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ER-08-121

**FINDING OF NO SIGNIFICANT IMPACT**

**TEMPORARY BEDDOWN OF PROPOSED INCREASE IN END  
STRENGTH**

**MARINE CORPS BASE, CAMP LEJEUNE  
ONslow COUNTY, NORTH CAROLINA**

**Responsible Officer:**

Commanding Officer  
Marine Corps Base  
Camp Lejeune, North Carolina 28542-0004

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**June 2008**

**FINDING OF NO SIGNIFICANT IMPACT  
FOR  
TEMPORARY BEDDOWN OF PROPOSED INCREASE IN END STRENGTH  
MARINE CORPS BASE, CAMP LEJEUNE,  
ONslow COUNTY, NORTH CAROLINA**

Pursuant to the Council on Environmental Quality regulations (40 Code of Federal Regulations Parts 1500 – 1508) implementing procedural provisions of the National Environmental Policy Act, Marine Corps Base (MCB), Camp Lejeune gives notice that an Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) have been prepared for the Temporary Beddown of Proposed Increase in End Strength at MCB Camp Lejeune, Onslow County, North Carolina.

In President George W. Bush's State of the Union address (January 2007), the President announced under the recommendation of the Secretary of Defense, a proposal to increase the end strength of the United States Marine Corps (USMC) from 180,000 to 202,000 over the next five years (by fiscal year [FY] 2011). For the EA, the USMC proposes to accommodate immediate increases in Marine forces at MCB Camp Lejeune, North Carolina, in a combination of existing facilities and newly constructed temporary facilities until the decision to construct permanent facilities for these Marines is made. A separate Environmental Impact Statement (EIS) is being conducted to evaluate the potential environmental impacts of the *permanent assignment* of Marines at MCB Camp Lejeune and other Marine Corps installations (*EIS for Growing the Force at MCB Camp Lejeune, Marine Corps Air Station [MCAS] New River, and MCAS Cherry Point*).

The majority of the proposed temporary facilities will be located on or near previously disturbed sites or on paved areas adjacent to their parent commands. The 4<sup>th</sup> Reconnaissance Platoon; Battery F, 2<sup>d</sup> Artillery Battalion; Battery G, 2<sup>d</sup> Artillery Battalion; Counter-Battery Radar Platoon; Company E, 2<sup>d</sup> Amphibious Assault Battalion; and Civil Affairs will require facility construction and/or infrastructure upgrades adjacent to their parent units. The Consolidated Military Police (MP)/Military Headquarters Group MP, Logistics Command Element beddown will require new facilities. Several infrastructure and utility features are part of the proposed temporary facilities including chain link fencing, pre-engineered buildings, storage areas, portable armories, utility connections, and hazardous material and waste storage areas.

Four project areas encompassing approximately 72 hectares (ha) (177 acres [ac]) were evaluated to support the construction of temporary facilities with a total footprint of approximately 21 ha (52 ac). The actual location for the temporary facilities is subject to change as the design process continues, but the overall proposed project area will not change.

The EA addresses the proposed action which is the preferred alternative, and the No Action Alternative, along with the rationale for several other alternatives that were considered but dismissed. Under the No Action Alternative, no temporary facilities associated with the immediate increase in personnel will be constructed and no impacts to the physical environment would occur. However the No Action Alternative does not support the operational needs of the Marine Corps because current facilities cannot absorb the increase in numbers of incoming personnel.

The EA acknowledges that the proposed action will have some adverse environmental impacts, but we do not consider them to be significant. Specifically MCB Camp Lejeune has determined that the proposed action will result in the following:

- Temporary minor increases in air emissions due to operation of construction vehicles during facility construction,
- Temporary increases in noise due to standard construction activities, typically occurring only during normal working hours,
- Minor impacts to existing topography and soils during clearing and grading of the proposed project for the temporary facilities, and
- Minor impacts to floodplain areas.

Conversely, MCB Camp Lejeune has determined that the proposed action would have no effect on the following:

- Wetlands, threatened and endangered species, archaeological sites and historic properties since none occur within the project areas,
- Surface water quality since construction activities will comply with MCB Camp Lejeune's 2002 Stormwater Pollution Prevention Plan and the Stormwater Management National Pollution Discharge Elimination System Phase I requirements, and
- Coastal Zone resources since the proposed construction would not effect, nor occur in, Areas of Environmental Concern.

MCB Camp Lejeune has agreed to implement the following mitigation and minimization measures:

- Best Management Practices will be used to avoid and minimize the release of sediments into surface waters.
- All projects will be designed to avoid and minimize impacts to wetlands and waters of the United States.
- Disturbed areas will be landscaped and revegetated with native plants to the extent practicable.
- If potential historical or archaeological sites are encountered, construction will halt and the Director, Environmental Management will be notified in order to mitigate any adverse effects.
- Should Installation Restoration sites be affected, MCB Camp Lejeune will notify the appropriate Base program managers to develop an appropriate course of action.

MCB Camp Lejeune also analyzed the potential for cumulative impacts resulting from the proposed action and other actions in the past, present and reasonably foreseeable future. These actions result in cumulative gains in active duty and family members as well as civilian employees at MCB Camp Lejeune and MCAS New River as follows: 8,360 total active duty personnel; 8,261 total family members of active duty personnel; and 1,103 civilian employees, for a grand total of 17,724.

The cumulative gain in employment and earnings will result in direct gains for the local economy in the government sector and indirect gains throughout related economic sectors. Construction spending will result in temporary employment and expenditures and gains through the affected economic sectors. Housing impacts are being addressed through additional on-base Family Housing construction underway to address existing deficit and follow-on Family Housing under construction by the Marine Corps. As evaluated in accordance with Executive Orders 12898 and 13045, the cumulative direct and indirect effects of the proposed action will not cause disproportionately adverse environmental, economic, or health impacts specific to any groups or individuals at MCB Camp Lejeune or within the tri-county region, including minorities, low-income populations, and children. The cumulative gain in military

personnel and their dependents at MCB Camp Lejeune is not dramatic when compared with Base and relative community population levels in the early 1990s.


MCB Camp Lejeune estimates that the cumulative growth in active duty personnel (including the school-age children associated with the recent addition of the Marine Special Operations Command) will result in a gain of 3,250 school age children. Of these, approximately 90 percent (2,925) will attend local area schools. Two new elementary schools are planned for construction within the Onslow County school system. Two on-base schools are also proposed for construction (one elementary and one middle school) as part of a separate MCB Camp Lejeune Public Private Venture Housing action. These actions will help reduce cumulative impacts to schools both on-base and in the local community.

The proposed action will result in short-term impacts to on-base traffic from increased activity of construction vehicles. Once the temporary facilities are constructed, traffic volumes at MCB Camp Lejeune and the surrounding community will increase with the addition of personnel and family members. Nearby roadways could experience increases in traffic from associated commuters who live in different parts of the Base and county, namely US 17, NC 172, and NC 24. A Traffic Study was completed that provided recommendations to existing roadways under various growth scenarios at MCB Camp Lejeune. Additionally, under a separate action, improvements to the Main Gate, Piney Green Gate, Old Sawmill Road, and Piney Green Road will be constructed, thereby improving traffic flow on and off-base. Collectively, these improvements will reduce the cumulative impacts to traffic and transportation on-base and the surrounding roadways.

Cumulatively, there will be an increase in demand for infrastructure and utilities services including potable water, wastewater disposal, electricity and telecommunications, and solid waste disposal both on-base and in the local community. MCB Camp Lejeune has proposed several recent upgrades to the existing infrastructure and utility service network on-base that will ensure that demands are met. The increase in personnel associated with the Grow the Force initiative will occur as a phased approach over several years; thus allowing local communities to respond as needed to the increase in demand for utilities and infrastructure. Additionally, MCB Camp Lejeune is working closely with the Military Growth Task Force to identify impacts to this resource area.

Based on information gathered during preparation of the EA, the USMC finds that implementing the proposed action will not significantly impact the natural or human environment. The EA addressing this action is on file and may be reviewed by interested parties at: Commanding Officer Base Public Affairs Office, MCB Camp Lejeune, North Carolina 28542-0004, Telephone (910) 451-7440.

6 Jun 08  
Date

  
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R. P. FLATAU, JR.  
Colonel, U.S. Marine Corps  
Commanding Officer  
Marine Corps Base, Camp Lejeune

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**ENVIRONMENTAL ASSESSMENT  
FOR  
TEMPORARY BEDDOWN OF PROPOSED INCREASE IN END STRENGTH  
MARINE CORPS BASE CAMP LEJEUNE  
NORTH CAROLINA**

**Responsible Officer:**

Commanding Officer  
Marine Corps Base  
Camp Lejeune, North Carolina 28542-0004

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**JUNE 2008**



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## **EXECUTIVE SUMMARY**

This Environmental Assessment (EA) has been prepared by the United States Marine Corps (USMC) in accordance with the National Environmental Policy Act (NEPA) of 1969, 42 United States Code 4321-4370d, as implemented by the Council on Environmental Quality regulations, 40 Code of Federal Regulations Parts 1500-1508 and the NEPA procedures contained in the Marine Corps Order P5090.2A, Change 1, Chapter 12, dated 22 January 2008, *Environmental Compliance and Protection Manual*, which establishes procedures for implementing NEPA.

### **ES.1 DESCRIPTION OF THE PROPOSED ACTION**

In President George W. Bush's State of the Union address (January 2007), the President announced under the recommendation of the Secretary of Defense, a proposal to increase the end strength of the USMC from 180,000 to 202,000 over the next five years (by fiscal year [FY] 2011). For this EA, the USMC proposes to accommodate immediate increases in Marine forces at Marine Corps Base (MCB) Camp Lejeune, North Carolina, in a combination of existing facilities and newly constructed facilities until the decision to construct permanent facilities for these Marines is made. A separate Environmental Impact Statement (EIS) is being conducted to evaluate the potential environmental impacts of the *permanent assignment* of Marines at MCB Camp Lejeune and other Marine Corps installations (*EIS for Growing the Force at MCB Camp Lejeune, Marine Corps Air Station [MCAS] New River, and MCAS Cherry Point*) and thus will evaluate in much greater detail potential impacts to the various resource areas than are analyzed in this EA. The Cumulative Effects chapter (Chapter 5) of this EA provides additional detail on four resource areas – Socioeconomics; Community Facilities and Services; Traffic and Transportation; and Infrastructure and Utilities – where the proposed action could result in cumulative effects in combination with recent and future actions at MCB Camp Lejeune, including the Grow the Force initiative.

The majority of the proposed temporary facilities would be located on or near previously disturbed sites or on paved areas adjacent to their parent commands. The 4<sup>th</sup> Reconnaissance Platoon; Battery F, 2<sup>d</sup> Artillery Battalion; Battery G, 2<sup>d</sup> Artillery Battalion; Counter-Battery Radar Platoon; Company E, 2<sup>d</sup> Amphibious Assault Battalion; and Civil Affairs would require facility construction and/or infrastructure upgrades adjacent to their parent units. The Consolidated Military Police (MP)/Military Headquarters Group MP, Logistics Command Element beddown would require new facilities since the existing Base MP kennels cannot be expanded. Several infrastructure and utility features are part of the proposed temporary facilities including chain link fencing, pre-engineered buildings (PEBs), storage areas, portable armories, utility connections, and hazardous materials and waste storage areas.

Four project areas encompassing approximately 72 hectares (ha) (177 acres [ac]) are considered in this EA to support the construction of temporary facilities with a total footprint of approximately 21 ha (52 ac). The actual location for the temporary facilities is subject to change as the design process continues, but the overall proposed project area would not change.

The USMC is committed to fighting the Long War which includes defeating terrorist networks, defending the homeland, and preventing hostile states and non-state actors from acquiring or using weapons of mass destruction. To meet the demands of the Long War and remain prepared for the inevitable contingencies that will arise, the USMC must be sufficiently manned, effectively trained, and properly equipped. The proposed action is needed to ensure the USMC accomplishes this goal by providing needed facilities to accommodate the incoming personnel.

## **ES.2 ENVIRONMENTAL IMPACT OF THE PROPOSED ACTION**

Implementation of the proposed action would result in some minor adverse environmental impacts. This EA has determined that the proposed action is the preferred (and only feasible) alternative. Following is a brief summary of the anticipated impacts on each resource area analyzed in the EA. Socioeconomics and Environmental Justice, Community Facilities and Services, Transportation and Traffic, and Infrastructure and Utilities are analyzed in Cumulative Effects (Section 5 of this EA), since the proposed construction is not expected to affect these resource areas. For a detailed description and analysis, refer to Section 4 of this EA, Environmental Consequences.

**Land Use and Coastal Zone Management:** The proposed construction of the temporary facilities would result in a minor change to existing land use patterns. The majority of the proposed project areas would be sited near previously disturbed areas and thus the existing land use would not change. However, the Consolidated MP/Military Headquarters Group MP, Logistics Command Element facilities would be sited in an existing undeveloped forested training/maneuver area and the land use would change to a cantonment area. The proposed construction activities would be located outside of any Areas of Environmental Concern (AECs). Therefore, the USMC has determined that implementing the proposed action would not affect the state's coastal zone. Accordingly, MCB Camp Lejeune submitted a negative determination to the North Carolina Department of Environment and Natural Resources (NCDENR), Division of Coastal Management (see Appendix B of this EA).

**Air Quality:** The proposed action includes several actions that would increase air emissions including operation of construction vehicles and facility construction. Construction impacts would be short-term in nature, lasting only for the duration of the temporary facility construction. Even with these increased emissions, the region is expected to remain in attainment for all criteria pollutants.

**Noise:** Construction activities would have a minor temporary impact on the noise environment in the vicinity of the proposed project areas. However, noise levels would be typical of standard construction activities, and would typically occur only during normal working hours. Furthermore, sound levels could be reduced through the use of equipment sound mufflers.

**Cultural Resources:** Based on predictive models and previous field surveys, no archaeological sites have been identified as occurring within the project areas. If during construction and site grading any archaeological resources were discovered, the Director, Environmental Management would be



notified. The Director, Environmental Management would order actions in the vicinity halted and the area marked and would immediately notify the Base archaeologist. Therefore, historic properties at MCB Camp Lejeune would not be affected as a result of implementing the proposed action.

**Natural Resources:** The proposed action would cause minor impacts to existing topography and soils during clearing and grading of the proposed project areas for the temporary facilities. Potential erosion impacts could occur during construction; however, these impacts would be temporary and would be minimized by utilizing best management practices (BMPs) for soil erosion and sedimentation control at the construction sites. Most of the affected soils would eventually be covered with impervious surfaces or vegetation, preventing long-term erosion. Construction of the proposed temporary facilities would not affect adjacent surface waters. BMPs would be implemented both during construction and during the operation and maintenance of the temporary facilities. This would insure that suspended particulates were removed prior to surface runoff entering the New River (Courthouse Bay) or unnamed tributaries located in the vicinity of the project area. MCB Camp Lejeune would also prevent contamination of water resources by properly storing and maintaining hazardous materials in appropriate storage lockers in compliance with Marine Corps Order P5090.2A, Chapter 20 and the Base's 2002 Stormwater Pollution Prevention Plan (Department of the Navy [DoN], 2002).

The proposed action would result in an increase in stormwater runoff due to an increase in impervious surfaces. Stormwater at the proposed temporary facilities would be managed and controlled in accordance with MCB Camp Lejeune's 2002 Stormwater Pollution Prevention Plan and the Stormwater Management National Pollution Discharge Elimination System Phase I requirements. In addition, BMPs would be implemented to avoid contamination of stormwater and mitigate both short-term (construction phase) and long-term (project life) impacts.

There are approximately 5 ha (13 ac) of wetlands and floodplains located within the proposed project areas, but no construction is planned within wetlands. Additionally, the proposed project area for the 4<sup>th</sup> Reconnaissance Platoon facilities is located adjacent to a primary nursery area but no construction would occur in this area.

Forest removal could range from approximately 8 ha (20 ac) to 15 ha (38 ac) depending on the final design layout. The proposed action would result in minor adverse impacts to wildlife that are not expected to affect the stability of the wildlife populations on-base or migratory bird populations within the region. MCB Camp Lejeune would be compliant with the intent of the Memorandum of Understanding and implementation of the proposed action would not require prior coordination with the United States Fish and Wildlife Service (USFWS) regarding Migratory Bird Treaty Act (MBTA) issues. The proposed action would however, remove approximately 4 ha (10 ac) of forest designated by MCB Camp Lejeune as future red-cockaded woodpecker foraging habitat, but no red-cockaded woodpeckers currently inhabit the area and it is not expected to adversely affect the species. Prior to implementing the proposed action, MCB Camp Lejeune would obtain concurrence from the USFWS that the proposed action is not likely to

adversely affect any federally listed threatened and endangered species. State protected species may also occur within the proposed project areas based on similar habitat types and less mobile species could experience direct mortality during construction.

**Hazardous Material and Waste:** The proposed action would take place in the vicinity of several Installation Restoration sites. For any potentially affected site, remediation of any contamination would be completed as needed prior to construction activities, and usual BMPs would be employed in the handling, removal, and disposal of potentially hazardous substances. MCB Camp Lejeune would consult with the appropriate Base program managers to establish an appropriate course of action for each proposed construction project to ensure that federal and state agency notification requirements are met and to arrange for agency consultation as necessary where existing Installation Restoration sites would be affected.

### **CUMULATIVE EFFECTS**

All resources were evaluated for potential cumulative impacts resulting from the proposed action in combination with recent past, present and foreseeable actions at MCB Camp Lejeune and the vicinity. For all resource areas, it was determined that the impacts of the proposed action (i.e., construction) evaluated in the EA would not have additive or interactive impacts that would cumulatively impact resources in a meaningful way. However, when considering the population growth associated with the overall Grow the Force initiative, it was also determined that cumulative impacts analysis for four resource areas, as described below, could be meaningful.

**Socioeconomics and Environmental Justice:** MCB Camp Lejeune has estimated the cumulative gains in active duty and family members as well as civilian employees at MCB Camp Lejeune and MCAS New River as follows: 8,360 total active duty personnel; 8,251 total family members of active duty personnel; and 1,103 civilian employees, for a grand total of 17,724. The cumulative gains in military personnel and their dependents at MCB Camp Lejeune is not dramatic when compared with Base and relative community population levels in the early 1990s. However, the additive and synergistic impacts of projected gains in both the military and community population are notable. The cumulative gain in employment and earnings would result in direct gains for the local economy in the government sector and indirect gains throughout related economic sectors. There would also be construction spending that would result in temporary employment and expenditures and gains through the affected economic sectors. Housing impacts are being addressed through additional on-base Family Housing construction underway to address existing deficit and follow-on Family Housing under construction by the Marine Corps (Marine Corps Installations East, 2007).

As evaluated in accordance with Executive Orders 12898 and 13045, the cumulative direct and indirect effects of the proposed action would not cause disproportionately adverse environmental, economic, or health impacts specific to any groups or individuals at MCB Camp Lejeune or within the tri-county region, including minorities, low-income populations, and children.

**Community Facilities and Services:** The focus of the cumulative impacts analysis to community facilities and services was on schools. The additive gains in school-age dependents of personnel would result in commensurate incremental gains in school-age children, placing a greater demand on local area schools. An initial estimate is that the cumulative growth in active duty personnel (including the school-age children associated with the recent addition of the Marine Special Operations Command) would result in a gain of 3,250 school-age children. Of these, 90 percent (2,925) would be estimated to attend local area schools. These impacts could be alleviated through the Federal Impact Aid program, as well as actions taken by the Military Growth Task Force for North Carolina's Eastern Region. Additionally, two new elementary schools are planned for construction within the Onslow County school system and two on-base schools are also proposed for construction (one elementary and one middle school) as part of a separate MCB Camp Lejeune Public Private Venture Housing action. Together, these actions would alleviate potential cumulative impacts to schools both on-base and in the local community. Impacts to schools and potential mitigation measures will be further addressed in the EIS for Growing the Force at MCB Camp Lejeune, MCAS New River, and MCAS Cherry Point.

