Backhoe	226	87	0.21	1.43	7.35	6.35	0.15	1.06	1.03	692
Small Backhoe	226	55	0.21	1.43	7.35	6.35	0.15	1.06	1.03	692

	VOC lb	CO lb	NOx lb	SO2 lb	PM lb	PM2.5 lb	CO_2 lb
Dozer	15.78	59.26	174.88	4.83	12.40	12.03	22,447
Loader w/ integral Backhoe	13.03	66.90	57.79	1.35	9.68	9.39	6,296
Small backhoe	8.24	42.30	36.54	0.86	6.12	5.93	3,980

On-road Equipment	Trips	Miles	Engine HP	VOC lb/mile	CO lb/mile	NOx lb/mile	SO_2 lb/mile	PM10 lb/mile	PM2.5 lb/mile	CO_2 lb/mile
Dump Truck	325	6,500	230	0.0015	0.0080	0.0361	0.0000	0.0015	0.0015	3

	VOC lb	CO lb	NOx lb	SO2 lb	PM lb	PM2.5 lb	CO_2 lb
Dump Truck	9.89	52.27	234.46	0.12	9.78	9.48	22,351
Subtotal in lbs	47	221	504	7	38	37	55,074
Clearing Grand Total in Tons	**0.02**	**0.11**	**0.25**	**0.00**	**0.02**	**0.02**	**28**

Site Prep - Grading / Excavating

Site Prep - Excavate/Fill (CY) 118,742 CY 145 days of grading Dump RT= 10 miles

Grading (SY) 507,279 SY 118,742 CY hauled Assume compact 0.5 feet (0.166 yards)

Off-road Equipment	Hours	Engine HP	Load Factor	VOC g/hp-hr	CO g/hp-hr	NOx g/hp-hr	SO_2 g/hp-hr	PM10 g/hp-hr	PM2.5 g/hp-hr	CO_2 g/hp-hr
Excavator	396	243	0.59	0.34	1.21	4.03	0.12	0.22	0.22	536
Skid Steer Loader	475	160	0.23	0.38	1.47	4.34	0.12	0.31	0.30	536
Dozer (Rubber Tired)	430	145	0.59	0.38	1.41	4.17	0.12	0.30	0.29	536
Scraper Hauler Excavator	180	365	0.58	0.38	1.42	4.19	0.12	0.30	0.29	536
Compactor	390	103	0.58	0.40	1.57	4.57	0.12	0.32	0.31	536
Grader	180	285	0.58	0.34	1.21	4.07	0.12	0.23	0.22	536
Backhoe/Loader	375	87	0.59	0.35	1.25	4.23	0.12	0.24	0.23	536

	VOC lb	CO lb	NOx lb	SO2 lb	PM lb	PM2.5 lb	CO_2 lb
Excavator	43.03	151.28	504.12	14.42	27.87	27.04	67,030
Skid Steer Loader	14.77	56.64	167.18	4.44	11.77	11.41	20,642
Dozer (Rubber Tired)	30.56	114.76	338.65	9.35	24.02	23.30	43,468
Scraper Hauler Excavator	31.69	119.24	351.74	9.68	24.91	24.16	45,003
Compactor	20.29	80.63	234.43	5.92	16.38	15.89	27,502
Grader	22.57	79.30	267.19	7.57	14.81	14.36	35,174
Backhoe/loader	14.80	52.97	179.65	4.89	10.13	9.83	22,736

On-road Equipment	Trips	Miles	VOC lb/mile	CO lb/mile	NOx lb/mile	SO_2 lb/mile	PM10 lb/mile	PM2.5 lb/mile	CO_2 lb/mile
Dump Truck	9,895	98,952	0.0015	0.0080	0.0361	0.0000	0.0015	0.0015	3.4385

	VOC lb	CO lb	NOx lb	SO2 lb	PM lb	PM2.5 lb	CO_2 lb
Dump Truck	150.54	795.77	3,569.19	1.79	148.87	144.25	340,249.59
Subtotal in lb:	**328**	**1,451**	**5,612**	**58**	**279**	**270**	**601,805**
Site Prep Grand Total in Tons	**0.16**	**0.73**	**2.81**	**0.03**	**0.14**	**0.14**	**301**