**Transportation and Traffic:** The cumulative impact of the influx of military personnel and family members would result in an increase in traffic at MCB Camp Lejeune and the surrounding community. Nearby roadways could experience increases in traffic from associated commuters who live in different parts of the Base and county, namely United States Route 17 (US 17), North Carolina Route 172 (NC 172), and North Carolina Route 24 (NC 24). A Traffic Study was completed previously that provided recommendations to existing roadways under various growth scenarios at MCB Camp Lejeune. Additionally, under a separate action, improvements to the Main Gate, Piney Green Gate, Old Sawmill Road, and Piney Green Road would be constructed, thereby improving traffic flow on and off-base. Collectively, these improvements would reduce the cumulative impacts to traffic and transportation on-base and the surrounding roadways.

**Infrastructure and Utilities:** Cumulatively, there would be an increase in demand for infrastructure and utilities services including potable water, wastewater disposal, electricity and telecommunications, and solid waste disposal both on-base and in the local community. MCB Camp Lejeune has proposed several recent upgrades to the existing infrastructure and utility service network on-base that would ensure that demands are met. The increase in personnel associated with the Grow the Force initiative would occur as a phased approach over several years; thus allowing local communities to respond as needed to the increase in demand for utilities and infrastructure. Additionally, MCB Camp Lejeune is working closely with the Military Growth Task Force to identify impacts to this resource area.

### **ES.3 ALTERNATIVES CONSIDERED**

Several alternatives for fulfilling the purpose and need of the proposed action were considered to provide adequate temporary facilities at MCB Camp Lejeune. Alternatives for siting the temporary facilities were evaluated based on the following factors: 1) Locate facilities for incoming personnel with their existing

parent command facilities; 2) Locate facilities on or near previously or recently disturbed land to the fullest extent possible; 3) Locate facilities in areas that do not conflict with the proposed facilities associated with the permanent beddown; 4) Avoid sensitive environmental resources (e.g. sensitive species, habitat, and cultural resources); and 5) Minimize conflicts with adjacent facilities and missions.

In order to meet the purpose of the Grow the Force initiative, increasing the Marine Corps end strength must be expedited while not compromising the current Marine Corps missions. Existing force structure and organization needs to be maintained in order to not further complicate, retard, or jeopardize the Marine Corps mission. The proposed action accomplishes this by focusing the immediate manpower increases to existing units by providing Marines possessing the appropriate skill sets. These units are already established at MCB Camp Lejeune; consequently, alternative beddown locations at other installations are not feasible because they would not meet the overall purpose of the Grow the Force initiative of establishing increased manpower within existing Marine units in the immediate timeframe.

Alternative siting locations for the facilities were considered; however locating them in either existing facilities or in temporary facilities adjacent to their parent units would allow for command, control, and cost efficiencies. Renovation of existing facilities was dismissed from further analysis because existing facilities lack adequate space to accommodate the proposed increase in personnel.

Analysis of the No Action Alternative is also provided in this EA because it provides a baseline against which to compare the impacts of the proposed action.

#### **ES.4 MITIGATION**

Several mitigation and minimization measures would be implemented as part of the proposed action. Following are *examples* of the types of measures that would be implemented. Please see Chapter 4 for the complete list.

If during construction and site grading any site of potential historical or archaeological significance is encountered, the Director, Environmental Management would be notified. The Director, Environmental Management would order actions in the vicinity halted and the area marked. The Base archaeologist would immediately be notified at telephone (910) 451-7230.

BMPs would be used to avoid and minimize the release of sediments into stormwater. Mitigation plans would include both short-term (construction phase) and long-term (project life) features to meet the requirements of the Base's Stormwater Pollution Prevention Plan.

All projects would be designed to avoid and minimize impacts to wetlands and waters of the United States. Construction within wetlands or streams is not expected.

All projects would be designed to avoid impacting any Installation Restoration sites to the extent practicable. Should this be unavoidable, MCB Camp Lejeune would consult with the appropriate Base

Program Managers to establish an appropriate course of action for each proposed construction project to ensure that federal and state agency notification requirements are met and to arrange for agency consultation as necessary where existing Installation Restoration sites would be affected.

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## ACRONYMS AND ABBREVIATIONS

ac	Acre	NAVFAC	Naval Facilities Engineering Command
AEC	Area of Environmental Concern	NCAC	North Carolina Administrative Code
bf	Board Feet	NCDENR	North Carolina Department of Environment and Natural Resources
BMP	Best Management Practice	NCDMF	North Carolina Department of Marine Fisheries
CAMA	Coastal Area Management Act	NEPA	National Environmental Policy Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act	NO <sub>2</sub>	Nitrogen Dioxide
CLDS	Camp Lejeune Dependent Schools	NOAA	National Oceanic and Atmospheric Administration
CO	Carbon Monoxide	NPDES	National Pollutant Discharge Elimination System
CZMA	Coastal Zone Management Act	O <sub>3</sub>	Ozone
dBA	A-weighted decibel	Pb	Lead
dBC	C-weighted decibel	PEB	Pre-Engineered Building
DoN	Department of the Navy	PK	Pre-Kindergarten
EA	Environmental Assessment	PM <sub>2.5</sub>	Particulate Matter 2.5 Microns or Less in Diameter
EIS	Environmental Impact Statement	PM <sub>10</sub>	Particulate Matter 10 Microns or Less in Diameter
ft	Feet	ppm	Parts per Million
FY	Fiscal Year	SIGINT	Signals Intelligence
ha	Hectare	SO <sub>2</sub>	Sulfur Dioxide
HAZMAT	Hazardous Materials	sq ft	Square Feet
km	Kilometers	sq m	Square Meters
KN	Kindergarten	SWMU	Solid Waste Management Unit
m	Meters	TSP	Total Suspended Particulates
MBTA	Migratory Bird Treaty Act	US 17	United States Route 17
MCAS	Marine Corps Air Station	USACHPPM	United States Army Center for Health Promotion and Preventative Medicine
MCB	Marine Corps Base	USEPA	United States Environmental Protection Agency
MEB	Marine Expeditionary Brigade	USMC	United States Marine Corps
MEF	Marine Expeditionary Force	USFWS	United States Fish and Wildlife Service
mgd	Million Gallons per Day	UST	Underground Storage Tank
µg/m <sup>3</sup>	Micrograms per Cubic Meter	WTP	Water Treatment Plant
mi	Mile		
mld	Million Liters per Day		
mm	Millimeter		
MMRP	Military Munitions Response Program		
MP	Military Police		
NC 24	North Carolina Route 24		
NC 172	North Carolina Route 172		

## **1.0 PURPOSE AND NEED**

### **1.1 Introduction**

The United States Marine Corps (USMC) proposes to accommodate immediate increases in Marine forces at Marine Corps Base (MCB) Camp Lejeune, North Carolina, in a combination of existing and newly constructed temporary facilities until the decision to construct permanent facilities for these Marines is made. Use of existing and newly constructed temporary facilities would expedite the placement and accommodation of incoming new Marines in support of the Marine Corps Grow the Force initiative and would satisfy the immediate requirements to place incoming forces per the Presidential proposal authorized by Congress.

All of the proposed temporary facilities evaluated in this Environmental Assessment (EA) would be constructed within the Base boundaries, and most construction would occur on developed areas, on or near previously disturbed sites, or in locations with similar missions with respect to operations, training, administration, warehousing, storage, and maintenance activities. The proposed facilities would eventually be removed once permanent facilities are constructed, with the exception of paved areas. Pre-engineered buildings (PEBs), although considered temporary structures, are more durable than other types of temporary facilities and may be utilized for a longer duration. Under the proposed action, construction would occur at four different project areas. The facilities would be built over a 3-year period beginning in 2008.

This EA focuses on the potential environmental impacts associated with the proposed *construction activities* for temporary facilities associated with the immediate increase in Marine forces at MCB Camp Lejeune. As such, analysis is focused on resources that would be potentially affected by the proposed construction activities (see Section 1.4). The Cumulative Effects section of this EA focuses on additional resource areas that could be affected in combination with past, present, and reasonably foreseeable future actions (also see Section 1.4), including the Presidential proposal authorized by Congress to increase the overall end strength of the USMC. A separate Environmental Impact Statement (EIS) is being conducted to evaluate the potential environmental impacts of the *permanent assignment* of Marines at MCB Camp Lejeune and other Marine Corps installations (*EIS for Growing the Force at MCB Camp Lejeune, Marine Corps Air Station [MCAS] New River, and MCAS Cherry Point*) and thus will evaluate in much greater detail potential impacts to the various resource areas than are analyzed in this EA.

MCB Camp Lejeune is located in southeastern North Carolina, approximately halfway between the cities of Wilmington and New Bern (Figure 1-1). The northern boundary of the installation adjoins the city of Jacksonville, North Carolina; the southern boundary extends to the Atlantic Ocean. As Figure 1-1 demonstrates, there is a strong military presence in eastern North Carolina.

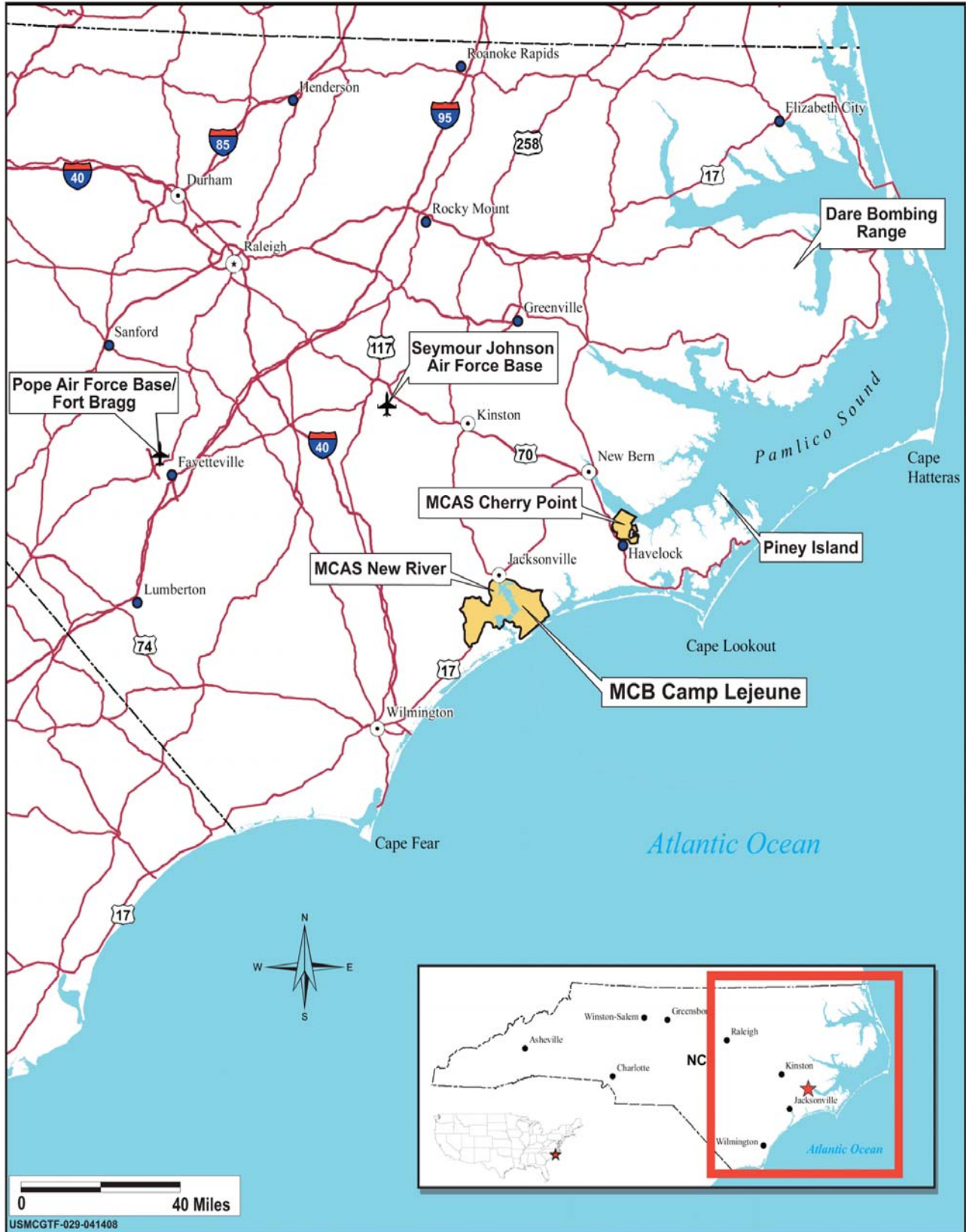


Figure 1-1 Location of MCB Camp Lejeune

## **1.2 Background on the Grow the Force Initiative**

### **1.2.1 Required Growth**

The United States of America's 21<sup>st</sup>-Century Marines have unquestionably displayed the value of an "expeditionary" force (principal war-fighting organization, particularly for larger crises or contingencies and sent to fight or conduct military service in another country) in fighting worldwide terrorism and unconventional conflicts against diverse enemies. The Marine Corps is committed to fighting the Long War which includes defeating terrorist networks, defending the homeland, and preventing hostile states and non-state actors from acquiring or using weapons of mass destruction. The Long War is characterized by current campaigns in the United States Central Command's area of responsibility, as well as by diverse and sustained engagements around the world. Though these engagements occur around the globe, they are in defense of the United States' homeland, freedoms, and way of life. The Long War is a multifaceted, generational struggle that will not be won in one battle, in one country, or by one method.<sup>1</sup> To meet the demands of the Long War and remain prepared for the inevitable contingencies that will arise, the Marine Corps must be sufficiently manned, effectively trained, and properly equipped.

The Marine Corps uses the Total Force Structure Process to transform strategic guidance, policy constraints, and commander-generated recommendations into the integrated capabilities required to execute Marine Corps missions. The Total Force Structure Process relies on a detailed, integrated examination of doctrine, organization, training, material, leadership, personnel, and facilities, ensuring that no aspect of the enterprise is ignored when new requirements for the Marine Corps are identified—either from the top-down or from the bottom-up. A top-down functional area analysis, and a functional needs analysis produce tasks, conditions, and standards that must be met for the Marine Corps to accomplish its mission, and identifies gaps when these tasks, conditions, and standards are not satisfied by existing Marine Corps force structure. Recommendations for remedies to gaps identified in the above process are proposed and analyzed through the doctrine, organization, training, material, leadership, personnel, and facilities process and presented to the Commandant's Marine Requirements Oversight Council. Similarly, operational commanders provide the bottom-up input to the Commandant based on their constant assessment of operational and supporting establishment units. This process and the resulting recommendations are ever evolving due to changing circumstances, new administrations, new Combatant Commanders, and changing enemies and tactics.

The Total Force Structure Process has played a major role in determining the Marine Corps' evolving force requirements and in articulating to the President of the United States a proposed increase in Marine Corps end strength. Utilization of Total Force Structure Process, with its reliance on doctrine, organization, training, material, leadership, personnel, and facilities integration and assessment, consisted of a fusion of top-down guidance and bottom-up recommendations, and determined Marine Corps force requirements for balancing the need to comply with the Department of Defense policy on 1:2

deployment-to-dwell time ratio<sup>2</sup> with the needs to train in core competencies to ensure Marines are ready to meet the challenges of the future. In President George W. Bush's State of the Union address (January 2007), the President announced under the recommendation of the Secretary of Defense, a proposal to increase the end strength of the USMC from 180,000 to 202,000 over the next five years (by Fiscal Year 2011 [FY11]).<sup>3</sup>

### **1.2.2 Purpose of the Grow the Force Initiative**

To meet any crisis or conflicts that may arise, the Marine Corps must be sufficiently manned, well trained, and properly equipped.<sup>4</sup> New challenges to our forces have emerged, yet the top priority is to ensure Marines have the resources necessary to fight and win in the Long War against worldwide terror as well as in conventional conflict against future adversaries.<sup>5</sup> Currently, Marines are deployed around the world at an increased level and duration, causing hardships for Marines and their families. Additionally, our major war-fighting headquarters have been challenged in their ability to exercise the sophisticated skill sets that have enabled Marine Expeditionary Forces to achieve success in various types of battle.<sup>6</sup>

The Marine Expeditionary Force is the principal Marine Corps war-fighting organization, particularly during larger crises or contingencies. The deployment-to-dwell ratio (the time a Marine is deployed versus the time stationed at home) should support adequate time for units to train and prepare for their next deployment, to conduct the mission, and to recover, while maintaining current military mission and readiness. The current 1:1 deployment-to-dwell ratio experienced by many units challenges the Marines' ability to maintain training and readiness for all potential missions. It also has the potential to impact Marines' quality of life because of increased time away from family and home. Marine Corps training requirements are derived from Congress' mandate to be the Nation's "...versatile, Expeditionary Force in readiness... To be the most ready when the nation generally is least ready."<sup>7</sup>

Marine Corps training is built along a continuum that is well-defined and structured to provide combat-ready Marines. From individual-level to unit collective training, this continuum is constantly adapting to changes, such as those highlighted by the Long War. The Marine Corps training system provides the means to attain an exacting level of combat readiness across the entire spectrum of military operations. Reduction of time available to train unnecessarily complicates the Marine Corps' ability to provide

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<sup>1</sup> *United States Marine Corps Concepts & Programs 2007*, Division of Public Affairs, Marine Corps News Branch, Headquarters USMC.

<sup>2</sup> *Utilization of the Total Force*, Secretary of Defense Memorandum, 19 January 2007.

<sup>3</sup> Major General Johnson Force Requirements Determination Process before the House Armed Services Committee, 30 January 2007 (Final).

<sup>4</sup> Purpose and need for the proposed Grow the Force action was provided by Headquarters USMC on 12 September 2007. Specific projects proposed for this interim phase were identified by MCB Camp Lejeune.

<sup>5</sup> Budget of the United States Government, FY08, <http://www.whitehouse.gov/omb/budget/fy2008/defense.html>. 28 March 2007.

<sup>6</sup> *United States Marine Corps Concepts & Programs 2007*, Division of Public Affairs, Marine Corps News Branch, Headquarters USMC.

<sup>7</sup> Public Law 82-416, 1952.



combat-ready units training in the war-fighting capabilities across the spectrum of conflict. To avoid these negative impacts to readiness, training, mission, and quality of life, the Secretary of Defense established a 1:2 deployment-to-dwell ratio goal for all active component forces.<sup>8</sup> The increased dwell time for Marines would provide an opportunity to alleviate the strain on units abroad, provide better quality of life, and allow for the proper training environments necessary to conduct expeditionary operations across the spectrum of crisis and conflict.