Demo Asphalt/Concrete 148,768 CY

Off-road Equipment	Hours of Operation	Engine HP	Load Factor	Emission Factors VOC g/hp-hr	CO g/hp-hr	NOx g/hp-hr	SO_2 g/hp-hr	PM_{10} g/hp-hr	$PM_{2.5}$ g/hp-hr	CO_2 g/hp-hr
Crawler Dozer w/attachments	17,560	125	0.58	0.34	1.21	4.08	0.12	0.23	0.22	536
Air Compressor	17,560	49	0.59	0.33	2.54	4.53	0.13	0.54	0.53	595
Excavator	5,000	380	0.59	0.31	2.50	4.51	0.13	0.55	0.54	595

	Annual Emissions VOC lb	CO lb	NOx lb	SO_2 lb	PM_{10} lb	$PM_{2.5}$ lb	CO_2 lb
Crawler Dozer w/attachments	964.81	3,388.66	11,451.90	323.48	634.55	615.51	1,503,811
Wheel mounted air compressor	366.80	2,844.31	5,067.02	143.29	606.57	588.38	666,110
Excavator	771.72	6,170.81	11,138.00	316.43	1,363.99	1,323.07	1,471,002
Subtotal (lbs):	**2,103**	**12,404**	**27,657**	**783**	**2,605**	**2,527**	**3,640,924**
Asphalt Demo Grand Total in Tons	**1.05**	**6.20**	**13.83**	**0.39**	**1.30**	**1.26**	**1,820**

Demo

existing guard house, canopy,	1,795 SF buildings	3900 CY debris disposal (trees, brush)	
structural foundations and infrastructure	70 CY foundations		
existing Slocum Rd pavement	11,894 CY pavement & subsurface materials	136,036 CY pavement & subsurface materials	
	8,159 CY Excavating		
	51,545 CY Fill		
pavement, curb and gutter and sidewalks on Alexander Rd	768.5 CY pavement & subsurface materials		

Buildings

visitor center	3,780	SF
	27,372	CY Excavation
	189	CY Concrete
	5,994	CY Fill
	448	CY gravel
	1,215	SY grading
Gate House	630	SF
	776	CY Excavation
	44	CY Concrete
	36	CY Fill
	7	CY gravel
	65	SY grading
Sentry Booths	396	SF
	878	CY Excavation
	126	CY Concrete
	15	CY Fill
	16	CY gravel
	40	SY grading
POV Truck Inspect Bldg	1,210	SF
	2,993	CY Excavation
	113	CY Concrete
	424	CY Fill
	22	CY gravel
	134	SY gradomg
POV Inspection Canopy	6,580	SF
	1,849	CY Excavation
	37	CY Concrete
	150	CY Fill
	122	CY gravel
	731	SY grading
Truck Inspection Canopy	8,435	SF
	93	CY Excavation
	16	CY Concrete
	156	CY gravel
	937	SY grading
Overwatch Bldg	228	SF
	17	CY Excavation
	10	CY Concrete
	4	CY Fill
	5	CY gravel
	11	SY grading
Bridge	202	CY Excavation
	793	CY Concrete
	260	CY gravel
	200	Pilings - 31'
	90	Pilings - 80'
	200	Pilings - 60'
Roads	1,199	CY Concrete
	2,917	CY Fill
	5,023	CY gravel
	5,250	CY asphalt
	266,660	SY Grading
Parking Lots	33	CY Excavation
	812	CY Concrete
	624	CY gravel
	932	CY asphalt
	12,995	SY Grading

Building Demo 1,795 SF 90 Estimated CY of debris based on 20 SF/CY 20 mi RT

Off-road Equipment	Hours of Operation	Engine HP	Load Factor	VOC g/hp-hr	CO g/hp-hr	NOx g/hp-hr	SO_2 g/hp-hr	PM_{10} g/hp-hr	$PM_{2.5}$ g/hp-hr	CO_2 g/hp-hr
				Emission Factors						
Hydraulic excavator	12	86	0.59	0.23	2.57	2.68	0.11	0.40	0.39	595
Wheel Loader w/ integral Backhoe	12	87	0.23	1.07	6.13	5.02	0.14	0.95	0.92	693
Wheel mounted air compressor	12	49	0.59	0.26	1.41	3.51	0.11	0.23	0.22	536