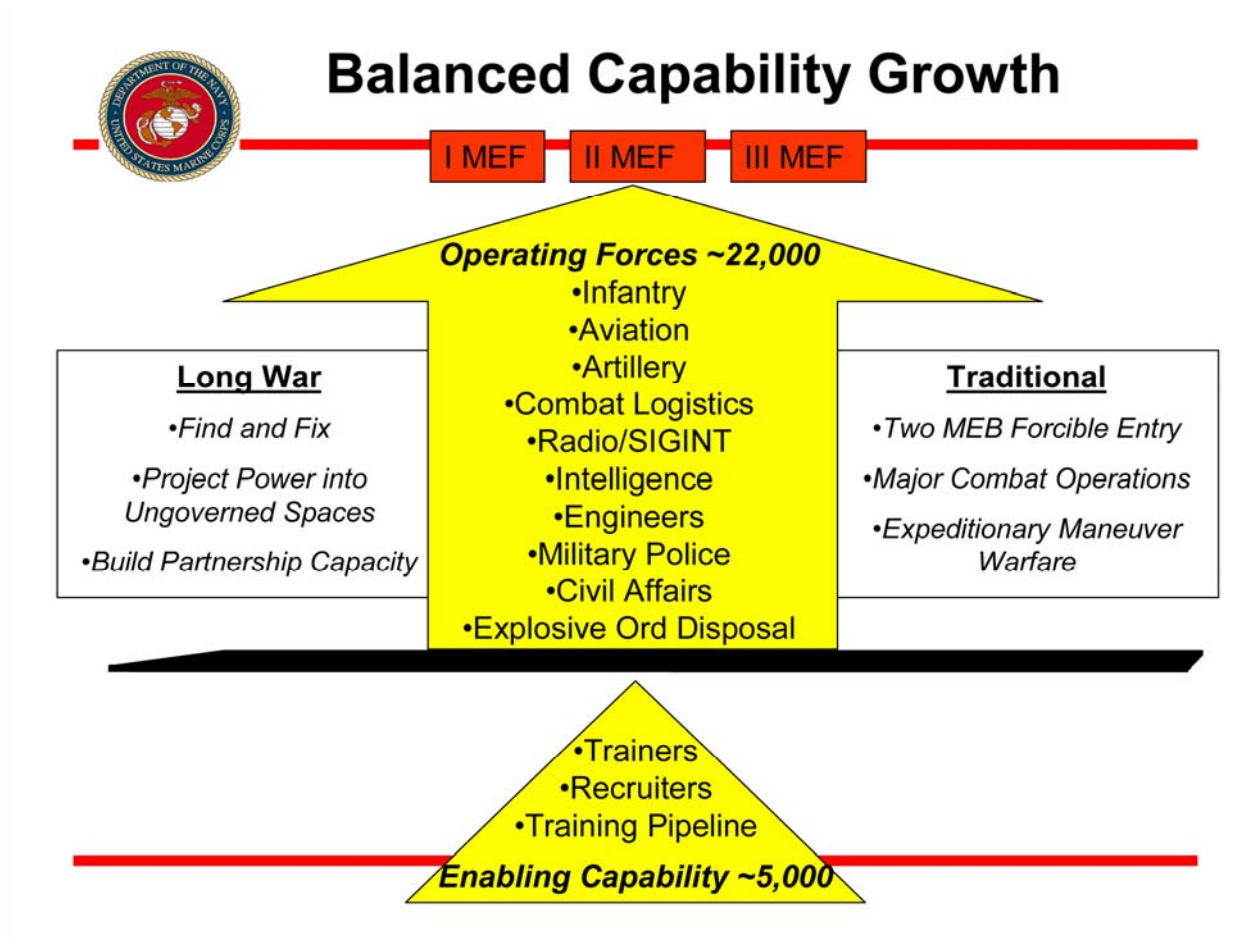
An alternative approach to reorganize the Marine Corps internally as a means of alleviating the immediate need for the proposed increase does not meet total force consideration goals. The threat to upholding the mission, and the monetary and time costs associated with reorganization would further exacerbate the strain on Marine forces and the challenges to meeting training requirements. A balanced growth in capability throughout the Marine Corps needs to be achieved, with a focus on the primary existing war-fighting organization of the Marine Corps, the Marine Expeditionary Force. This balanced approach includes ensuring the necessary skills that are required to fight the Long War and being prepared to participate in the traditional national security roles of the Marine Corps (Figure 1-2). Focused growth of the Marine Expeditionary Forces, Marine Expeditionary Brigades, coupled with improved deployment-to-dwell ratio, would provide the opportunity to enhance the irregular warfare capabilities and contingency missions training, and increase the available training time for most units. The result would be a Marine Corps, prepared as a “total force,” to meet the challenges and opportunities of a rapidly changing world and emerging threats.

### **1.2.3 Description of the Grow the Force Initiative**

As stated above, the USMC proposes to increase its end strength from approximately 180,000 to 202,000 Marines by FY11. The overall increase in end strength would be accomplished by yearly incremental increases in the existing war-fighting organization of the Marine Corps. First, three new infantry battalions and elements of their supporting structure would be established across the Marine Corps organization. This first step would increase the force by approximately 4,000 Marines. Included in this first step is the stand up of additional related combat support and services such as intelligence, military police, and civil affairs capabilities. This initial increase in Marines and support services began in late FY07. Following this initial increase, a yearly increase of approximately 5,000 Marines is planned to occur between FY08 to FY10, with an additional 3,000 Marines proposed in FY11. This incremental increase of the Marine Corps would ensure that Marines are properly prepared and trained for future conflicts, support the existing conflicts, and provide the opportunity to meet the Secretary of Defense’s intent to improve the deployment-to-dwell ratio to 1:2 by FY11.

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<sup>8</sup> Statement of General James T. Conway, Commandant of the Marine Corps, Before the House Armed Services Committee on Marine Corps Posture. 1 March 2007.



(Source: United States Marine Corps Concepts & Programs, 2007)

Note: MEF = Marine Expeditionary Force; MEB = Marine Expeditionary Brigade; SIGINT = Signals Intelligence.

**Figure 1-2 Balanced Force Capability Growth**

The proposed yearly augmentation to established units requires these individuals to be stationed and trained at Marine Corps installations and ranges currently supporting these units. As mentioned in the purpose and need, reorganizing the Marine Corps does not achieve the goal of balancing the war-fighting capability across the three Marine Expeditionary Forces construct, nor does it meet the immediate need to provide for adequate training and continued mission readiness. In general, the manpower increase would enable the manning rates to more closely approach full unit strength as proposed under the Grow the Force initiative. Table 1.2-1 illustrates the types of units that would be augmented across the Marine Corps.

**Table 1.2-1 Marine Unit Types Proposed as Part of the 202,000 End Strength**

• Infantry Battalions	• Foreign Officer Area/Civil Affairs
• Artillery Battalions	• Unmanned Aerial Surveillance
• Reconnaissance	• Logistical Support
• Military Police	• Engineer Support
• Air Naval Gunfire Liaison Company	• Explosive Ordnance Disposal Units
• Engineers	• Helicopter Medium Light/Attack Squadrons
• Recruiters	• Chinook 53 Squadrons
• Trainers	• Aviation Command and Control
• Regiment Headquarters	• Communications
• Artillery Battery	• Tank Battalion
• Ground Mobility	• Logistics Company
• Truck Company	• Bridge Company
• Intelligence	• Marine Fixed Wing Squadrons

Currently, the Marine Corps units and functions shown in Table 1.2-1 are located primarily at MCB Camp Lejeune, North Carolina; MCAS Cherry Point, North Carolina; MCAS New River, North Carolina; Marine Corps Air Ground Combat Center Twentynine Palms, California; and MCB Camp Pendleton, California. As mentioned above, the doctrine, organization, training, material, leadership, personnel, and facilities process determined the requirements needed to grow the Marine Corps force. This process included determining the force laydown, which was based on existing mission capabilities, facility and equipment availability, training constraints, and the associated costs at each installation to provide the required capabilities. In addition, the need to expedite the ability to accommodate the proposed increase of Marines, both for the initial as well as the full operational increase, was a vital criterion in developing the proposed action.

Of the approximately 22,000 additional Marines required to increase the end strength from 180,000 to 202,000, approximately 7,700 new Marines and civilian personnel will be added to MCB Camp Lejeune by 2011.

### **1.3 Purpose and Need for the Proposed Action Evaluated in this EA**

The proposed action evaluated in this EA is the construction of certain temporary facilities needed to accommodate immediate increases in Marine forces at MCB Camp Lejeune, North Carolina. The Marines would be accommodated in a combination of existing and newly constructed temporary facilities until the decision to construct permanent facilities for these Marines is made. As indicated in Section 1.2 above, the purpose of the proposed action is to improve the deployment-to-dwell-ratio for Marines and support the planned increase in end strength associated with the Grow the Force initiative. The proposed action is needed to expedite the placement and accommodation of incoming new Marines because MCB Camp Lejeune currently does not have sufficient facilities to accommodate the proposed increase in Marines. This EA focuses on the potential environmental impacts associated with the proposed *construction*

*activities* for temporary facilities associated with the immediate increase in Marine forces at MCB Camp Lejeune.

## **1.4 The Environmental Review Process**

### **1.4.1 The National Environmental Policy Act**

The National Environmental Policy Act (NEPA) of 1969 requires consideration of environmental issues in federal agency planning and decision making. Under NEPA, federal agencies must prepare an EA or EIS for any federal action, except those actions that are determined to be “categorically excluded” from further analysis.

An EA is a concise public document that provides sufficient analysis for determining whether the potential environmental impacts of a proposed action are significant, resulting in the preparation of an EIS, or not significant, resulting in the preparation of a Finding of No Significant Impact. An EIS would be prepared for those federal actions that may significantly affect the quality of the natural or human environment.

The USMC prepares EAs and EISs pursuant to NEPA and the following NEPA implementation regulations and guidelines:

- The Council on Environmental Quality regulations, as contained in 40 Code of Federal Regulations Parts 1500 to 1508, which direct federal agencies on how to implement the provisions of NEPA; and
- Marine Corps Order P5090.2A, Change 1, Chapter 12 (USMC, 2008a), which documents the Marine Corps’ internal operating instructions on how it implements the provisions of NEPA.

### **1.4.2 NEPA Process for the Grow the Force Initiative**

As previously described, the overall Grow the Force initiative would increase the USMC end strength from 180,000 to approximately 202,000 Marines. The immediate increases in Marine forces would be accommodated at various Marine Corps installations in either existing facilities or temporary facilities since there is insufficient time to complete all required activities associated with Military Construction projects. The immediate increases are considered temporary beddowns and will be analyzed as separate actions from those actions considered for the permanent beddown of the Marine forces.

The permanent beddown analysis will include the permanent accommodation of all increased Marine forces at an installation, including the associated Military Construction, infrastructure upgrades, and potential changes to training type and tempo. The scope of the temporary beddown analysis will be focused and will rely on existing studies, research, and previous NEPA analysis as appropriate. Many of the temporary beddown activities would occur in existing facilities. Both the temporary and permanent beddown analysis will address the cumulative effects of the proposed increase in Marine forces.

The Marine Corps will assess the potential environmental impacts of the *permanent beddown* (i.e. *permanent assignment*) of Marines at MCB Camp Lejeune and other Marine Corps installations in North Carolina in a separate EIS (*EIS for Growing the Force at MCB Camp Lejeune, MCAS New River, and MCAS Cherry Point*). That EIS was initiated on 14 December 2007 with publication of the Notice of Intent in the *Federal Register* and is expected to be completed in the summer of 2009. That EIS will evaluate the proposed permanent increase of approximately 9,900 Marine Corps personnel in North Carolina, including approximately 7,700 at MCB Camp Lejeune, 1,400 at MCAS New River, and 800 at MCAS Cherry Point. It will evaluate the construction and operation of permanent facilities required by the personnel increase, and assess the impacts of the additional 9,900 Marines and civilian personnel as well as their dependents that would be relocated to the installations and surrounding communities. As such the EIS will provide detailed information regarding environmental impacts to all resource areas at each installation and the surrounding counties.

At MCB Camp Lejeune, the Environmental Impact Working Group reviews all proposals at the Base to determine the requirements for NEPA documentation, in accordance with Base Order 11000.1D (MCB Camp Lejeune, 2000). The Environmental Impact Working Group reviewed the proposed *temporary beddown* of the immediate increase of incoming Marines at MCB Camp Lejeune and determined that several proposed temporary construction projects required the preparation of an EA, while others were categorically excluded from NEPA requirements in accordance with Marine Corps Order P5090.2A, Change 1, Chapter 12 (USMC, 2008a). Table 1.4-1 summarizes those temporary beddown projects determined to be categorically excluded. All of these projects have been categorically excluded based on categorical exclusion number 34, which applies to “new construction that is similar to existing land use and, when completed, the use of operation of which complies with existing regulatory requirements (e.g., a building within a cantonment area with associated discharges/runoff within existing handling capacities).” Table 1.4-2 identifies those temporary beddown projects that are evaluated in detail in this EA.

For those temporary beddown projects evaluated in this EA, a project kickoff meeting was held on 3 October 2007 with representatives from Marine Corps Installations East, MCB Camp Lejeune, Naval Facilities Engineering Command (NAVFAC) Mid-Atlantic, and the EA preparer. At this meeting, this group further discussed the scope of environmental issues to be addressed in the EA, along with alternatives to the proposed action. After consideration of the proposed action, it was decided that the analysis in the EA should focus on potential impacts to land use, coastal zones, air quality, noise, natural resources, community facilities and services, infrastructure and utilities, socioeconomics, transportation and traffic, and hazardous materials and waste. The *EIS for Growing the Force at MCB Camp Lejeune, MCAS New River, and MCAS Cherry Point* will evaluate in detail the environmental impacts of

**Table 1.4-1 Temporary Beddown Projects Categorically Excluded**

ER Number	LE Number	Primary Unit/ Unit Type	Project Description	Implementation Year
ER-07-206	LE16-P1229	1/9 Infantry Battalion	Project would install portable armory that would be located next to Building HP 112 and extend the fence line 6 m by 37 m (20 ft by 120 ft).	FY08
ER-07-177	LE12-P1229	Civil Affairs Detachments, Civil Affairs Planners	Install one doublewide trailer for administrative offices, two PEBs and portable armory next to Building HP328. Total acreage: approximately 0.1 ha (0.25 ac) or 1,115-1,394 sq m (12,000-15,000 sq ft). Extend fencing 6 m by 37 m (20 ft by 120 ft).	FY08
ER-07-218	LE16-P1229	3/9 and 1/9 Infantry Battalions	Project proposes to demolish tennis courts, install one 3,251 sq m (35,000 sq ft) PEB at the Bus Station and gravel lot, and install fencing. Project would also install two armories next to Building 103 and extend fencing 6 m by 37 m (20 ft by 120 ft).	FY08
ER07-176	LE05-P1229	Combat Logistics Battalion (Direct Support Regiment)	Install two portable armories at Building FC359 and extend fencing 6 m by 37 m (20 ft by 120 ft).	FY08
ER-07-188	LE01-P1229	Anglico Platoon	Interim Layout project that would install five doublewide trailers, one PEB supply warehouse, and privately owned vehicle parking lot near Building FC251 (less than 0.4 ha ( 1 ac).	FY08
ER-07-189	LE03-P1229	2 Military Police Companies and Platoons	Project proposes to install three armories next to Building FC301.	FY08
ER-08-026	LE02-P1229	Counter Intelligence/Human Intelligence 2 <sup>nd</sup> Battalion	Project proposes to install 2-two story administrative doublewide trailers behind existing parking lot located between Buildings 58 and 67.	FY08
ER-07-191	LE17-P1220	2 <sup>nd</sup> Marines; 6 <sup>th</sup> Marines; and 8 <sup>th</sup> Marines Infantry Battalions	Plus-Up project proposes to install four portable armories for 2 <sup>nd</sup> Marines located next to Building HP259 and extend fence line. Project proposes to install four portable armories for 8 <sup>th</sup> Marines located next to Building HP131 and extend fence line. Project also proposes to install four portable armories for 6 <sup>th</sup> Marines located next to Building HP413 and expand the fence line.	FY09
ER-07-178	LE18-P1229	Marine Logistics Group Communications	Plus-Up project proposes to install one portable armory located next to Building FC359 and extend fence line.	FY09
ER-07-209	LE09-P1229	Combat Logistics Regiment	Project would install two portable armories.	FY09
ER-07-187	LE05-P1229	Combat Logistics Battalion (Direct Support Regiment)	Project would install four portable armories next to Building FC359 and extend fencing 6 m by 37 m (20 ft by 120 ft).	FY08

ER Number	LE Number	Primary Unit/ Unit Type	Project Description	Implementation Year
ER-07-201	LE21-P1229	Training and Education Command (School of Infantry)	School of Infantry Camp Devil Dog Interim Layout would include two PEB classrooms, one with walls and one without walls, three buildings for administration and billeting, two administration trailers next to Building G615, one PEB for Indoor Simulated Marksmanship Trainer (1,254 sq m [13,500 sq ft]) at Building G553, and locate two classroom PEBs (1,858 sq m [20,000 sq ft]) next to Building TC601.	FY08
ER-07-202	LE22-P1229	Tank Company	Project would install three doublewide trailers located next to Building 509, install one portable armory next to Building 1855 and HAZMAT Building, and extend fence line.	FY11
ER-07-203	LE23-P1229	Training and Education Command (Marine Corps Combat Support School)	At Camp Johnson Schools, project would install four doublewide trailers, two PEBs, and a parking near Building M107.	FY08
ER-07-205	LE27-P1229	Training and Education Command (Staff Non-Commissioned Officer Academy)	At Training and Education Command Staff Non-Commissioned Officer Academy, project would install one fenced CONEX box portable armory located near M201 with fencing and gravel lot.	FY08
ER-08-028	LE24-P1229	Training and Education Command (Marine Corps Engineering School)	At Courthouse Bay Marine Corps Engineering School, project would install three doublewide trailer classrooms; 1 trailer placed at the following locations: BB50; BB288; and BB87.	FY08
ER-07-212	LE08-P1229	Division Military Police Company	Interim Layout would include tactical parking lot and two portable armories at Building HP328. Total size: 0.4 ha (1.1 ac).	FY08
ER-08-072	LE14-P1229	Explosive Ordnance Disposal Specialists	Set up three trailers and a 93 sq m (1,000 sq ft) PEB near FC359. Also includes septic system, gravel privately owned vehicle parking lot, gravel access road, and storm water management pond.	FY08

Notes: ac = acres; ft = feet; ha = hectares; HAZMAT = Hazardous Materials; PEB = pre-engineered building; sq ft = square feet; sq m = square meters.

ER = Environmental Review; LE = Lejeune – These are internal tracking numbers at MCB Camp Lejeune.

**Table 1.4-2 Temporary Beddown Projects Analyzed in this EA**

ER Number	LE Number	Unit Supported	Typical Facilities	Implementation Year
ER-07-172	LE15-P1229	4 <sup>th</sup> Reconnaissance Platoon	PEB Supply warehouse Storage area Portable armory Parking	FY08
ER-07-175	LE18-P1229	Company E, 2 <sup>d</sup> Amphibious Assault Battalion	Portable trailers for administration and classrooms PEB Supply warehouse Portable armories HAZMAT storage locker Parking	FY10
ER-07-173	LE03-P1229; LE26-P1229	Consolidated Base Military Police (MP)/Military Headquarters Group MP Logistics Command Element	Portable trailers for administration and classrooms PEB Supply warehouse PEB Storage Portable armories Dog kennels Dog runs/training areas Dog cemetery Access road/Parking	FY08
ER-07-174	LE06-P1229	Counter-Battery Radar Platoon	Portable trailers for administration and classrooms PEB Supply warehouse PEB Motor T/Communication Portable armories HAZMAT storage locker Parking	FY09
ER-07-211	LE07-P1229	Battery F, 2 <sup>d</sup> Artillery Battalion	Portable trailers for administration PEB Supply warehouse PEB Ordnance maintenance building Portable armories HAZMAT storage locker	FY09
ER-07-211	LE10-P1229	Battery G, 2 <sup>d</sup> Artillery Battalion	Portable trailers for administration PEB Supply warehouse PEB Ordnance maintenance building PEB Survey/metro facility Portable armories HAZMAT storage locker	FY10
ER-08-121	LE12-P1229	Civil Affairs	PEB Supply warehouse PEB Communication	FY08

Notes: HAZMAT = Hazardous Materials; PEB = pre-engineered building  
ER = Environmental Review; LE = Lejeune – These are internal tracking numbers at MCB Camp Lejeune.



the additional 9,900 Marines and civilian personnel as well as their dependents that would be relocated to the installations and surrounding communities. While this EA for temporary construction activities at MCB Camp Lejeune focuses on construction impacts, it will also include a cumulative analysis of certain resource areas, including socioeconomic factors or community services (e.g., schools), and transportation and traffic, that could potentially be adversely affected when considering all 7,700 Marines to be permanently assigned to MCB Camp Lejeune under the Presidential proposal authorized by Congress.

To the extent possible, analyses of the various resources presented in Chapters 3 and 4 of this EA are streamlined based on the anticipated level of potential impact. As previously noted, the focus of this EA is on the potential environmental impacts associated with the proposed construction of temporary facilities. As such, and consistent with 40 Code of Federal Regulations 1501.7(a)(3), the following resource areas are not analyzed in Chapters 3 and 4 of this EA, but are only analyzed in the context of potential Cumulative Effects in this EA because the proposed construction activities either have no potential to affect them or the potential impacts would be negligible:

**Socioeconomics and Environmental Justice:** The proposed construction activities would not result in changes to demographics or housing and would not result in adverse impacts from environmental justice issues. Additionally, the proposed construction activities would result in only minor, additive impacts to the local economy. Therefore, Socioeconomics and Environmental Justice are further analyzed in the Cumulative Effects section of this EA only.

**Community Facilities and Services:** The proposed construction activities would not affect on-base or community facilities and services in the local community. Therefore, this resource is analyzed in Cumulative Effects only.

**Traffic and Transportation:** There would be a minor increase in traffic associated with the proposed construction activities due to an increase in construction vehicles at the Base; however this impact would be temporary and would not result in adverse impacts to traffic and transportation at MCB Camp Lejeune. Therefore, analysis of this resource area is considered in Cumulative Effects only.

**Infrastructure and Utilities:** The proposed construction activities would require connections to and support from the existing on-base infrastructure and utility system including electricity, telecommunications, potable water, wastewater, and solid waste disposal. However, since the proposed construction activities would result in only negligible impacts to Infrastructure and Utilities, analysis of this resource area is considered in Cumulative Effects only.

Furthermore, the following resource was dismissed from any further analysis as described below.

**Geology:** The proposed action would not involve any construction or excavation activities that would affect the underlying geology of the proposed project areas. All of the proposed activities

would be limited to surface disturbance. Therefore, analysis of geologic resources was eliminated from further discussion.

### **1.4.3 Decision to be Made**

The intent of this EA is to assess the potential environmental effects of construction of *temporary* facilities to support incoming Marines at MCB Camp Lejeune associated with the immediate force increases. Other environmental documentation (*EIS for Growing the Force at MCB Camp Lejeune, MCAS New River, and MCAS Cherry Point*) will assess the environmental effects of the *permanent assignment* of Marines associated with the force increase. The information and analyses documented in this EA will be used to support the Commanding Officer of MCB Camp Lejeune in making one of three decisions regarding the potential impacts of the temporary construction projects: 1) a Finding of No Significant Impact is appropriate, 2) a Finding of No Significant Impact is not appropriate and preparation of an EIS is required, or 3) a Finding of No Significant Impact is not appropriate and the proposed action should not proceed.

### **1.4.4 Agency Coordination and Permit Requirements**

In addition to NEPA, other laws, regulations, permits, and licenses may be applicable to the proposed temporary facilities at MCB Camp Lejeune. Specifically, the proposed action may require:

- Federal Coastal Consistency Negative Determination concurrence by the North Carolina Department of Environment and Natural Resources (NCDENR), Division of Coastal Management;
- Compliance with the 2006 revision of MCB Camp Lejeune Recovery Plan for the Red-Cockaded Woodpecker;
- Concurrence from the United States Fish and Wildlife Service (USFWS) on informal consultation regarding red-cockaded woodpeckers;
- Erosion and Sediment Control Plan approval by the NCDENR, Division of Land Resources, Land Quality Section;
- Stormwater Management Permit from the NCDENR, Division of Water Quality;
- Non-Discharge Sewer Extension Permit from the NCDENR, Division of Water Quality, Non-Discharge Branch; and
- Water Connection Permit from the NCDENR, Public Water Supply Section.

## **2.0 PROPOSED ACTION AND ALTERNATIVES**

The Council on Environmental Quality's *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act* establish a number of policies for federal agencies, including "...using the NEPA process to identify and assess reasonable alternatives to the proposed action that will avoid or minimize adverse effects of these actions on the quality of the human environment" (40 Code of Federal Regulations 1500.2 (e)). The proposed action would accommodate immediate increases in Marine forces at MCB Camp Lejeune, North Carolina in either existing or newly constructed temporary facilities until the decision to construct permanent facilities for these Marines is made. Use of existing and newly constructed temporary facilities would expedite the placement and accommodation of incoming new Marines in support of the Marine Corps Grow the Force initiative and would satisfy the immediate requirements to place incoming forces per the Presidential proposal authorized by Congress.

### **2.1 Factors Used in the Evaluation of Siting Facilities and Alternative Identification**

A team was established for planning and designing the temporary facilities. The design professionals who were present included: project managers, engineers (civil, mechanical, electrical, and environmental), architects, and interior designers. Base personnel included: facility planners, environmental planners and scientists, utility managers, and information technology infrastructure managers. Military personnel from Marine Corps Installations East, MCB Camp Lejeune, and NAVFAC Mid-Atlantic attended. The design team examined all aspects of the proposed action. They looked at the best location for facilities, roads, and utilities in configurations that would avoid impacts to sensitive environmental features, such as wetlands, floodplains, and cultural resources.

The Marine Corps has determined that the following factors are important in determining the appropriate scope of alternatives for meeting the needs associated with the proposed action:

1. Locate facilities for incoming personnel with their existing parent command facilities;
2. Locate facilities on or near previously or recently disturbed land to the fullest extent possible;
3. Locate facilities in areas that do not conflict with the proposed facilities associated with the permanent beddown;
4. Avoid sensitive environmental resources (e.g. sensitive species, habitat, and cultural resources); and
5. Minimize conflicts with adjacent facilities and missions.

By applying the factors, five out of the seven projects (see section 2.4) could be accommodated adjacent to their parent units on or near previously disturbed or developed sites. Parking areas would also need to be established and would occur in the vicinity of these facilities on previously disturbed sites to the greatest extent possible. Vegetation clearing would be required for each facility, which is evaluated in Chapters 3 and 4 of this EA.

## **2.2 Alternatives Considered but not Carried Forward for Further Analysis**

In order to meet the purpose of the Grow the Force initiative, increasing the Marine Corps end strength must be expedited while not compromising the current Marine Corps missions. Existing force structure and organization needs to be maintained in order to not further complicate, retard, or jeopardize the Marine Corps mission. The proposed action accomplishes this by focusing the immediate manpower increases to existing units by providing Marines possessing the appropriate skill sets. These units are already established at MCB Camp Lejeune; consequently, alternative beddown locations at other installations are not feasible because they would not meet the overall purpose of the Grow the Force initiative of establishing increased manpower within existing Marine units in the immediate timeframe.

Alternative siting locations for the projects were considered, but locating them in either existing facilities or in temporary facilities adjacent to their parent units allows for command, control, and cost efficiencies. Renovation of existing facilities was dismissed from further analysis because existing facilities lack adequate space to accommodate the proposed increase in personnel under the Marine Corps Grow the Force initiative.

## **2.3 No Action Alternative**

Under the No Action Alternative, the mandated increase in Marine Corps end force strength at MCB Camp Lejeune would occur, but no temporary facilities would be constructed and training requirements of the increased personnel would not be met. The No Action Alternative does not support the operational needs of the Marine Corps because current facilities cannot absorb the increase in numbers of incoming personnel and increased personnel must obtain the necessary training. Therefore, the No Action Alternative would result in an adverse impact on mission readiness and implementation of the Grow the Force initiative. For this reason, it is not considered a reasonable solution for satisfying the purpose and need as stated in Section 1.3. However, 40 Code of Federal Regulations 1502.14 requires analysis of the No Action Alternative and the No Action Alternative provides a benchmark, enabling decision-makers to compare the magnitude of potential impacts between the No Action and proposed action. Therefore, the No Action Alternative is evaluated further in subsequent sections of this EA.

## **2.4 Detailed Description of the Proposed Action**

The immediate proposed increases in Marine forces would be accommodated at various Marine Corps installations in either existing or temporary facilities since there is insufficient time to complete all required activities associated with Military Construction projects during this timeframe on a permanent basis. As described in Section 1.4.2, MCB Camp Lejeune determined that several projects were categorically excluded and therefore did not require analysis as part of the proposed action in this EA.

The proposed action at MCB Camp Lejeune that is analyzed in this EA would construct temporary facilities primarily for existing units from FY08 through FY10. Table 2.4-1 provides the units and proposed construction year for the temporary facilities analyzed in this EA.

**Table 2.4-1 Temporary Facilities**

Unit Name	Construction Year
4 <sup>th</sup> Reconnaissance Platoon (Reconnaissance Company A & B, 2 <sup>d</sup> Reconnaissance Battalion) <sup>1</sup>	FY08
Company E, 2 <sup>d</sup> Amphibious Assault Battalion <sup>1</sup>	FY10
Consolidated Base Military Police (MP)/Military Headquarters Group MP Logistics Command Element <sup>2</sup>	FY08
Counter-Battery Radar Platoon, 10 <sup>th</sup> Marine Regiment <sup>1</sup>	FY09
Battery F, 2 <sup>d</sup> Artillery Battalion, 12 <sup>th</sup> Marine Regiment <sup>1</sup>	FY09
Battery G, 2 <sup>d</sup> Artillery Battalion, 12 <sup>th</sup> Marine Regiment <sup>1</sup>	FY10
Civil Affairs <sup>1</sup>	FY08

<sup>1</sup>Augments existing parent unit(s) at MCB Camp Lejeune.

<sup>2</sup>Establishes new unit(s) at MCB Camp Lejeune but existing units have similar mission.

Source: USMC, 2008b.

The proposed action would locate the majority of the proposed temporary facilities on or near previously disturbed sites or on paved areas adjacent to their parent commands. The 4<sup>th</sup> Reconnaissance Platoon; Battery F, 2<sup>d</sup> Artillery Battalion; Battery G, 2<sup>d</sup> Artillery Battalion; Counter-Battery Radar Platoon; Company E, 2<sup>d</sup> Amphibious Assault Battalion; and Civil Affairs would require facility construction and/or infrastructure upgrades adjacent to their parent units. The Consolidated Base Military Police (MP)/Military Headquarters Group MP, Logistics Command Element beddown would require new facilities since the existing Base MP kennels cannot be expanded.

In addition to facility establishment, the following elements may also be constructed and are analyzed in this EA (where applicable):

- Clearing, grading, leveling, and placement of approved soil stabilization material;
- Chain link fencing and lighting for security/safety;
- PEBs that are temporary and typically used for storage but may also be used for classrooms;
- Storage areas, that may include open areas, cargo containers, sunshades and/or temporary shelters;
- Portable armories that are pre-manufactured for the securing of weapons (no live ammunition would be stored at these armories);
- Utility connections for water, sewer, electric, natural gas, propane, phone, and Intrusion Device Security Systems;
- Hazardous material storage areas for day-to-day maintenance of equipment; and
- Hazardous waste storage in portable containment containers and services provided by MCB Camp Lejeune.

Figure 2-1 provides the proposed site locations at MCB Camp Lejeune for the temporary facilities. Table 2.4-2 demonstrates the types of facilities that would most likely be constructed as well as the approximate size of the proposed project area and estimated maximum area needed for facility construction and/or

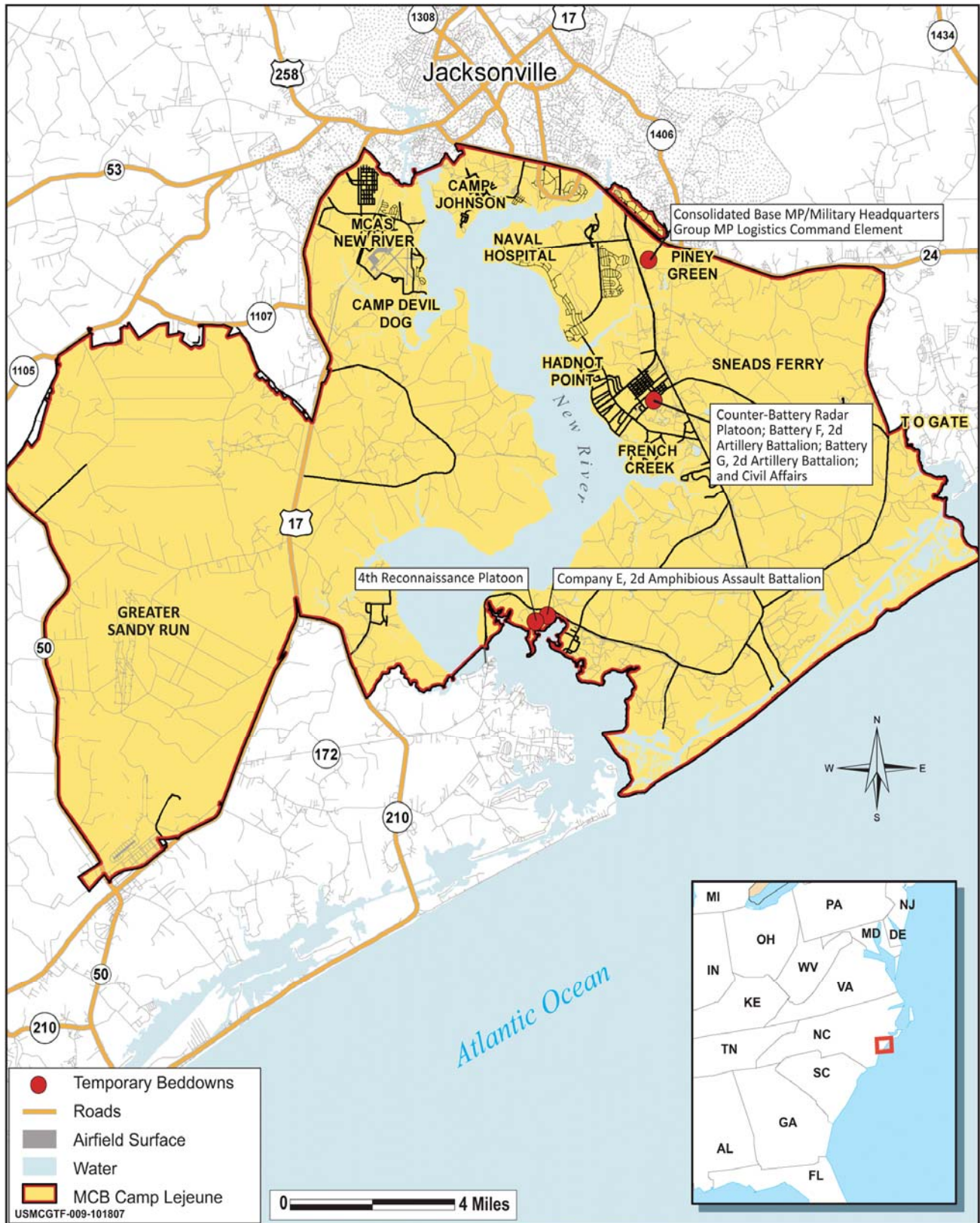


Figure 2-1 Temporary Facility Locations

**Table 2.4-2 Proposed Temporary Facility Construction**

Project/Unit Name	LE Number	Typical Facilities	Proposed Project Area	Maximum Area Needed for Facilities
<b>4<sup>th</sup> Reconnaissance Platoon</b>	LE15-P1229	PEB Supply warehouse Storage area Portable armory Parking	8 ha (20 ac)	2.4 ha (6 ac)
<b>Company E, 2<sup>d</sup> Amphibious Assault Battalion</b>	LE18-P1229	Portable trailers for administration and classrooms PEB Supply warehouse Portable armories HAZMAT storage locker Parking	15 ha (36 ac)	1.8 ha (4.4 ac)
<b>Consolidated Base MP/Military Headquarters Group MP Logistics Command Element</b>	LE03-P1229	Portable trailers for administration and classrooms PEB Supply warehouse PEB Storage Portable armories	29 ha (72 ac)	12 ha (30 ac)
	LE26-P1229	Dog kennels Dog runs/training areas Dog cemetery Access road/Parking		
<b>Counter-Battery Radar Platoon<sup>1</sup></b>	LE06-P1229	Portable trailers for administration and classrooms PEB Supply warehouse PEB Motor T/Communication Portable armories HAZMAT storage locker Parking	20 ha (49 ac)	5 ha (12 ac)
<b>Battery F, 2<sup>d</sup> Artillery Battalion<sup>1</sup></b>	LE07-P1229	Portable trailers for administration PEB Supply warehouse PEB Ordnance maintenance building Portable armories HAZMAT storage locker	20 ha (49 ac)	5 ha (12 ac)
<b>Battery G, 2<sup>d</sup> Artillery Battalion<sup>1</sup></b>	LE10-P1229	Portable trailers for administration PEB Supply warehouse PEB Ordnance maintenance building PEB Survey/metro facility Portable armories HAZMAT storage locker	20 ha (49 ac)	5 ha (12 ac)
<b>Civil Affairs<sup>1</sup></b>	LE12-P1229	PEB Supply warehouse PEB Communication	20 ha (49 ac)	5 ha (12 ac)
<b>TOTALS</b>			<b>72 ha (177 ac)</b>	<b>21 ha (52 ac)</b>

Notes:

<sup>1</sup>Proposed facilities for the Counter-Battery Radar Platoon; Battery F, 2<sup>d</sup> Artillery Battalion; Battery G, 2<sup>d</sup> Artillery Battalion; and Civil Affairs share the same 20 ha (49 ac) proposed project area. Vegetation clearing is analyzed in Chapters 3 and 4 of this EA.

HAZMAT = Hazardous materials; ac = acres; ha = hectares.

location. The actual size of facilities is still in conceptual design stage and is subject to change but would not exceed the maximum estimated area of disturbance as shown in Table 2.4-2.

Project area boundaries were identified for each of the proposed projects to show the geographical area of consideration. Within the proposed project areas, probable locations for facility types were identified based on conceptual designs (these areas are designated as “possible sites” on the figures). The actual locations within each project area for the temporary facilities are subject to change as the design process continues, but the overall proposed project area would not change. The size of the probable locations for the temporary facilities includes an additional 25 percent buffer to allow for minor adjustments in facility layout. Potential constraints to development such as wetlands were also identified within each proposed project area in order to identify areas of buildable land within the proposed project areas. Sensitive resources would be avoided to the maximum extent practicable.

Four project areas encompassing approximately 72 hectares (ha) (177 acres [ac]) are considered in this EA to support the construction of temporary facilities with a total footprint of approximately 21 ha (52 ac). As previously stated, vegetation clearing would be required for each proposed project area which is evaluated in Chapters 3 and 4 of this EA.

#### **2.4.1 4<sup>th</sup> Reconnaissance Platoon**

The 4<sup>th</sup> Reconnaissance Platoon’s parent unit does not currently have adequate facilities to support the proposed increase in personnel and equipment. The proposed action would include the construction of a site adjacent to building A71, in the Amphibious Area of Courthouse Bay.

The proposed project area for the 4<sup>th</sup> Reconnaissance Platoon is located just south and west of Sneads Ferry Road (North Carolina Route 172 [NC 172]) and Courthouse Road (Figure 2-2). The site specific design would place these facilities somewhere within the 8 ha (20 ac) area depicted in Figure 2-2. As shown in Table 2.4-2, the estimated maximum area required for the facilities is approximately 2.4 ha (6 ac). Figure 2-2 depicts a conceptual layout of the proposed facilities as well as known constraints that could limit areas of development within the proposed project area. All wetlands within the proposed project area would be avoided.

Within the proposed project area, MCB Camp Lejeune would construct facilities to support supply and operational functions. These facilities would likely include a pre-engineered supply warehouse, portable armory for weapons storage, and parking. Site work would include clearing, grading, asphalt paving, stormwater management, security lighting, and security fencing. The necessary utility connections would include electricity, water, sewer, and telecommunication capabilities.