	VOC lb	CO lb	NOx lb	SO_2 lb	PM_{10} lb	$PM_{2.5}$ lb	CO_2 lb
	Annual Emissions						
Hydraulic excavator	0.31	3.45	3.60	0.15	0.54	0.52	799
Wheel Loader w/ integral Backhoe	0.56	3.24	2.66	0.07	0.50	0.49	367
Wheel mounted air compressor	0.20	1.08	2.68	0.08	0.18	0.17	410
Subtotal (lbs):	1.07	7.77	8.94	0.31	1.22	1.18	1,576

On-road Equipment	Trips	Miles	VOC lb/mile	CO lb/mile	NOx lb/mile	SO_2 lb/mile	PM_{10} lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Dump Truck	7	150	0.0015	0.0080	0.0361	0.0000	0.0015	0.0015	3.4385

	VOC lb	CO lb	NOx lb	SO2 lb	PM10 lb	PM2.5 lb	CO_2 lb
Dump Truck (12 CY Capacity)	0.23	1.20	5.40	0.00	0.23	0.22	514.35
Subtotal (lbs):	1.30	8.97	14.34	0.31	1.45	1.40	2,090.51
Building Demo Grand Total in Tons	**0.001**	**0.004**	**0.007**	**0.000**	**0.001**	**0.001**	**1.045**

Gravel Work 7,285 CY 607 trips 20 RT miles

Off-road Equipment	Hours	Engine HP	Load Factor	VOC g/hp-hr	CO g/hp-hr	NOx g/hp-hr	SO_2 g/hp-hr	PM_{10} g/hp-hr	$PM_{2.5}$ g/hp-hr	CO_2 g/hp-hr
Dozer	73	185	0.59	0.34	1.21	4.08	0.12	0.23	0.22	536
Wheel Loader	91	87	0.59	0.35	1.25	4.23	0.12	0.24	0.23	536
Compactor	201	103	0.43	0.36	1.34	4.45	0.12	0.26	0.25	536

	VOC lb	CO lb	NOx lb	SO2 lb	PM10 lb	PM2.5 lb	CO_2 lb
Dozer	6.04	21.21	71.67	2.02	3.97	3.85	9,412
Wheel Loader for Spreading	3.59	12.85	43.59	1.19	2.46	2.38	5,517
Compactor	7.06	26.27	87.37	2.26	5.05	4.89	10,515

On-road Equipment	Miles	Engine HP	VOC lb/mile	CO lb/mile	NOx lb/mile	SO_2 lb/mile	PM_{10} lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Dump Truck	12,142	230	0.0015	0.0080	0.0361	0.0000	0.0015	0.0015	3.4385

	VOC lb	CO lb	NOx lb	SO2 lb	PM10 lb	PM2.5 lb	CO_2 lb
Dump Truck	18.47	97.65	437.98	0.22	18.27	17.70	41,752
Subtotal (lbs):	35	158	641	6	30	29	67,196
Gravel Work Grand Total in Tons	**0.02**	**0.08**	**0.32**	**0.00**	**0.01**	**0.01**	**33.60**

Concrete Work Total 7,567 CY Note: Assume all excavated soil is accounted for in Excavate/Fill and Trenching

Off-road Equipment	Hours of Operation	Engine HP	Load Factor	VOC g/hp-hr	CO g/hp-hr	NOx g/hp-hr	SO_2 g/hp-hr	PM10 g/hp-hr	PM2.5 g/hp-hr	CO_2 g/hp-hr
				Emission Factors						
Concrete Mixer	398	3.5	0.43	0.69	3.04	6.17	0.13	0.54	0.52	588
Concrete Truck	841	300	0.43	0.38	1.75	6.18	0.11	0.27	0.26	530

	VOC lb	CO lb	NOx lb	SO2 lb	PM lb	PM2.5 lb	CO_2 lb
	Annual Emissions						
Concrete Mixer	0.91	4.02	8.16	0.17	0.71	0.69	778
Concrete Truck	90.76	417.43	1,478.30	27.26	64.25	62.32	126,705
Subtotal (lbs):	**92**	**421**	**1,486**	**27**	**65**	**63**	**127,483**
Concrete Work Grand Total in Tons	**0.05**	**0.21**	**0.74**	**0.01**	**0.03**	**0.03**	**64**

Building Construction 21,259 SF Total

Off-road Equipment	Hours of Operation	Engine HP	Load Factor	VOC g/hp-hr	CO g/hp-hr	NOx g/hp-hr	SO_2 g/hp-hr	PM10 g/hp-hr	PM2.5 g/hp-hr	CO_2 g/hp-hr
				Emission Factors						
Crane	107	330	0.58	0.25	1.22	5.26	0.11	0.21	0.20	530
Concrete Truck	107	300	0.43	0.19	1.45	4.32	0.12	0.21	0.20	536
Diesel Generator	86	40	0.43	0.26	1.41	3.51	0.11	0.23	0.22	536
Telehandler	214	99	0.59	0.51	3.94	4.93	0.13	0.52	0.51	595
Scissors Lift	171	83	0.59	0.51	3.94	4.93	0.13	0.52	0.51	595
Skid Steer Loader	107	67	0.59	1.69	7.97	6.70	0.15	1.19	1.15	691
Pile Driver	1,103	260	0.43	0.46	1.55	5.90	0.11	0.31	0.30	530
All Terrain Forklift	107	84	0.59	0.51	3.94	4.93	0.13	0.52	0.51	595

	VOC lb	CO lb	NOx lb	SO2 lb	PM lb	PM2.5 lb	CO_2 lb
	Annual Emissions						
Crane	11.08	55.01	237.27	5.15	9.37	9.09	23,922
Concrete Truck	5.70	44.22	131.36	3.51	6.39	6.20	16,304
Diesel Generator	0.85	4.57	11.38	0.35	0.75	0.73	1,739
Telehandler	14.03	108.47	135.71	3.52	14.35	13.92	16,371
Scissors Lift	9.41	72.75	91.02	2.36	9.62	9.33	10,980
Skid Steer Loader	15.77	74.23	62.40	1.38	11.08	10.75	6,437
Pile Driver	126.10	421.70	1603.83	30.96	85.29	82.73	143,926
All Terrain Forklift	5.96	46.06	57.62	1.50	6.09	5.91	6,952
Subtotal (lbs):	189	827	2331	49	143	139	226,632

Blast wall 1,900 LF
2,614 CY concrete
4,560 CY Excavation

Alexander Road 8,158 CY Excavation
1,610 CY Concrete
100 CY Fill
496 CY gravel
182 CY asphalt
59,490 SY Grading

entrance 165,000 SY grading
7 CY gravel
1,719 CY excavation
2 CY concrete
100 CY gravel/rock
748 CY Fill

Building Construction Grand Total in Tons				**0.09**	**0.41**	**1.17**	**0.02**	**0.07**	**0.07**	**113**

Paving Surface and Paving HMA Paving - HMA 171,820 6,364 CY

Off-road Equipment	Hours of Operation	Engine HP	Load Factor	VOC g/hp-hr	CO g/hp-hr	NOx g/hp-hr	SO2 g/hp-hr	PM g/hp-hr	PM2.5 g/hp-hr	CO_2 g/hp-hr
Roller	1,579	401	0.59	0.34	2.46	5.53	0.12	0.34	0.33	536
Paving Machine	2,105	164	0.59	0.38	1.44	4.25	0.12	0.30	0.29	536
Asphalt Curbing Machine	210	130	0.59	0.40	1.57	4.57	0.12	0.32	0.31	536

343,640

	VOC lb	CO lb	NOx lb	SO2 lb	PM lb	PM2.5 lb	CO_2 lb
Roller	281.07	2,027.83	4,557.34	94.90	278.87	270.51	441,168
Paving Machine	170.62	647.68	1,909.18	51.74	134.70	130.66	240,518
Asphalt Curbing Machine	14.06	55.89	162.50	4.10	11.36	11.02	19,064

On-road Equipment	Hours of Operation	Engine HP	Productivity based Speed (miles/hour)	VOC lb/mile	CO lb/mile	NOx lb/mile	SO2 lb/mile	PM lb/mile	PM2.5 lb/mile	CO_2 lb/mile
Dump Truck	1,270	230	10	0.001521	0.008042	0.036070	1.80E-05	0.001504	0.001458	3
Water Truck	534	230	10	0.001521	0.008042	0.036070	1.80E-05	0.001504	0.001458	3

	VOC lb	CO lb	NOx lb	SO2 lb	PM lb	PM2.5 lb	CO_2 lb
Dump Truck	1.93	10.21	45.80	0.02	1.91	1.85	4,366
Water Truck	0.81	4.29	19.25	0.01	0.80	0.78	1,835