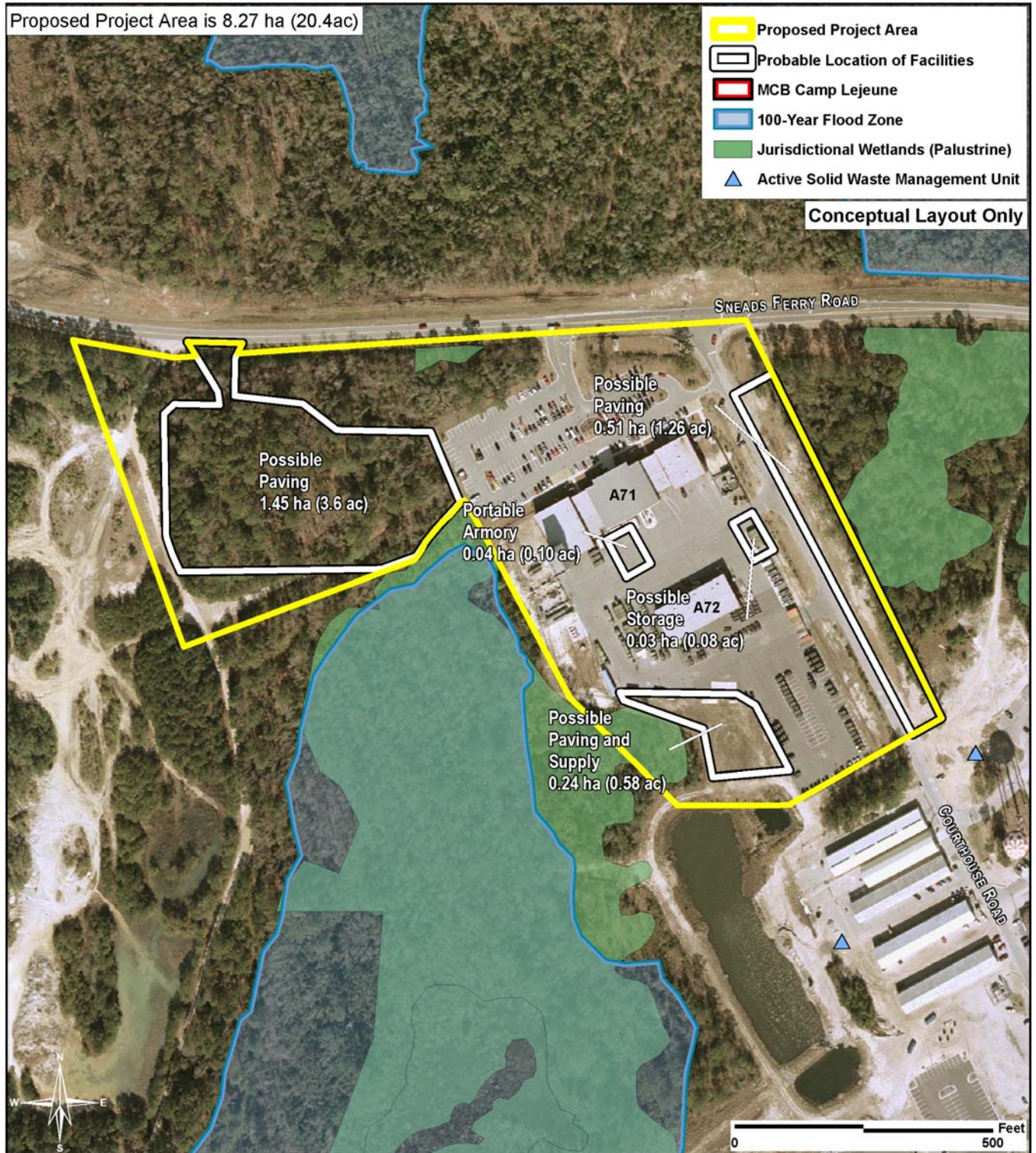


Figure 2-2 Proposed Project Area for the 4<sup>th</sup> Reconnaissance Platoon Facilities

#### **2.4.2 Company E, 2<sup>d</sup> Amphibious Assault Battalion**

The proposed project area (see Figure 2-3) for the Company E, 2<sup>d</sup> Amphibious Assault Battalion is located adjacent to and east of the proposed project area for the 4<sup>th</sup> Reconnaissance Platoon on the east side of Courthouse Road and south of Sneads Ferry Road (NC 172). The site specific design would place these facilities somewhere within the 15 ha (36 ac) area depicted in Figure 2-3. As shown in Table 2.4-2, the estimated maximum area required for the facilities is approximately 1.8 ha (4.4 ac). Figure 2-3 depicts a conceptual layout of the proposed facilities as well as known constraints that could limit areas of development within the proposed project area. All wetlands within the proposed project area would be avoided to the maximum extent practicable.

Within the proposed project area, MCB Camp Lejeune would construct facilities to support administrative, supply and operational functions. These facilities would likely include portable trailers for administrative and classroom functions, a pre-engineered supply warehouse, hazardous materials storage units, and portable armories in the vicinity of Building A73. Site work would include clearing, grading, asphalt paving, stormwater management, security lighting and security fencing as well as the necessary utility connections installed for electricity, water, sewer, and telecommunication capabilities.

#### **2.4.3 Consolidated Base Military Police/Military Headquarters Group Military Police Logistics Command Element**

The proposed Consolidated Base MP/Military Headquarters Group MP Logistics Command Element facilities includes two projects that would be co-located within the same proposed project area; the new Military Headquarters Group MPs and the MCB Camp Lejeune MP units (Base MPs) displaced by planned construction at their existing facilities.

Various alternative sites were considered for both the Base MP dog units and the Military Headquarters Group MP dog units associated with the proposed action. The existing Base MP kennels cannot be expanded because these facilities are being demolished under other actions at the Base (i.e., Wallace Creek Regimental Area expansion); therefore, a new consolidated site needed to be identified. Trained dogs have unique needs and three main criteria were considered when identifying alternative siting locations: 1) the site needed to be remotely located where movement and distractions are minimized, 2) the site needed to be located in the immediate vicinity to veterinary care and, 3) in cases when the dogs are needed, response time to the Main Gate and Piney Green Gate needed to be quick. Given these parameters, the Marine Corps identified an isolated area equidistant between the Main Gate and Piney Green Gate, yet close to the veterinarian. One additional alternative considered was to split the dogs into two groups based on their skills. Some of the dogs are used for security and protection (Base MPs), while others are used in combat situations (Military Headquarters Group MPs). This alternative was rejected, however, because all dogs need to be located close to veterinarian services, and when adding the other two requirements, only this location was deemed acceptable.

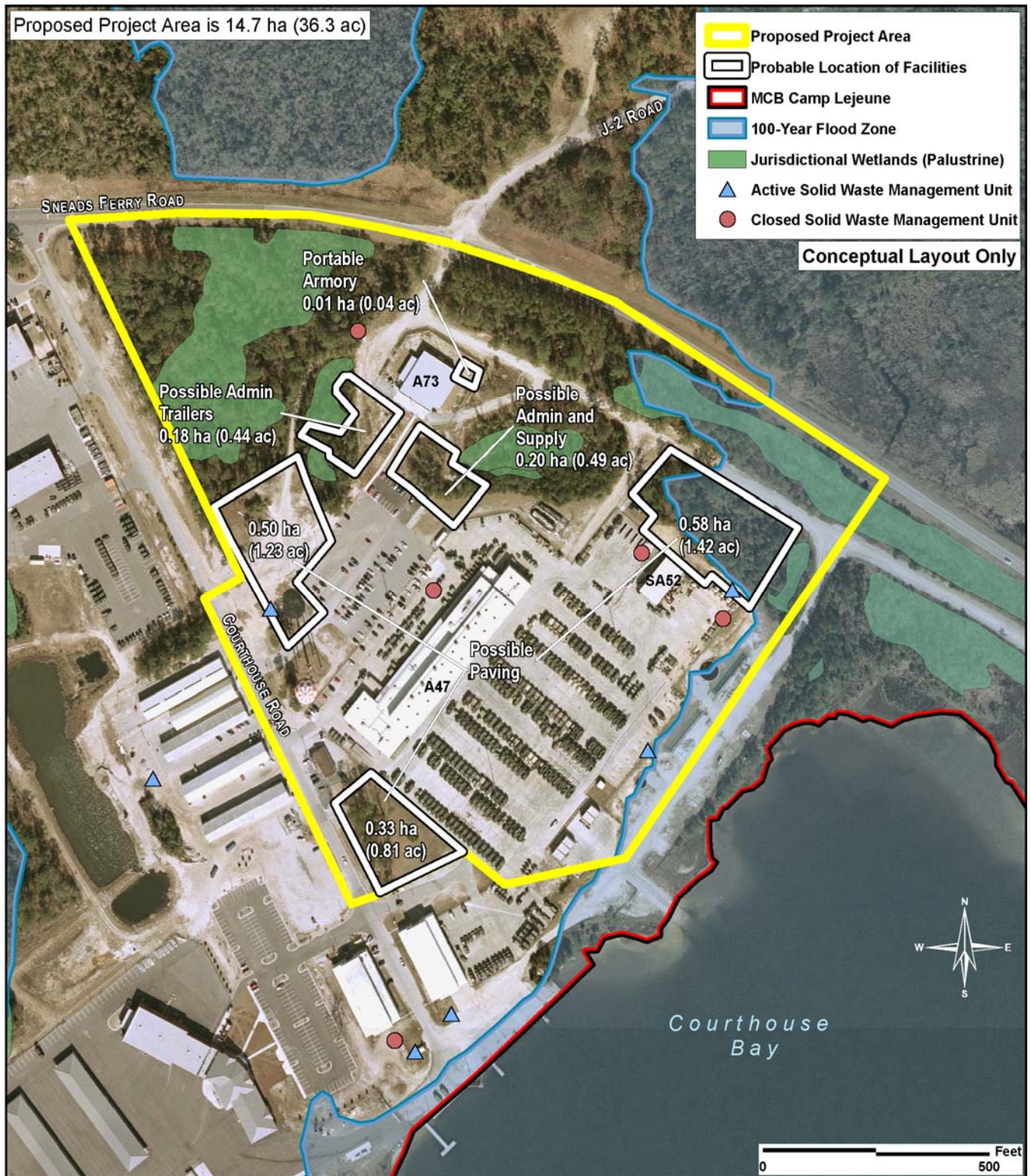


Figure 2-3 Proposed Project Area for the Company E, 2<sup>nd</sup> Amphibious Assault Battalion Facilities

The consolidated project would be relocated in an isolated area off Old Sawmill Road as shown in Figure 2-4. The site specific design would place these facilities somewhere within the approximately 29 ha (71 ac) area depicted on Figure 2-4. As shown in Table 2.4-2, the estimated maximum area required for the facilities is approximately 12 ha (30 ac), although not all of this land would be cleared, since some of the trees would be incorporated into the overall site design. Figure 2-4 depicts a conceptual area of potential disturbance as well as known constraints that could limit areas of development within the proposed project area. The proposed project area is located within areas designated by MCB Camp Lejeune as future habitat for red-cockaded woodpeckers (see Section 3.5.6). There are several Installation Restoration sites with associated Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) land use controls within the proposed project boundaries. All wetlands within the project area would be avoided.

The Military Headquarters Group MP and Base MP projects would include facilities such as dog kennels and dog runs, portable trailers for administrative functions, portable armories, and PEBs for storage and supplies. A dog cemetery would also be constructed within the proposed project area. Construction would also include an access road and parking areas. Site work would include clearing, grading, asphalt paving, stormwater management, security lighting, and security fencing. The necessary utility connections would include electricity, water, sewer, and telecommunication capabilities.

#### **2.4.4 Counter-Battery Radar Platoon**

The augmentation of the Counter-Battery Radar Platoon would require adequate facilities to support the proposed increase in personnel and equipment. The proposed project area for the Counter-Battery Radar Platoon facilities is located near the Hadnot Point area of the Base, west of Sneads Ferry Road (NC 172). The proposed project area is transected by Louis Road, Franklin Street, and O Street. The site specific design would place these facilities somewhere within the 20 ha (49 ac) area depicted in Figure 2-5. As shown in Table 2.4-2, the estimated maximum area required for the facilities is approximately 5 ha (12 ac). Figure 2-5 depicts a conceptual layout of the proposed facilities as well as known constraints that could limit areas of development within the proposed project area. The proposed project area contains wetlands and overlaps several Installation Restoration sites. All wetlands within the proposed project area would be avoided.

The temporary facilities would support administrative, operations, and supply functions. These facilities would likely include portable trailers for administrative functions, a pre-engineered supply warehouse, Motor T/Communication facility, portable armories, hazardous materials storage locker and parking areas. Site work would include clearing, grading, asphalt paving, stormwater management, security lighting and security fencing. The necessary utility connections would include electricity, water, sewer, and telecommunication capabilities.

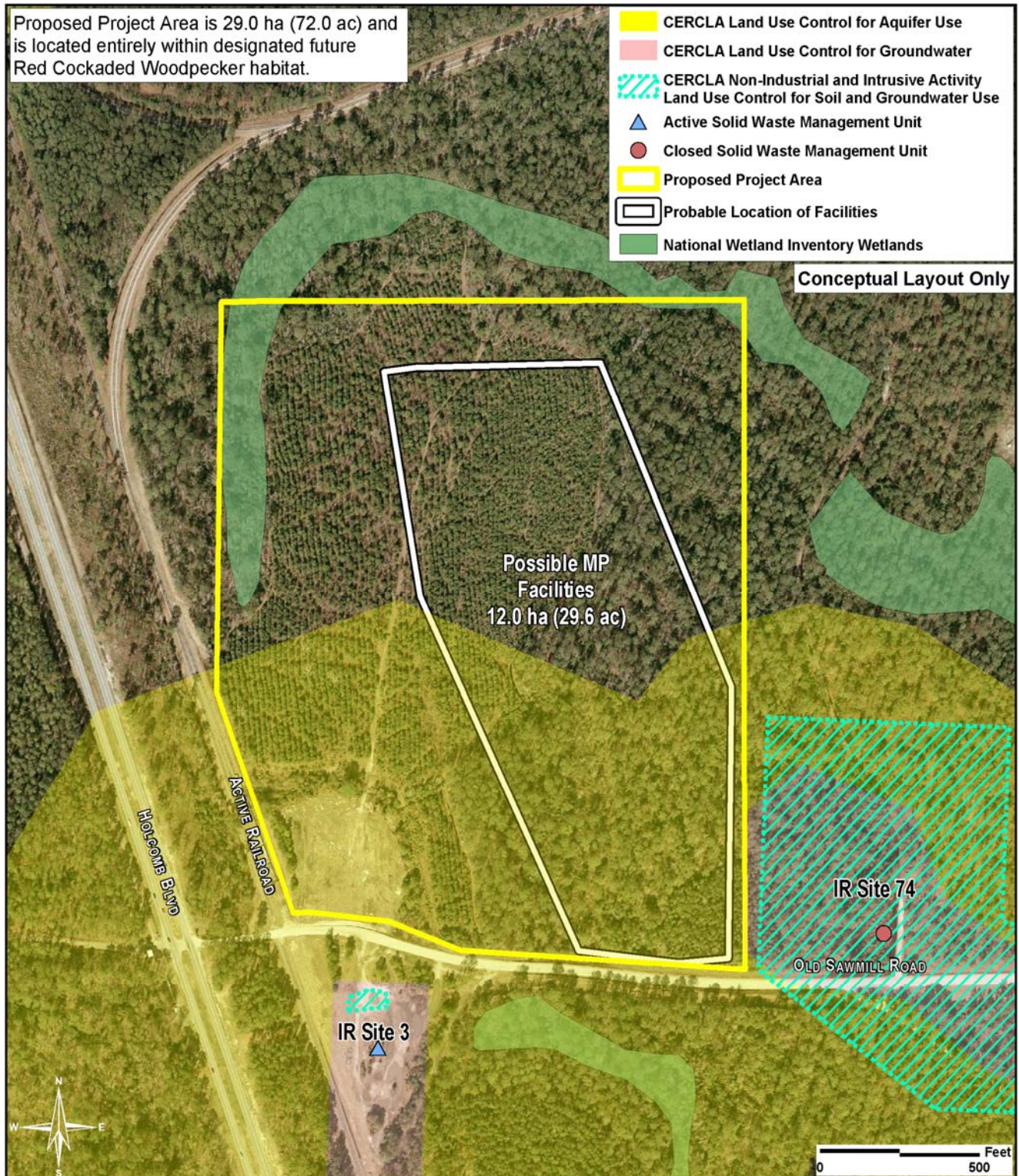
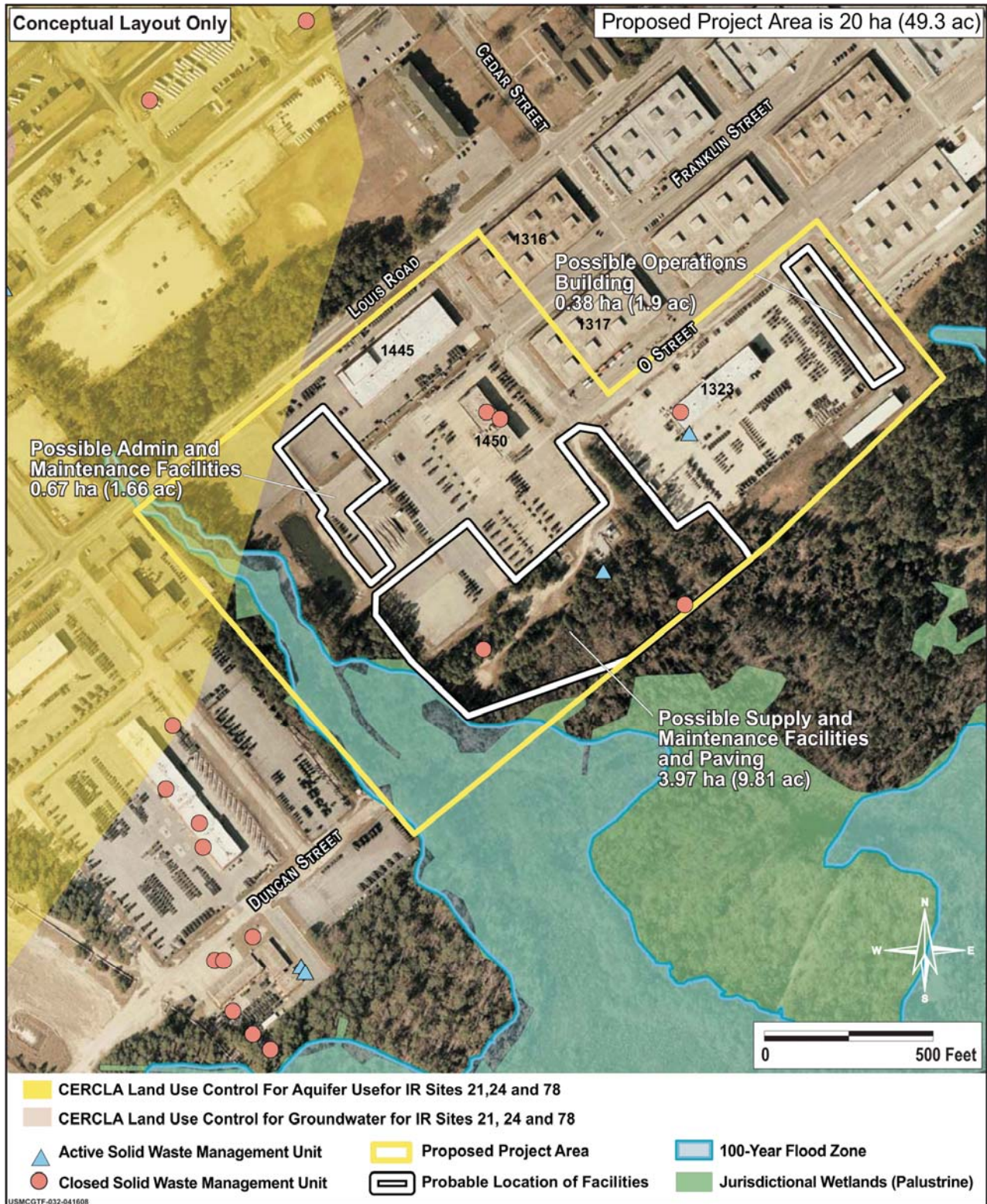


Figure 2-4 Proposed Project Area for the Consolidated Base MP/Military Headquarters Group MP Logistics Command Element Facilities



**Figure 2-5 Proposed Project Area for the Counter-Battery Radar Platoon; Battery F, 2<sup>d</sup> Artillery Battalion; Battery G, 2<sup>d</sup> Artillery Battalion; and Civil Affairs Facilities**

#### **2.4.5 Battery F, 2<sup>d</sup> Artillery Battalion**

The proposed project area for the Battery F, 2<sup>d</sup> Artillery Battalion facilities is the same geographical area as described for the Counter-Battery Radar Platoon (see section 2.4.4), which is approximately 20 ha (49 ac). The proposed project area is transected by Louis Road, Franklin Street, and O Street. As shown in Table 2.4-2, the estimated maximum area required for the facilities is approximately 5 ha (12 ac). Figure 2-5 depicts a conceptual layout of the proposed facilities as well as known constraints that could limit areas of development within the proposed project area. The proposed project area contains wetlands and overlaps several Installation Restoration sites. All wetlands within the proposed project area would be avoided.