Hot Mix Asphalt (HMA)	Volume of HMA (ft^3)	Weight of HMA (tons)	VOC lb/ton of asphalt	VOC lb	CO lb	NOx lb	SO2 lb	PM10 lb	PM2.5 lb	CO_2 lb
Standard Hot Mix Asphalt	171,820	207	0.04	8.28	-	-	-	-	-	-
			Subtotal (lbs):	477	2,746	6,694	151	428	415	706,950
			Paving Grand Total in Tons	**0.24**	**1.37**	**3.35**	**0.08**	**0.21**	**0.21**	**353**

Table 2. Watercraft Used in Construction, Alternative 2

Off-road Equipment	Hours of Operation	Engine HP	Load Factor	HC-ZH g/hp-hr	HC-DR g/hp-hr	CO-ZH g/hp-hr	CO-DR g/hp-hr	NOx-ZH g/hp-hr	NOx-DR g/hp-hr	Fc g	PM10 g/hp-hr	PM10-ZH g/hp-hr	CH_4 g/gal fuel	N_2O g/gal fuel	CO_2 g/gal fuel
Tug - propulsion	2,408	375	0.50	0.81	4.29	19.25	0.01	0.80	0.78	8.31E+07	0.00	0.00	0.41	0.08	10,206
Work Boat	2,408	250	0.45	0.00	0.00	0.00	0.00	0.00	0.00	4.98E+07	0.00	0.00	0.41	0.08	10,206

Off-road Equipment	VOC lb	CO lb	NOx lb	SO2 lb	PM10 lb	PM2.5 lb	CH_4 kg	N_2O kg	CO_2 kg
Tug - propulsion	2,459.79	19,248.91	1,038.32	549.46	0.00	0.00	10.69	2.14	263,511
Work Boat	0.00	0.00	0.00	329.67	0.00	0.00	6.41	1.28	158,107
Tons:	**1.23**	**9.62**	**0.52**	**0.44**	**0.00**	**0.00**			
CO_2e tons:									**466**

Material Deliveries 30 Mi RT average

On-road Equipment	Trips	Miles	VOC lb/mile	CO lb/mile	NOx lb/mile	SO2 lb/mile	PM lb/mile	PM2.5 lb/mile	CO_2 lb/mile
Delivery Truck	3,764	112,933	0.0015	0.0080	0.0361	0.0000	0.0015	0.0015	3

	VOC lb	CO lb	NOx lb	SO2 lb	PM lb	PM2.5 lb	CO_2 lb
Delivery Truck	171.81	908.20	4,073.49	2.04	169.90	164.63	388,324.17
Material Delivery Grand Total in Tons	**0.09**	**0.45**	**2.04**	**0.00**	**0.08**	**0.08**	**194**

Year	PM_{10} tons/acre/mo	acres	days of disturbance	PM_{10} Total	PM2.5/ PM_{10} Ratio	$PM_{2.5}$ Total
2021	0.42	**5**	80	8.4	0.1	0.8
2022	0.42	**5**	250	26.3	0.1	2.6
2023	0.42	5	110	11.6	0.1	1.2

Total Estimated Emissions	VOC tons	CO tons	NOx tons	SO2 tons	PM10 tons	PM2.5 tons	CO_2 Metric tons
2021	0.30	1.92	2.50	0.10	0.19	0.18	337
2022	1.92	12.48	16.27	0.64	1.22	1.18	2193
2023	0.77	4.99	6.51	0.26	0.49	0.47	877
Total all years	2.95	19.20	25.03	0.98	1.88	1.82	3,374

average passenger vehicle
404 grams of CO2 per mile
0.89 lb of CO2 per mile

CO2 emissions 3,374 7,582,503 miles
659 cars driving 11,500 miles per year

DEPARTMENT OF THE NAVY
UNITED STATES MARINE CORPS

FINDING OF NO SIGNIFICANT IMPACT (FONSI) FOR THE ENVIRONMENTAL ASSESSMENT FOR THE REALIGNMENT OF SLOCUM ROAD AT MARINE CORPS AIR STATION CHERRY POINT, NORTH CAROLINA

Pursuant to Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations Parts 1500-1508) implementing the National Environmental Policy Act, Navy Regulations (32 Code of Federal Regulations part 775), and Marine Corps Order 5090.2, the United States Marine Corps (USMC) gives notice that an Environmental Assessment (EA) has been prepared and an Environmental Impact Statement is not required for the following activities at Marine Corps Air Station (MCAS) Cherry Point.