The temporary facilities would support administrative, operations, maintenance, and supply functions. These facilities would likely include portable trailers for administrative space, a pre-engineered supply warehouse, and a joint maintenance, communication/electric facility. Probable facilities also include portable armories and a hazardous materials storage locker. Site work would include clearing, grading, asphalt paving, stormwater management, security lighting and security fencing. The necessary utility connections would include electricity, water, sewer, and telecommunication capabilities.

#### **2.4.6 Battery G, 2<sup>d</sup> Artillery Battalion**

The proposed project area for the Battery G, 2<sup>d</sup> Artillery Battalion facilities is the same geographical area as described for the Counter-Battery Radar Platoon (see section 2.4.4) and the Battery F, 2<sup>d</sup> Artillery Battalion (see section 2.4.5), which is approximately 20 ha (49 ac). The proposed project area is transected by Louis Road, Franklin Street, and O Street. As shown in Table 2.4-2, the estimated maximum area required for the facilities is approximately 5 ha (12 ac). Figure 2-5 depicts a conceptual layout of the proposed facilities as well as known constraints that could limit areas of development within the proposed project area. The proposed project area contains wetlands and overlaps several Installation Restoration sites. All wetlands within the proposed project area would be avoided.

The temporary facilities would support administrative, operations, maintenance, and supply functions. These facilities would likely include portable trailers for administrative space, a pre-engineered supply warehouse, a joint maintenance, communication/electric facility and Survey/Metro facilities. Probable facilities also include portable armories and a hazardous materials storage locker. Site work would include clearing, grading, asphalt paving, stormwater management, security lighting and security fencing. The necessary utility connections would include electricity, water, sewer, and telecommunication capabilities.

#### **2.4.7 Civil Affairs**

The proposed project area for the Civil Affairs facilities is the same geographical area as described for the Counter-Battery Radar Platoon (see section 2.4.4), the Battery F, 2<sup>d</sup> Artillery Battalion (see section 2.4.5), and the Battery G, 2<sup>d</sup> Artillery Battalion (see section 2.4.6) which is approximately 20 ha (49 ac). The

proposed project area is transected by Louis Road, Franklin Street, and O Street. As shown in Table 2.4-2, the estimated maximum area required for the facilities is approximately 5 ha (12 ac). Figure 2-5 depicts a conceptual layout of the proposed facilities as well as known constraints that could limit areas of development within the proposed project area. The proposed project area contains wetlands and overlaps several Installation Restoration sites. All wetlands within the proposed project area would be avoided.

The temporary facilities would support administrative and supply functions. These facilities would likely include PEBs for supply and communication functions. Minimal site clearing would be required since the facilities would likely be located on previously disturbed areas. The necessary utility connections would include electricity, water, sewer, and telecommunication capabilities.

## **2.5 Environmental Protection**

The design, materials, and construction used for the proposed temporary facilities would integrate environmental goals that incorporate sustainability principles to the greatest extent possible and may include:

- Preserving and restoring site ecosystem and biodiversity;
- Avoiding site degradation and erosion;
- Minimizing offsite environmental impacts;
- Using minimum amounts of energy, water, and using materials feasible to meet design intent;
- Selecting energy and water efficient equipment and strategies;
- Using environmentally preferable products and decreasing toxicity levels of materials used;
- Using renewable energy and material resources;
- Optimizing operational performance in order to ensure energy efficient equipment operates as intended;
- Managing construction sites and storage of materials to ensure no negative impact on the environmental quality of the facilities; and
- Reducing construction waste through reuse and recycling.

Prior to the start of any construction, a preconstruction meeting would be held to discuss the development of an Environmental Protection Plan. The contractor would be required to produce the plan that includes a description of the environmental training program for construction workers performing work at the site locations, and would address procedures to protect coastal zones, sensitive species and habitat, wetlands, floodplains, surface water, and installation restoration project areas. The Environmental Protection Plan would also address permitting, monitoring, and quality control procedures.



Some specific environmental protection features would be included in the facility designs for proper fuel handling, dispensing, and storage systems to minimize the risk or impact of fuel spills. All hazardous materials would be stored in appropriate, ventilated, and spill-protected structures located on asphalt. Design characteristics of sanitary sewer collection, pre-treatment, and drainage systems would ensure proper disposition of effluent and would also maintain a safe water supply. Consideration would also be given to air quality to minimize the impact of volatile organic compounds, emissions from fossil fuel burning equipment, fugitive dust generation, and other airborne pollutants or irritants.

Environmentally preferable products would also be considered for: raw materials acquisition, production, manufacturing, packaging, distribution, reuse, operation, maintenance, and disposal of products. Several materials would be prohibited, such as products containing asbestos, urea formaldehyde, polychlorinated biphenyls, chlorinated fluorocarbons, and lead (above certain levels).

Furthermore, numerous measures would be prescribed for the contractor for parking area and road construction to protect natural resources:

- Confining demolition and construction activities to work area limits (re-established by MCB Camp Lejeune);
- Removing debris, rubbish, and other waste resulting from demolition and construction operations;
- Preventing oily or hazardous substances from entering the ground, drainage area, or surface water features;
- Preventing equipment from crossing active streams;
- Identifying land resources to be preserved within work area;
- Conducting earthwork to minimize the duration of exposure of unprotected soils;
- Constructing/installing temporary and permanent erosion and sedimentation control features as required;
- Tagging each tree and plant that is scheduled to remain;
- Limiting dust and dirt rising and scattering in the air by use of mulch, water sprinkling, temporary enclosures, and other methods;
- Storing volatile liquids in closed containers; and
- Maintaining equipment to reduce gaseous pollutant emissions.

## **2.6 Evaluation of Alternatives**

Table 2.6-1 summarizes the beneficial and adverse impacts of the two alternatives considered, the No Action Alternative and the proposed action. The proposed action would accommodate immediate increases in Marine forces at MCB Camp Lejeune, North Carolina in a combination of existing facilities or newly constructed facilities until the decision to construct permanent facilities for these Marines is made.

Under the No Action Alternative, no temporary facilities would be constructed associated with the proposed immediate increase in personnel, and existing facility conditions at MCB Camp Lejeune would remain the same.

**Table 2.6-1 Evaluation of Alternatives**

Impact	No Action Alternative	Proposed Action
Land Use and Coastal Zone Management	No construction would occur and land use patterns would remain the same; current land use within project area is consistent with policies designed to protect the coastal zone.	Land use would change from pine and mixed forest to developed areas; change would be consistent with the designated land use classification; change to developed areas would match nearby developed land use for each proposed project area.  There would be no impact to North Carolina’s coastal zone.
Air Quality	Levels of air emissions currently generated and existing air quality would remain the same except from minor increase in vehicle use due to influx of personnel; the region is expected to remain in attainment for all criteria pollutants.	Short-term construction impacts resulting in fugitive dust emissions. The region is expected to remain in attainment for all criteria pollutants.
Noise	Existing noise conditions on-base would remain relatively unchanged.	Short-term construction related noise impacts; noise generation would be similar to noise generated by other construction projects on-base.
Cultural Resources	Historic and archaeological resources would not be affected because there would be no facility development or ground disturbing activities.	There are no cultural resources located within the proposed project areas; therefore cultural resources would not be affected by the proposed action.
Natural Resources	No construction of facilities would take place; natural resources would not be impacted within any of the proposed project areas.	Geology would not be affected. Minor impacts to topography, soils, and water resources that would be minimized due in part to best management practices (BMPs) and erosion and sedimentation control plans.  Approximately 4 ha (10 ac) of floodplains occur in the proposed project areas. There would be no impact to an adjacent primary nursery area.  There are approximately 5 ha (13 ac) of wetlands located within the proposed project areas. All facility layouts would be designed to avoid impacts to wetlands and waters of the United States. Therefore, wetlands and water resources would not be affected.  Forest removal could range from approximately 8 ha (20 ac) to 15 ha (38 ac)

Impact	No Action Alternative	Proposed Action
		<p>depending on the final design layout of the proposed facilities. Adverse impacts on wildlife are not expected to affect the stability of wildlife populations on-base.</p> <p>No adverse affects to threatened or endangered species are anticipated. No adverse impacts to migratory birds or populations.</p> <p>There are no natural heritage areas located within any of the proposed locations for the temporary facilities.</p> <p>Loss of approximately 4 ha (10 ac) of habitat designated by MCB Camp Lejeune as future red-cockaded woodpecker foraging habitat is not likely to adversely affect the species and is not expected to jeopardize the Base’s ability to maintain sufficient foraging habitat or to meet the recovery goal of 173 active red-cockaded woodpecker clusters.</p>
Hazardous Materials and Waste	Existing conditions in hazardous materials and waste management and at contaminated sites would not change.	Installation Restoration sites would be avoided to the extent possible. No adverse impacts from hazardous materials, waste, or existing contaminant sites due to the proper management of materials in accordance with all applicable laws and regulations.

**Note: A summary of Cumulative Effects is provided in Chapter 5 of this EA.**

### **3.0 AFFECTED ENVIRONMENT**

This chapter provides a description of the environment that would be affected by the proposed action, as required by Council on Environmental Quality regulations for implementing NEPA (40 Code of Federal Regulations Parts 1500-1508). The description focuses on those features of the environment that would potentially be affected by the proposed action at MCB Camp Lejeune, North Carolina. The proposed action would accommodate immediate increases in Marine forces at MCB Camp Lejeune, North Carolina in a combination of existing facilities or newly constructed facilities until the decision to construct permanent facilities for these Marines is made. Use of existing and newly constructed facilities would expedite the placement and accommodation of incoming Marines at MCB Camp Lejeune in support of the Marine Corps Grow the Force initiative and satisfy the immediate requirements to place incoming forces per the Presidential proposal authorized by Congress.

As previously mentioned in Chapter 1, a separate EIS will be prepared to address the affected environment and potential environmental impacts of the proposed *permanent assignment* of Marines at MCB Camp Lejeune and other Marine Corps installations. Since this EA focuses on the proposed *construction activities* associated with the temporary increase of Marines at MCB Camp Lejeune, several resources are discussed only in Section 5, Cumulative Effects including: Socioeconomics and Environmental Justice; Community Facilities and Services; Traffic and Transportation; and Utilities and Infrastructure because the proposed construction activities would not affect or would have negligible impacts on these resources (see section 1.4.2).

#### **3.1 Land Use and Coastal Zone Management**

Land use and coastal zone management are included in this EA because construction of the proposed temporary facilities would result in some land use changes at MCB Camp Lejeune and the Base is located within one of the state's 20 coastal counties.

##### **3.1.1 Land Use**

Land use at MCB Camp Lejeune is predominantly for operational and training purposes. Most of the Base is devoted to land and water training ranges, impact areas, and maneuver and training areas. This reflects the Base's primary mission, which is to maintain combat ready units for expeditionary deployment.

Undeveloped forested areas on MCB Camp Lejeune, although primarily classified as operational and training, are also managed for natural resources values and commodity production. Activities range from timber production and management of habitats for native and migratory wildlife, to threatened and endangered species management. Recreational uses such as hunting are a key land use of undeveloped, forested areas aboard MCB Camp Lejeune.

The total area associated with the proposed project areas for all of the temporary facilities is approximately 72 ha (177 ac) but the total maximum area required for facility layout is approximately 21 ha (52 ac). Most of the temporary buildings would be located on or near previously or recently disturbed land and co-located with their parent command; however, the proposed location for the Consolidated Base MP/Military Headquarters Group MP Logistics Command Element is undeveloped and generally characterized by scrubland and forestland. Figure 3-1 shows the various land use designations at and in the vicinities of the proposed project areas. Land use descriptions for each proposed project component are provided in the following discussion.

*Counter-Battery Radar Platoon; Battery F, 2<sup>d</sup> Artillery Battalion; Battery G, 2<sup>d</sup> Artillery Battalion; and Civil Affairs* - The proposed project area for the aforementioned co-located temporary facilities is primarily designated as maintenance and production facilities, with smaller areas designated as operational and training facilities, and utilities and ground improvements.

*4<sup>th</sup> Reconnaissance Platoon* - The proposed project area for the 4<sup>th</sup> Reconnaissance Platoon facilities is designated as maintenance and production facilities and undeveloped land (available for development but pending designation).

*Company E, 2<sup>d</sup> Amphibious Assault Battalion* - The proposed project area for the Company E, 2<sup>d</sup> Amphibious Assault Battalion temporary facilities is primarily designated as maintenance and production facilities, with smaller areas designated as supply facilities, and utilities and ground improvements.

*Consolidated Base MP/Military Headquarters Group MP Logistics Command Element* - The proposed project area for the consolidated kennel facilities is located to the north of Old Sawmill Road and east of Holcomb Boulevard in an area categorized as operational and training facilities. The proposed project area predominantly consists of undeveloped woodlands.

### **3.1.2 Coastal Zone Management**

The Coastal Zone Management Act (CZMA) of 1972 (16 United States Code §1451, et seq., as amended) was enacted because there is a “natural interest in the effective management, beneficial use, protection, and development of the coastal zone” (CZMA §1451). CZMA policy is implemented through state coastal zone management programs.

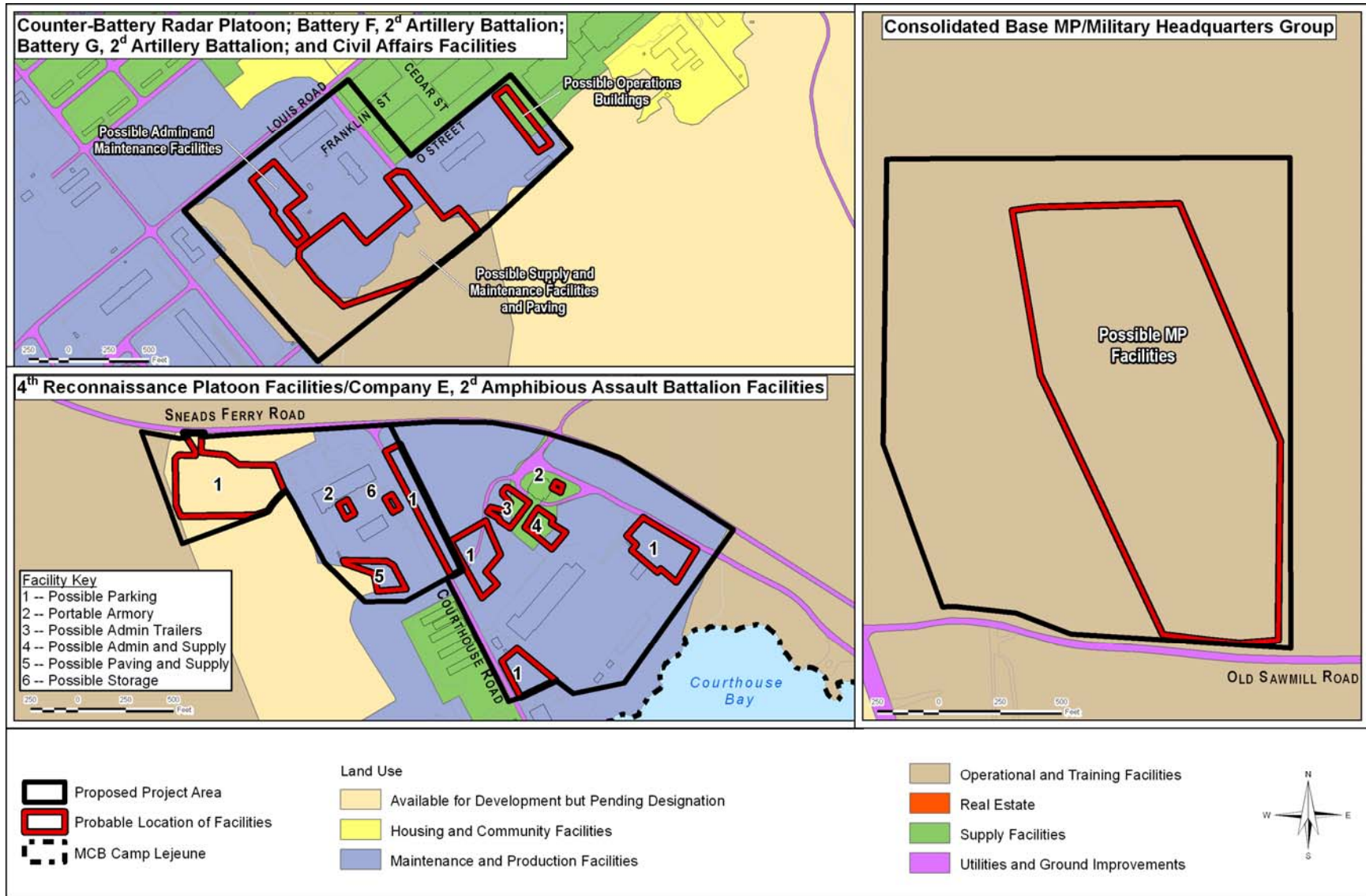


Figure 3-1 Land Use

The foundation of a state's coastal management program is a list of enforceable policies. An enforceable policy is a legally binding state policy codified in constitutional provisions, laws, regulations, land use plans, ordinances, or judicial or administrative decisions. The enforceable policies allow the state to exert control over private and public land and water uses and natural resources in the coastal zone. These policies have to be incorporated into the state's coastal zone management programs.

Federal lands are excluded from the jurisdiction of these state programs. However, activities on federal lands are subject to CZMA federal consistency requirements if the federal activity would affect any land or water or natural resource of the coastal zone, including reasonably foreseeable effects.

As a federal agency, MCB Camp Lejeune is required to determine whether its proposed activities would affect the coastal zone. This determination is made in the form of a Negative Determination or as a federal Coastal Consistency Determination. A Negative Determination (along with the basis for the determination) is submitted to North Carolina's program when MCB Camp Lejeune determines that there would be no effects on any coastal uses or resources. According to 15 Code of Federal Regulations 930.35, there are three instances when a Negative Determination is to be submitted. They are when the proposed activity:

- is identified by the state on its list, or through case-by-case monitoring of unlisted activities;
- is the same as, or is similar to, activities for which federal Coastal Consistency Determinations have been prepared in the past; or
- has been thoroughly assessed for consistency and initial findings on the coastal effect of the activity have concluded there are no foreseeable effects.

For a proposed activity that would affect coastal resources, a federal Coastal Consistency Determination is required. A federal Coastal Consistency Determination is a determination supported by findings that a proposed activity in or affecting the resources of a coastal zone complies with, and would be conducted in a manner that is consistent to the maximum extent practicable with, the state's coastal zone enforceable policies unless "...full consistency is prohibited by existing law applicable to the federal government." Thus, federal actions occurring in a state's coastal zone need to be consistent with that program, specifically the program's enforceable policies. In this case, MCB Camp Lejeune would submit a statement and supporting documentation (i.e., the Coastal Consistency Determination) to the state's program indicating that the action is consistent with the program. The state reviews the determination and either provides concurrence or objection.