Proposed Action: The USMC proposes to demolish an existing Entry Control Facility (ECF) at Slocum Road and construct a new ECF that will serve as the Pass & Identification Office and main entrance and exit point into and out of MCAS Cherry Point in Craven County, North Carolina. The Proposed Action would widen Slocum Road from two lanes to four lanes and relocate the road to better comply with Explosive Safety Quantity Distance (ESQD) arc criteria regarding Public Transportation Routes (PTRs), provide an additional concrete two-lane bridge beside the existing two-lane bridge over Slocum Creek, and provide improved gate and inspection facilities.

Purpose and Need: The purpose of the Proposed Action is to enhance the flow of mobilizing forces to the Aerial Port of Embarkation, provide proper inspection facilities for commercial vehicles entering the Air Station, enhance the service of ordnance deliveries to the station ordnance areas, and upgrade the entrance and traffic controls to meet current safety and security requirements in order to quickly and efficiently process inbound traffic on Slocum Road and stop unauthorized vehicles from entering the station. The Proposed Action is needed to provide significant and necessary security, safety, and transportation improvements along Slocum Road to sustain mission capability.

Alternatives Analyzed: The USMC considered the Proposed Action Alternative as well as the No Action alternative.

Proposed Action Alternative. The Proposed Action Alternative would realign Slocum Road and widen it from two lanes to four, construct an additional concrete two-lane bridge beside the existing two-lane bridge over Slocum Creek, and construct a new ECF. The new ECF would include a visitor control center, gate house, four sentry booths, main gate inspection canopies, overwatch defensive fighting position, and a truck/POV inspection office. The roadway section of the improvement adds two lanes to serve Slocum Road traffic as well as providing access from staff housing off Alexander Road. The new roadway will begin at the eastern terminus of the base near the North Carolina Department of Transportation overpass project at U.S. Highway 70 and will terminate at the intersection with Roosevelt Boulevard. The intersection of New Slocum Road and Stanley Road would be constructed using a "Green T" design. In order to accommodate the realignment of Slocum Road under the Proposed Action Alternative, Alexander Road from Hertford Road to Stanley Road would be realigned south of Slocum Road.

No Action Alternative. The No Action Alternative means that the new ECF would not be constructed. The No Action Alternative would not meet the purpose and need and, therefore, is not considered a reasonable alternative. However, CEQ guidelines stipulate that the No Action Alternative must be

analyzed to assess any environmental consequences that may occur if the Proposed Action is not implemented. Therefore, this alternative was carried forward for analysis.

Environmental Effects: As summarized below, the environmental resource areas analyzed in the EA include air quality, noise, biological resources, water resources, coastal zone, traffic and transportation, and public health and safety. Because potential impacts were negligible or nonexistent, the following resource areas were not evaluated in the EA: airspace, hazardous materials and wastes, socioeconomics and environmental justice, infrastructure, cultural resources, and geological resources. The summary of effects is focused on the Proposed Action Alternative. The level of detail in the summary analysis is commensurate with the level of potential effect to the resource.

Air Quality: Estimated annual construction and demolition emissions would not exceed any of the comparative thresholds. None of the emissions would be considered significant.

Implementation of the Preferred Alternative would contribute directly to emissions of Green House Gases from the combustion of fossil fuels. Demolition, construction, and clearing activities would generate approximately 3,374 metric tons of Carbon Dioxide. Therefore, implementation of the Preferred Alternative would not result in significant impacts to air quality.

Noise: Slocum Housing residential area is immediately adjacent to the project site, and at times is within 100 feet of the limits of disturbance. Using the Federal Highway Administration's Roadway Construction Noise Model, the nearest receptor residences would experience noise levels of approximately 80.4 dBA from construction equipment operation. All noise impacts from construction would be temporary in nature and would only occur during normal business hours (8:00 am to 5:00 pm). In addition, the walls and windows of homes would reduce the noise experienced indoors. Portions of the Slocum Housing are within the 65 DNL contour. These residences would likely be habituated to general noise from aircraft activity. However, construction activities would likely to cause temporary adverse impacts due to noise during construction. Residences over 500 feet away would experience noise levels of less than 65 dBA. Operation of the ECF would produce longer-term noise impacts for the nearby residences. In order to reduce operational noise, an earthen berm would be constructed to the south of the Vehicle Inspection and Gate House area. The earthen berm will would act as a sound barrier and help with any adverse noise impacts experienced by the nearer residences to the project area. Therefore, implementation of the Preferred Alternative would not result in significant impacts to the noise environment.