In North Carolina, the NCDENR is the lead agency for coastal management, which is regulated under the North Carolina Coastal Area Management Act (CAMA) of 1974. Chapter 7 of the CAMA identifies the enforceable policies. Each of the 20 coastal counties in North Carolina develops local plans and upon approval by the North Carolina Coastal Resources Commission, each local plan becomes part of the



North Carolina Coastal Management Plan. The NCDENR Division of Coastal Management uses the Coastal Management Plan to issue CZMA permit decisions and federal Coastal Consistency Determination concurrences. The procedure for assessing whether MCB Camp Lejeune's proposed activities meet the requirements of the North Carolina Coastal Management Program is as follows:

- MCB Camp Lejeune determines whether the proposed activity is “consistent” with the enforceable policies of the North Carolina Coastal Management Program and submits it to the NCDENR Division of Coastal Management.
- NCDENR Division of Coastal Management reviews the determination and circulates it for review/comment to 10 state agencies and four federal agencies that review CAMA major permits.
- Following review, NCDENR Division of Coastal Management concurs or disagrees with the determination and notifies MCB Camp Lejeune in writing.

The enforceable policies issued by North Carolina for the coastal area address the following items:

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

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 Onslow County. There are two tiers within this boundary. The first tier is comprised of Areas of Environmental Concern (AECs) designated by the state. AECs have more thorough regulatory controls and include coastal wetlands, coastal estuarine waters, public trust areas, coastal estuarine shorelines, ocean beaches, frontal dunes, ocean erosion areas, inlet lands, small surface water supply watersheds, public water supply wellfields, and fragile natural resource areas. The second tier includes land uses with the potential to affect coastal waters, even though they are not defined as AECs. The coastal zone extends seaward to the three nautical mile territorial sea.

An AEC is an area of natural importance and its classification protects the area from uncontrolled development. AECs include almost all coastal waters and about three percent of the land in the 20 coastal counties. The four categories of AECs 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 wellfields; 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.

MCB Camp Lejeune includes coastal resources designated as AECs, including estuarine coastal waters, coastal shorelines, and coastal wetlands of the Estuarine and Ocean System AEC, as well as habitat for federal or state designated species and archaeological or historic resources of the Natural and Cultural Resource Areas AEC. As shown in Figure 3-2, the New River is designated as a coastal water (see Section 3.5.2 for additional details). Furthermore, all land located within 23 meters (m) (75 feet [ft]) of the normal high water level of these coastal estuarine waters is also considered to be coastal shoreline within the AEC. Coastal wetlands are located along much of the MCB Camp Lejeune's estuarine waters including the vicinity of the 4<sup>th</sup> Reconnaissance Platoon and Company E, 2<sup>d</sup> Amphibious Assault Battalion project areas, however no estuarine wetlands are present within the proposed project areas (see Section 3.5.3 for more detail). The proposed project areas are all outside of these AECs. Habitat that supports threatened and endangered species are considered a coastal resource under the Natural and Cultural Resource Area AEC. The proposed project area for the Consolidated Base MP/Military Headquarters Group MP Logistics Command Element is located entirely within an area designated by MCB Camp Lejeune as future habitat for the red-cockaded woodpecker; however this area does not currently support any red-cockaded woodpeckers (see Section 3.5.6).

Other coastal resources not designated as AECs in the vicinity of the project area include primary nursery areas and special secondary nursery areas (see Section 3.5.2 for additional details). A portion of the proposed project area for the 4<sup>th</sup> Reconnaissance Platoon facilities is located adjacent to an area designated as a primary nursery area. However, this designation was based on Geographic Information System data that is not currently up to date. Site reconnaissance demonstrates that the area is highly disturbed and characterized primarily by uplands; thus the quality of the habitat is likely not as high as other areas. Another coastal resource which is the Wallace Creek Natural Area is a natural heritage area located in the vicinity of the project area, but is located more than 1.6 kilometers (km) (1 mile [mi]) from the closest construction site. The CF Russell Long Leaf Pine Natural Area is also located outside of any proposed project area.

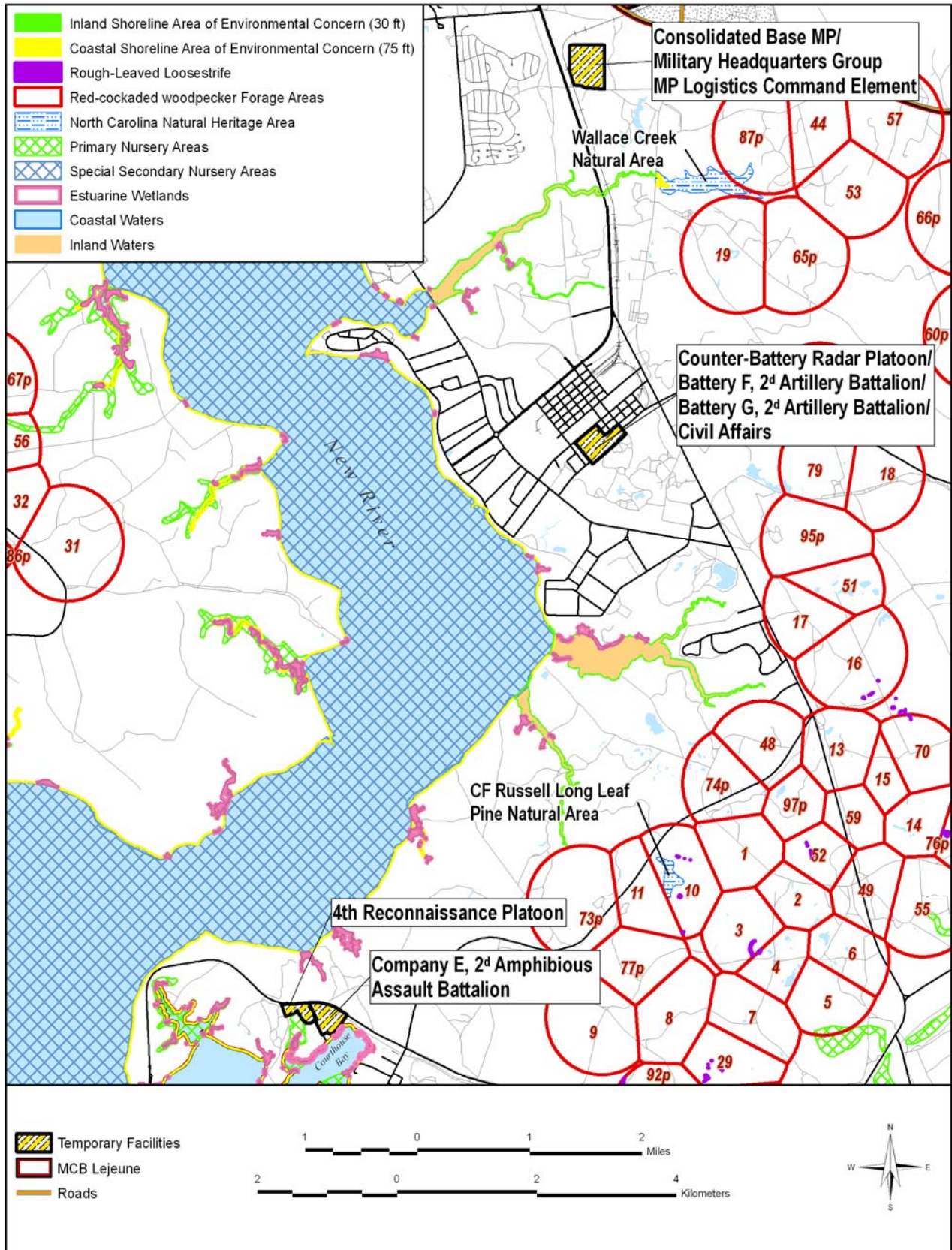


Figure 3-2 Coastal Resources

### **3.2 Air Quality**

Air quality is discussed in this EA because the proposed construction activities could generate temporary increases in fugitive dust emissions as well as temporary emissions from operation of construction vehicles. The proposed construction activities would not require installation of any permanent sources of air emissions such as boilers or generators (Atkins, 2008).

Seven pollutants (also known as "criteria pollutants") are commonly found in air, particularly in developed countries such as the United States. They are: particulate matter 10 microns in size, or PM<sub>10</sub>; particulate matter 2.5 microns in size, or PM<sub>2.5</sub>; ground-level ozone (O<sub>3</sub>); carbon monoxide (CO); sulfur oxides; nitrogen oxides; and lead (Pb). These pollutants can harm your health and the environment, and cause property damage. PM<sub>10</sub>, PM<sub>2.5</sub> and ground-level O<sub>3</sub> are the most widespread health threats.

Particle pollution, which includes both PM<sub>10</sub> and PM<sub>2.5</sub>, consists of very fine dust, soot, smoke, and droplets that are formed from chemical reactions. It is also produced when fuels such as coal, wood, or oil are burned. For example, sulfur dioxide (SO<sub>2</sub>) and nitrogen oxide gases from motor vehicles, electric power generation, and industrial facilities react with sunlight and water vapor to form particles. Particles may also come from fireplaces, wood stoves, unpaved roads, crushing and grinding operations, and may be blown into the air by the wind.

Ground-level O<sub>3</sub> is a primary component of smog. Ground-level O<sub>3</sub> can cause human health problems and damage forests and agricultural crops. The two types of chemicals that are the main ingredients in forming ground-level O<sub>3</sub> are called volatile organic compounds and nitrogen oxides. Volatile organic compounds are released by cars burning gasoline, petroleum refineries, chemical manufacturing plants, and other industrial facilities. The solvents used in paints and other consumer and business products contain volatile organic compounds. Nitrogen oxides are produced when cars and other sources like power plants and industrial boilers burn fuels such as gasoline, coal, or oil. The reddish-brown color you sometimes see when it is smoggy comes from the nitrogen oxides.

The United States Environmental Protection Agency (USEPA) calls these pollutants "criteria" air pollutants because it regulates them by developing human health-based and/or environmentally-based criteria (science-based guidelines) for setting permissible levels. These guidelines are collectively called the National Ambient Air Quality Standards. The National Ambient Air Quality Standards set a primary and, in some cases, a secondary standard for each of the criteria pollutants. The primary standards are limits set based on human health. The secondary standards are another set of limits intended to prevent environmental and property damage. A geographic area with air quality that is cleaner than the primary standard is called an "attainment" area; areas that do not meet the primary standard are called "nonattainment" areas. These primary and secondary standards are listed in Table 3.2-1. The NCDENR has an additional standard for total suspended particulates (TSP), which is also included in Table 3.2-1.

MCB Camp Lejeune and 13 surrounding counties are in an attainment area for these criteria pollutants that is identified as the Southern Coastal Plain Intrastate Air Quality Control Region (defined in 40 Code of Federal Regulations Part 81.152). MCB Camp Lejeune’s Title V Construction and Operation Permit authorizes the Base to operate and construct certain stationary air emission sources and associated air pollution control devices. The permit requires various monitoring, record keeping, and reporting for emission sources including, but not limited to, boilers, generators, surface coating operations, and engine testing operations.

**Table 3.2-1 National Ambient Air Quality Standards**

POLLUTANT	AVERAGING TIME	PRIMARY <sup>1</sup>	SECONDARY
Ozone (O <sub>3</sub> )	8 Hours	0.075 ppm	Same as Primary
Carbon Monoxide (CO)	8 Hours	9.0 ppm	None
	1 Hour	35 ppm	
Nitrogen Dioxide (NO <sub>2</sub> )	Annual Arithmetic Mean	0.053 ppm	Same as Primary
Sulfur Dioxide (SO <sub>2</sub> )	Annual Arithmetic Mean	0.03 ppm	None
	24 Hours	0.14 ppm	
	3 Hours	---	0.5 ppm
Particulate Matter (PM <sub>10</sub> )	24 Hours	150 µg/m <sup>3</sup>	Same as Primary
Particulate Matter (PM <sub>2.5</sub> )	Annual	15 µg/m <sup>3</sup>	Same as Primary
	24 Hours	35 µg/m <sup>3</sup>	---
Lead (Pb)	Quarterly Arithmetic Mean	1.5 µg/m <sup>3</sup>	Same as Primary
North Carolina TSP Standard	Annual Geometric Mean	75 µg/m <sup>3</sup>	--
	24 Hours	150 µg/m <sup>3</sup>	--

Source: USEPA, 2007a.

Notes: <sup>1</sup> ppm = parts per million by volume, µg/m<sup>3</sup> = micrograms per cubic meter.

### 3.3 Noise

Noise is analyzed in this EA because the proposed construction activities would produce temporary increases in noise in the vicinity of the proposed project sites. Although there are no sensitive noise receptors within any of the proposed project sites, there are several sensitive noise receptors in the vicinity, which are discussed further in the following sections.

Noise is one of the most common environmental issues associated with military operations such as weapons firing, demolitions, and aircraft operations. Typically, levels of noise are measured in units called decibels. A number of factors affect how the human ear perceives sound: the actual level of noise, frequency, period of exposure, and fluctuations in noise levels during exposure. Since the human ear cannot perceive all pitches or frequencies equally well, these measures are adjusted or weighted to compensate for the human lack of sensitivity to low-pitched and high-pitched sounds. This adjusted unit is known as the A-weighted decibel, or dBA. Transportation noise resulting from aircraft and vehicle activities is expressed in terms of dBA. The dBA is therefore used for evaluating noise sources related to traffic, small boats, and aircraft. The A-weighting scale closely resembles the frequency response of the human ear and therefore is considered to provide a good indication of the impact of noise produced by transportation activities.

human ear and therefore is considered to provide a good indication of the impact of noise produced by transportation activities.

The C-weighted scale, represented as dBC, measures more of the low-frequency components of noise than the A-weighted scale does. It is used for evaluating impulsive noise generated from large weapons such as heavy artillery and ordnance 20 millimeters (mm) (0.8 inches) or greater (MCB Camp Lejeune, 2005b).

### **3.3.1 Noise Planning Guidelines**

The Department of the Army has developed land use planning guidelines and uses the following land use zones to describe land use compatibility:

- **Noise Zone I** - acceptable for noise sensitive land uses.
- **Noise Zone II** – normally not recommended for noise sensitive land uses.
- **Noise Zone III** – not recommended for noise sensitive land uses (United States Army Center for Health Promotion and Preventative Medicine [USACHPPM], 2005).

Noise sensitive land uses typically include: residential areas, schools, hospitals, churches, etc.

### **3.3.2 Noise Data for MCB Camp Lejeune**

The most recent noise study completed for MCB Camp Lejeune is a June 2007 study prepared by the USACHPPM to include existing and future base-wide large caliber weapons noise contours (USACHPPM, 2007). The June 2007 noise study did not analyze small arms, aircraft, or transportation noise. According to the contours of the June 2007 noise study, the proposed project areas are situated in Noise Zones I and II. There are no sensitive noise receptors located directly in the proposed project areas, but there are several in the vicinity. The Harriotte Smith Library is located approximately 1 km (0.62 mi) from the proposed project area for the Counter-Battery Radar Platoon; Battery F, 2<sup>d</sup> Artillery Battalion; Battery G, 2<sup>d</sup> Artillery Battalion; and Civil Affairs facilities and the Protestant Chapel is located approximately 1.3 km (0.82 mi) away. The closest sensitive noise receptor to the proposed project area for the Consolidated Base MP/Military Headquarters Group MP Logistics Command Element is the Brewster Child Development Center and the Enon Chapel Baptist Church. Both are approximately 1.4 km (0.9 mi) away; the child development center is located on-base and the church is located off-base.

## **3.4 Cultural Resources**

Cultural resources are subject to review under federal laws and regulations. Section 106 of the National Historic Preservation Act of 1966 empowers the Advisory Council on Historic Preservation to comment on federally initiated, licensed, funded, or permitted projects affecting cultural sites listed or eligible for inclusion in the National Register of Historic Places. Once cultural resources have been identified, they are evaluated for their eligibility for inclusion into the National Register of Historic Places. If the resource is determined to be eligible, an assessment is undertaken to identify any impacts that may result

due to the proposed action. Only cultural resources determined to be noteworthy (i.e., eligible for or listed in the National Register of Historic Places) are protected under the National Historic Preservation Act.

MCB Camp Lejeune manages a variety of historic and prehistoric cultural resources in accordance with its Integrated Cultural Resource Management Plan. Cultural resources at the installations include prehistoric and historic archaeological sites ranging from the early Archaic period (8000 BC) to early European colonization and later settlement (MCB Camp Lejeune, Environmental Management Division, 2008). In addition to extensive archaeological resources, MCB Camp Lejeune also manages historic architectural properties. MCB Camp Lejeune was constructed during the mobilization of the Marine Corps during World War II, and many of their buildings and developed areas remain as they were originally constructed and retain a high degree of historical integrity (MCB Camp Lejeune, Environmental Management Division, 2008).

Based on predictive models and previous field surveys, MCB Camp Lejeune, in consultation with the North Carolina State Historic Preservation Office, has identified all the areas within the installation boundary with high probability archaeologically sensitive soils. Archaeological surveys of all high-probability soils within the project areas were undertaken by TRC Garrow and Associates, Inc. as part of the Fiscal Years 2002 and 2004 Silvicultural Prescription surveys (Richardson, 2008). In addition, project specific archaeological surveys have also been conducted and are listed as follows:

*Proposed Project Area for 4<sup>th</sup> Reconnaissance Platoon*-Surveys within the proposed project area for the 4<sup>th</sup> Reconnaissance Platoon facilities were conducted for the Mechanized Assault Course, Range F-245, and Riverine Center of Excellence Project by Louis Berger and Associates and for the Capital Improvements/P-568 Military Construction Project for Courthouse Bay by New South and Associates (Richardson, 2008).

*Proposed Project Area for Counter-Battery Radar Platoon; Battery F and G, 2<sup>d</sup> Artillery Battalion; and Civil Affairs*-Surveys within the proposed project area for the Counter-Battery Radar Platoon; Battery F and G, 2<sup>d</sup> Artillery Battalion; and Civil Affairs facilities were conducted for the 4<sup>th</sup> Marine Expeditionary Brigade Infrastructure Improvement by Pan American Consultants (Richardson, 2008).

Based on these surveys, no archaeological sites have been identified as occurring within the proposed project areas.

### **3.5 Natural Resources**

#### **3.5.1 Topography and Soils**

Topography and soils are discussed in this EA because the proposed construction activities would result in some ground disturbance, including clearing, grading, leveling, and placement of approved soil stabilization materials.

MCB Camp Lejeune is characterized by a combination of poorly drained broad, level flatlands and gently rolling better-drained terrain. The elevation of the proposed project areas vary depending on the specific locations. The elevation of the proposed project area for the Counter-Battery Radar Platoon; Battery F, 2<sup>d</sup> Artillery Battalion; Battery G, 2<sup>d</sup> Artillery Battalion; and Civil Affairs facilities where construction likely would occur ranges from 3 m (10 ft) to 10 m (34 ft) above sea level, with the average being approximately 7 m (23 ft) above sea level. The elevation of the proposed project areas for the 4<sup>th</sup> Reconnaissance Platoon and Company E, 2<sup>d</sup> Amphibious Assault Battalion facilities where construction likely would occur range from approximately 2 m (6 ft) to 7.3 m (24 ft) above sea level. The elevation of the proposed project area for the Consolidated Base MP/Military Headquarters Group MP Logistics Command Element facilities ranges from 8.5 m (28 ft) to 9 m (30 ft) above sea level.

Soil types associated with the proposed project areas for the temporary facilities include Baymeade, Marvyn, Muckalee, Onslow, Wando, Foreston, Woodington, Urban land, and Pits. Of the nine soil types, only two have hydric properties. Table 3.5-1 provides a brief description of the soil types found within the proposed project areas. Figure 3-3 shows the soil types in the vicinity of the proposed project areas.

#### **3.5.2 Water Resources and Stormwater**

Water resources are discussed in this EA due to the proximity of the New River and several unnamed tributaries to some of the proposed project areas for the temporary facilities. Stormwater management is discussed in this EA because the proposed construction activities would result in an increase in impervious surfaces, which could result in an increase in stormwater runoff.