Biological Resources: The majority of the proposed demolition and construction associated with the Proposed Action would occur in a previously disturbed area of the base that support no vegetation and provides no natural habitat to wildlife. Approximately 26.3 acres of pine forest and 0.3 acres of mixed pine-hardwood forest occurs within the footprint of the Proposed Action. Some of this natural vegetation would be removed for the realignment of Slocum Road and construction of the new ECF, and this would also remove wildlife habitat. However, the small area would represent only a fraction of the natural vegetation and wildlife habitat on the base. Noise could displace wildlife temporarily during construction activities in the area immediately surrounding the construction site.

Pedestrian surveys of the project site were conducted in June 2019 to survey for threatened and endangered species and suitable habitat. No threatened and endangered species were observed within the project area. A review of the North Carolina Natural Heritage database found no known occurrences

of any federally protected species in the project area. Due to the lack of suitable habitat, the lack of known occurrences, and the lack of observed species within areas of potentially suitable habitats in the project study area, the Proposed Action is not anticipated to have any effect on protected habitats, plants, or animals. There would be no significant impact on threatened and endangered species and no formal consultation between the Marine Corps and U.S. Fish and Wildlife Service or the National Marine Fisheries Service would be required. Therefore, implementation of the Preferred Alternative would not result in significant impacts to biological resources.

Water Resources: The Preferred Alternative would impact approximately 5.3 acres of wetlands, 38,031 square feet (0.9 acres) of stream buffer permanently, 3,239 square feet (0.07 acres) of stream buffer temporarily, and 254 linear feet of stream. No coastal wetlands would be impacted by the Proposed Action. A stream assessment and wetland delineation for the project area have been completed and the Jurisdictional Determination is under review by the U.S. Army Corps of Engineers. Once approved, an Individual Permit would be completed to comply with Section 404 of the Clean Water Act. Mitigation for stream, wetland, and riparian buffer impacts may be required and may include in-kind stream restoration, or purchase of mitigation credits. The type and quantity of required mitigation will be determined through the permitting process. While there would be minor, negative impacts on wetlands and surface waters, these impacts would be lessened through required mitigation.

The proposed construction and demolition activities with ground disturbance would contribute to stormwater runoff which potentially degrades water quality of nearby surface waters from increased sedimentation. This impact would be temporary during demolition and construction activities and would be reduced from implementation of best management practices such as silt fencing around the construction site. The additional paved areas from the proposed roadway, ECF, and parking areas would increase the impervious surface, further increasing stormwater runoff. Two stormwater control features would be constructed as part of the Proposed Action to receive stormwater runoff from the project area. All construction and demolition would be done in adherence to MCAS Cherry Point's state-required Stormwater Pollution Prevention Plan, as well as all required Erosion and Sedimentation control procedures. Adherence to these procedures would ensure that surface waters remain protected from uncontrolled erosion and sedimentation from exposed soil during construction activities. Additionally, low impact development techniques would be incorporated where practicable to restore and maintain hydrology and groundwater recharge. During bridge construction, minor substrate impacts that may increase turbidity would be expected; however, impacts to adjacent downstream receiving waters would be minimized using erosion control measures. Therefore, implementation of the Preferred Alternative would not result in significant impacts to water resources.

Coastal Zone: The Proposed Action would not have any significant coastal effect. Minor substrate impacts that may increase turbidity would be expected during bridge construction; however, impacts to adjacent downstream receiving waters would be minimized using erosion control measures. There are no coastal wetland impacts associated with the Proposed Action. The installation would adhere to all applicable state and federal regulations regarding the construction, maintenance, and operation of the new ECF, bridge, and new roadway. Therefore, the proposed project would be consistent, to the maximum extent practicable, with the enforceable policies of North Carolina's federally approved coastal management program. MCAS Cherry Point has developed a Coastal Consistency Determination that finds the Proposed Action to be consistent with the enforceable policies of North Carolina's Coastal

Area Management Act. Therefore, implementation of the Preferred Alternative would not result in significant impacts to land use within the coastal zone.

Traffic and Transportation: During construction there would be minor disturbances to traffic flow from the entrance and exit of construction related equipment and materials to the proposed project site. All traffic related issues from construction would be temporary in nature and would not lead to permanent increases in traffic congestion or impede traffic flow in the long-term.

The Proposed Action would alter the existing traffic patterns along Slocum Road and Alexander Road. Currently, the roadways are parallel and intersect with each other, Slocum Road being the main access roadway from US-70 through the existing Slocum Road ECF. Alexander Road is a primary local roadway within the housing area for the installation. The Proposed Action would realign both roadways and create a new intersection along the realigned Slocum Road with Stanley Road. Existing Alexander Road would also be realigned to intersect with Stanley Road, requiring all traffic on Alexander Road and Stanley Road to utilize the new Slocum Road and Stanley Road intersection. This project would also replace the existing ECF at Slocum Road and provide a new ECF that will serve as the main entrance and exit point into and out of MCAS Cherry Point.

In association with the design of the new roadway alignment and Slocum Road ECF, a traffic analysis was completed to ensure that the roadway network changes associated with the Proposed Action would function at acceptable level of service for existing and future needs. The traffic analysis was conducted for the intersections and critical roadway segments using 2040 projected traffic volumes using the SimTraffic simulation method. Based on the traffic analysis, the level of service for the new roadway alignment would be acceptable at all intersections. Traffic at the Roosevelt ECF would be anticipated to decrease when the new Slocum ECF becomes operational as the main entry and exit point for the installation. The traffic restrictions due to ESQD arcs along Slocum Road would no longer be required. There would be long-term, minor impacts to traffic at MCAS Cherry Point as a result of the new roadway alignment and construction of the new ECF at Slocum Road. Therefore, implementation of the Preferred Alternative would not result in significant impacts to transportation or traffic flow.

Public Health and Safety: During construction and demolition, contractors would be required to wear proper personal protective equipment such as hard hats, gloves, steel toed boots, eye protection, and long pants/long sleeve shirts as necessary, and safe equipment operation procedures would be followed. Construction and demolition activities occurring at MCAS Cherry Point are required to be conducted in a manner that is consistent with all federal regulations, including all applicable Occupational Safety and Health Administration and Marine Corps requirements.

Once operational, the new Slocum Road ECF would function as the main entry and exit point for MCAS Cherry Point. The Proposed Action Alternative would provide proper inspection facilities for commercial vehicles entering the installation, enhance the service of ordnance deliveries to the station ordnance areas, increase the ability to quickly and efficiently process inbound traffic on Slocum Road, and upgrade the entrance and traffic controls to meet current safety and security requirements. The new ECF would provide AT/FP features and comply with AT/FP regulations, and physical security mitigation in accordance with DoD Minimum Anti-Terrorism Standards for Buildings.

The newly realigned Slocum Road would not be encroached by ESQD arcs of the magazine area. This would create the long-term benefit of removing most installation traffic within the ESQD arcs. The overall impacts to public health and safety as a result of the Proposed Action would be beneficial. There are no environmental health or safety risks associated with the Proposed Action that would disproportionately affect children. Therefore, implementation of the Preferred Alternative would not result in significant impacts to public health and safety.

Cumulative Impacts: Other past, present, and reasonably foreseeable actions were reviewed for potential cumulative impacts with implementation of the Proposed Action Alternative. This analysis occurred with an emphasis on the evaluation of air quality, noise, biological resources, water resources traffic and transportation, and public health and safety due to the potential for cumulative impacts in these resource areas. The analysis concluded that cumulative impacts would not be considered significant. Not all of the actions would occur simultaneously and, when viewed collectively, there is nothing inherently incompatible between these actions and the projects included in the Proposed Action, nor anything to indicate that the Proposed Action would exacerbate or otherwise collectively increase the potential for effects to the environment. Therefore, implementation of the Preferred Alternative would not result in significant impacts to cultural resources.

Public Involvement: The Final EA was made available via the installation website at the following link: https://www.cherrypoint.marines.mil/Staff/Environmental-Affairs/.

A notice for public comment will be published in the New Bern Sun Journal.

Finding of No Significant Impact (FONSI): Based on analysis presented in the Final EA and FONSI, the USMC finds that implementation of the Proposed Action Alternative will not significantly impact the quality of the human or natural environment or generate significant controversy. Therefore, the preparation of an Environmental Impact Statement will not be required.

The EA prepared by the USMC is on file and interested parties may obtain a copy from: Jessica Guilianelli, Marine Corps Air Station Cherry Point, Environmental Affairs Department, PSC Box 8006, Cherry Point, North Carolina 28533

5 APR 2021

Date

M.R. HUBER
COLONEL
COMMANDING OFFICER
MCAS CHERRY POINT