The State of North Carolina has assigned water quality classifications for surface waters based on the existing and contemplated “best usage” for which the waters must be protected. Class SA waters receive the highest rating for tidal waters and are suitable for shell fishing and any of the uses specified for SB and SC classifications. The intermediate rating for tidal waters is Class SB, waters suitable for primary recreation and other uses as specified by the SC classification. Class SC waters are suitable for aquatic life propagation and survival, fishing, wildlife, and secondary recreation (15A North Carolina Administrative Code [NCAC] 02B).



**Table 3.5-1 Soil Types in Vicinity of Proposed Project Areas**

Soil Unit	Description
<b>Non-Hydric Soils</b>	
Baymeade fine sand, 0 to 6 percent slopes (BaB)	These nearly level to gently sloping, very deep, well drained soils are on uplands. They formed in loamy and sandy marine sediments. They have a sandy surface layer and a loamy subsoil. Permeability is moderately rapid and shrink-swell potential is low. Seasonal high water table is within a depth of 1.2 to 1.5 m (4.0 to 5.0 ft).
Marvyn loamy fine sand, 6 to 15 percent slopes (MaC)	These gently sloping to strongly sloping, very deep, well drained soils are on uplands. They formed in loamy marine sediments. They have a sandy surface layer and a loamy subsoil. Permeability is moderate and shrink-swell potential is low. Seasonal high water table is below a depth of 1.8 m (6.0 ft).
Onslow loamy fine sand (On)	These nearly level, very deep, moderately well drained to somewhat poorly drained soils are on uplands. They formed in loamy marine sediments. They have a sandy surface layer and a loamy subsoil. Permeability is moderate and shrink-swell potential is low. Seasonal high water table is within a depth of 0.4 to 0.9 m (1.5 to 3.0 ft).
Wando fine sand, 1 to 6 percent slopes (WaB)	These well drained, upland soils are located on coastal plains and ridges on marine terraces. The parent material consists of eolian sands and/or beach sand. Seasonal high water table is within a depth of 1.5 m (5 ft).
Foreston loamy fine sand, 0 to 2 percent slopes (FoA)	The Foreston series consists of well drained, moderately rapidly permeable soils that formed in marine sediment. These soils are on high ridges and slight rises within broad flat interstream divides of the Coastal Plain.
Urban Land	This type of soil unit is primarily covered by pavement or buildings. These areas are used for shopping centers, factories, municipal buildings, parking lots, and other urban uses. The soils between these areas are generally used for lawns, playgrounds, cemeteries, and drainage ways. The natural soils have been greatly altered by cutting, filling, grading, and shaping during the process of urbanization.
Pits (Pt)	Soil that has been excavated and/or filled and no longer shows characteristics of the original soil type. Pits generally support little to no vegetation.
<b>Hydric Soils</b>	
Muckalee loam (Mk)	These nearly level, very deep, poorly drained soils are on flood plains. They formed in loamy and sandy alluvial sediments. They have a loamy surface layer. The underlying materials are loamy and sandy. Permeability is moderate and shrink-swell potential is low. Seasonal high water table is within a depth of 0.3 m (1.0 ft). These soils are subject to frequent flooding.
Woodington loamy fine sand (Wo)	These nearly level, poorly drained soils occur on coastal plains and flats on marine terraces. The parent material consists of loamy marine deposits.

Source: United States Department of Agriculture; Natural Resources Conservation Service, 2007.

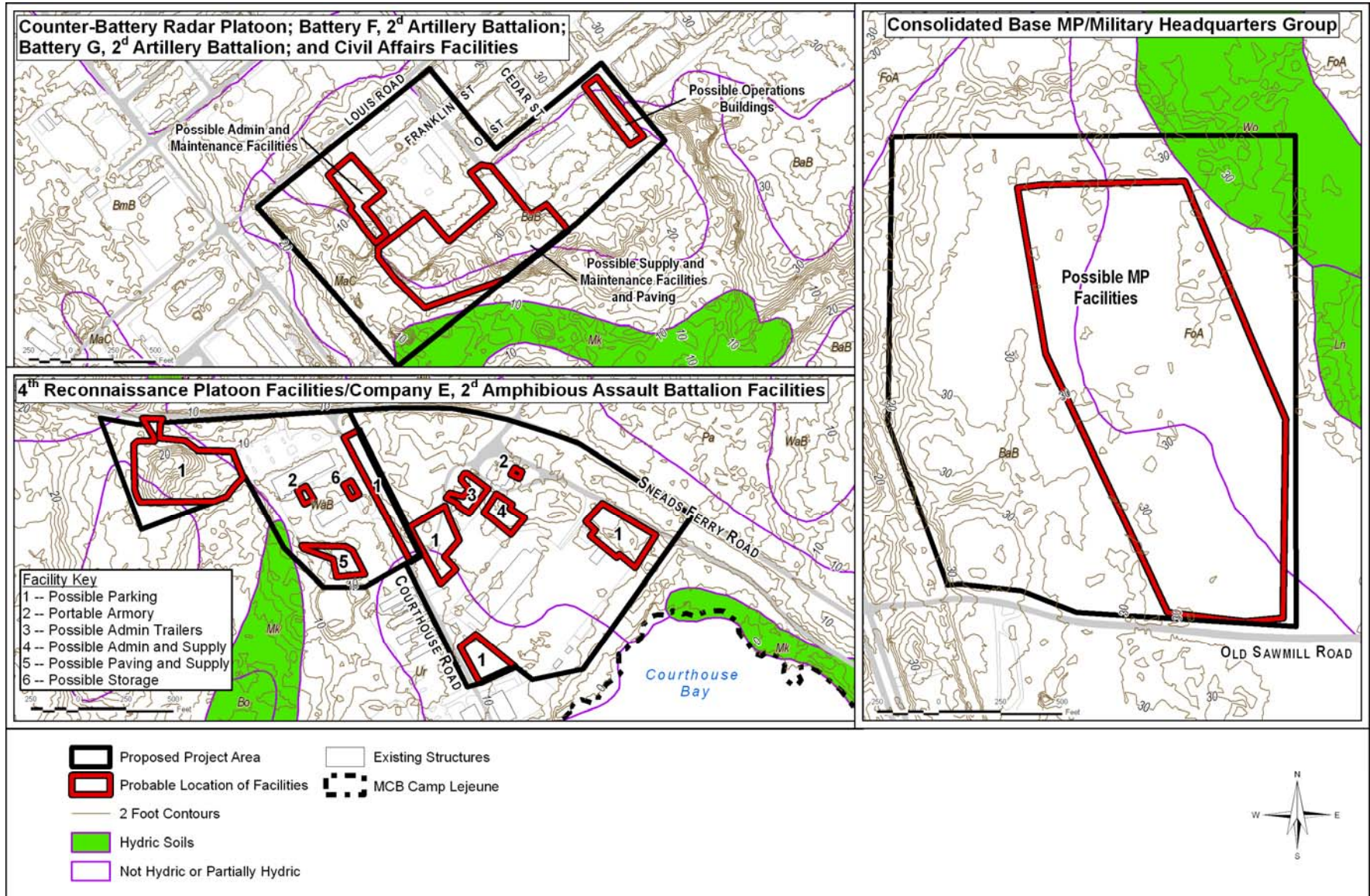


Figure 3-3 Topography and Soil Types within the Proposed Project Areas

In addition to these principal water quality classifications, NCDENR has applied supplemental classifications to describe other attributes of the water bodies. The term “nutrient sensitive waters” identifies streams, creeks, and rivers that show decreased fish populations, decreased ambient dissolved oxygen, increased frequency of fish kills, and increased algae concentrations. “High quality waters” are waters rated as excellent based on biological or physical/chemical characteristics (15A NCAC 02B).

The North Carolina Marine Fisheries Commission has further designated certain estuarine areas as “nursery areas” to protect the habitat for juvenile populations of economically important commercial fish species. Nursery areas provide food, cover, suitable substrate, and appropriate salinity and temperature for young finfish and crustaceans over a major portion of their initial growing season (15A NCAC 3N). Primary nursery areas are located in the upper portions of creeks and bays. These areas are usually shallow with soft muddy bottoms and surrounded by marshes and wetlands. Low salinity and the abundance of food in these areas are ideal for young fish and shellfish (North Carolina Department of Marine Fisheries [NCDMF], 2006). “Special secondary nursery areas” are located adjacent to “secondary nursery areas” but closer to the open waters of the sounds and the oceans. For the majority of the year when juvenile species are abundant, these waters are closed to trawling. Figure 3-4 shows surface waters in the vicinity of the project area. Surface water features near the proposed project areas are described as follows:

- *New River (Courthouse Bay)*-The New River (Courthouse Bay) is a coastal water located to the south of the proposed project area for the Company E, 2<sup>d</sup> Amphibious Assault Battalion facilities. All waters draining to the New River north of Grey Point are considered nutrient sensitive waters. The New River and most tributary streams of the New River south of the city of Jacksonville have the additional designation of high quality water (15A NCAC 3N.0002) and primary nursery areas (15A NCAC 3N.0002); however the section of the New River nearest to the proposed project area is not designated as any type of nursery area.
- *Unnamed Tributaries*-Two unnamed tributaries are present in the vicinity of the proposed project area as shown on Figure 3-4. A marshy area is present near the proposed project area for the 4<sup>th</sup> Reconnaissance Platoon facilities that is considered a primary nursery area.

### Groundwater

All of Onslow County, including MCB Camp Lejeune, falls within the freshwater portion of the Castle Hayne aquifer. This aquifer is surficial or unconfined in that it overlies deeper aquifers confined by clay sediments. The Castle Hayne aquifer ranges from 1.6 to 290 m (5 to 954 ft) in thickness, with an average depth of 53 m (175 ft). Composed of limestone, sandy limestone, and sand, it is the most productive aquifer in North Carolina with wells typically producing 0.8 – 1.9 kiloliters per minute (200-500 gallons per minute) (NCDENR, 2007)

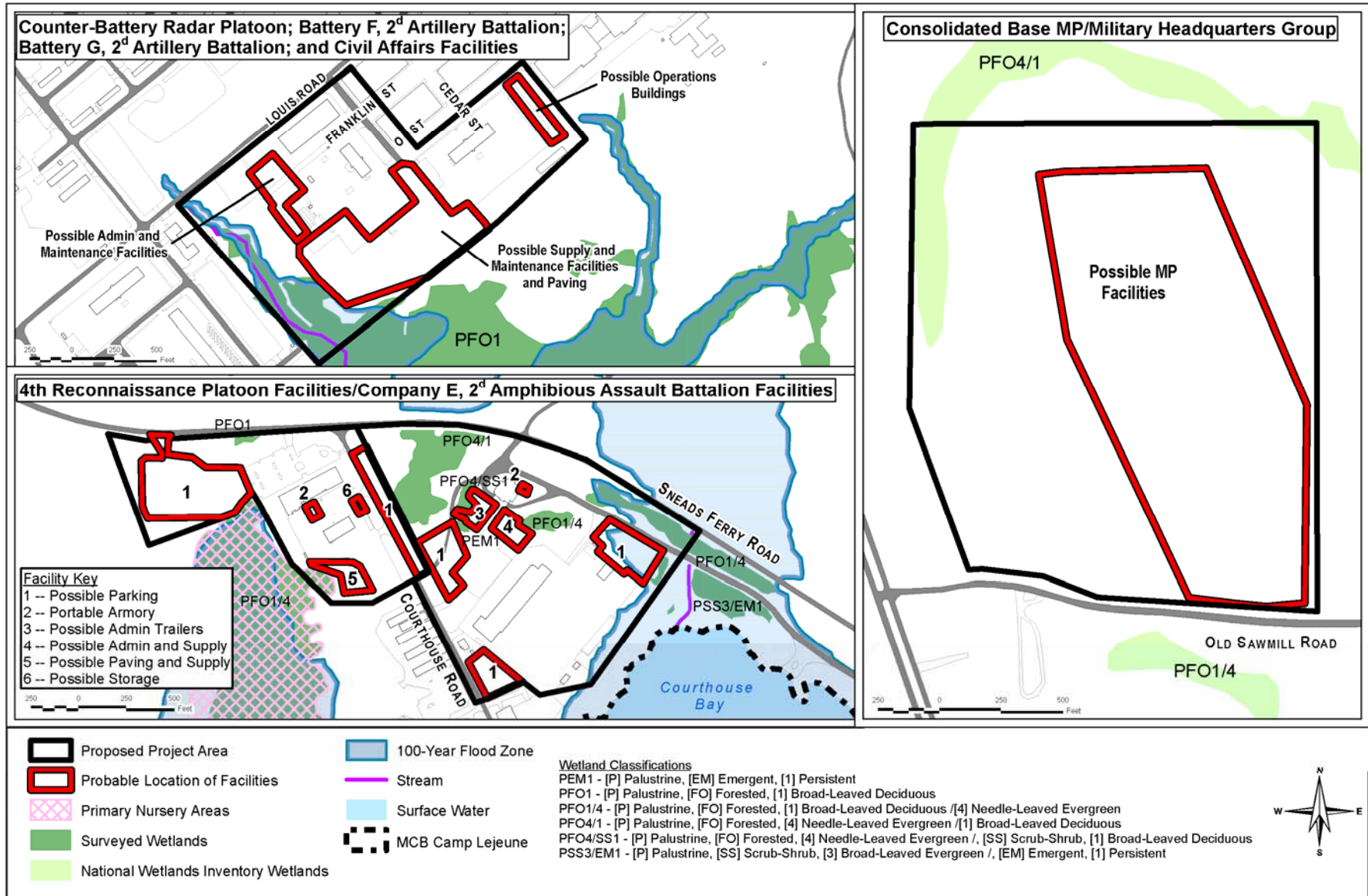


Figure 3-4 Surface Water, Wetlands, Floodplains in the Vicinity of the Proposed Project Areas

### Stormwater Management

The NCDENR Division of Water Quality is the National Pollutant Discharge Elimination System (NPDES) permitting authority for MCB Camp Lejeune. The Base received its NPDES Phase I Stormwater permit in August 2004. The application for a stormwater permit under NPDES Phase II has been submitted; approval is expected no sooner than 2008 (Whited, 2006 in MCB Camp Lejeune, 2007b).

The Base developed a 2002 Stormwater Pollution Prevention Plan for Phase I, which is a comprehensive program to control stormwater discharges (Department of the Navy [DoN], 2002). In addition, the Base developed a Stormwater Outfall Monitoring Plan to comply with Phase I. The Stormwater Outfall Monitoring Plan was prepared in conjunction with MCB Camp Lejeune's Stormwater Pollution Prevention Plan to assist in complying with Phase I outfall sampling/monitoring requirements. To prepare for the NCDENR NPDES Phase II Program, MCB Camp Lejeune developed a Stormwater Management Plan that serves as a planning tool (DoN, 2003). All development needs to comply with NCDENR's Best Management Practices Manual (July 2007) (Whited, 2008 in MCB Camp Lejeune, 2008).

The stormwater infrastructure at MCB Camp Lejeune includes: drainage ditches and swales, piping networks, curb and gutter conveyance features, and stormwater retention ponds.

### **3.5.3 Wetlands and Floodplains**

Wetlands and floodplains are discussed in this EA because of the proximity of several wetland and floodplain areas to the proposed project areas for the temporary facilities. Additionally, one of the wetland areas is considered a primary nursery area, which is an important natural resource.

#### Wetlands

Executive Order 11990, *Protection of Wetlands*, directs federal agencies to take action to minimize the destruction, loss, or degradation of wetlands on their property and mandates review of proposed actions on wetlands through procedures established by NEPA. It requires that federal agencies establish and implement procedures to minimize development in wetlands. In support of the Navy's goal of "no net loss of wetlands" all Navy and Marine Corps construction and operational actions must avoid adverse impacts to or destruction of wetlands. If this is impossible, then designs shall be made to minimize wetland degradation and shall include mitigation to replace impacted wetlands in another location.

All of the proposed project areas for the temporary facilities contain wetlands. Although wetlands are present within all of the proposed project areas, there are no wetlands located within the proposed siting areas for the actual facility layout where construction would occur (see Figure 3-4). In totality, the proposed project areas contain approximately 5 ha (13 ac) of palustrine forested and palustrine emergent wetlands. Palustrine system wetlands are non-tidal freshwater wetlands that are dominated by trees, shrubs, and emergent vegetation.

## Floodplains

Executive Order 11988, *Floodplain Management*, sets forth the responsibilities of federal agencies for reducing the risk of flood loss or damage to personal property, minimizing the impacts of flood loss, and restoring the natural and beneficial functions of floodplains. This order was issued in furtherance of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. Floodplains and flood hazard zones are generally present throughout MCB Camp Lejeune near the New River and its creeks and estuaries. In totality, there are approximately 4.1 ha (10.1 ac) of floodplains located within the proposed project areas (see Figure 3-4).

### **3.5.4 Vegetation**

Vegetation is discussed in this EA because the proposed action would require some vegetation clearing for construction of the proposed temporary facilities. The predominant vegetation types that are located within the proposed project areas are mixed pine and hardwood species, as described in greater detail below. A brief discussion of wetland vegetation is also included due to the proximity of several wetland areas to the proposed project sites.

MCB Camp Lejeune encompasses approximately 38,445 ha (95,000 ac) of managed forest, 7,001 ha (17,300 ac) of non-forested land, 5,059 ha (12,500 ac) of impact areas, and 10,522 ha (26,000 ac) of the New River. All forested land is managed by the Base's Forest Management Program. The Forest Management Program staff is responsible for all timber harvests associated with timber management and construction projects involving the removal of merchantable timber. Fire also plays a deciding role in the vegetation communities of MCB Camp Lejeune, affecting canopy and understory density and species composition.

On the sections of the Base where the proposed project area is located, the landscape is characterized by mixed pine and hardwood species. The most common tree species in these areas are the loblolly pine (*Pinus taeda*) with several species of hardwoods including the black gum (*Nyssa sylvatica*), sweet gum (*Liquidambar styraciflua*), southern red oak (*Quercus falcata*), white oak (*Quercus alba*), and red maple (*Acer rubrum*). The shrub layer varies with wetness, but generally consists of wax myrtle (*Myrica cerifera*), blue huckleberry (*Gaylussacia frondosa*), and sparkleberry (*Vaccinium arboreum*). Groundcover species vary with the degree of land disturbance and fire regimes but can include wiregrass (*Aristida stricta*), bracken fern (*Pteridium aquinum*), and bluestems (*Schizachyrium spp.*), along with more disturbance tolerant species like green briar (*Smilax spp.*) and broomsedge (*Andropogon virginicus*). Table 3.5-2 provides a brief summary of the general type of forest and production value of the forested areas located within the proposed project areas.

**Table 3.5-2 Forest Types and Production Values for Project Areas**

Temporary Facility	Forest in Project Area	Type of Forest	Age of Forest	Production Value (in board feet [bf])
Company E, 2 <sup>d</sup> Amphibious Assault Battalion	4 ha (10 ac)	Excessively drained, sandy, maritime influenced pine-oak woodland	54 years old	300 bf
4 <sup>th</sup> Reconnaissance Platoon	3 ha (8 ac)	Poorly drained, mucky, small stream swamp- mostly hardwood	54 years old	500 bf
Counter-Battery Radar Platoon/Battery F, 2 <sup>d</sup> Artillery Battalion/Battery G, 2 <sup>d</sup> Artillery Battalion/Civil Affairs	4 ha (11 ac)	Well-drained, sandy, pine- hardwood slope-mostly hardwood	71 years old	300 bf
Consolidated Base MP/ Military Headquarters Group MP Logistics Command Element	26 ha (65 ac)	Well-drained to Moderately well-drained, sandy, longleaf pine savanna	18 years old (45%), 65 years old (55%)	0 bf (45%), 150 bf (6%), 300 bf (45%), 500 bf (4%)

Source: MCB Camp Lejeune GIS data and Marshburn, 2008.

As described in Section 3.5.3, the predominant wetland types found within the proposed project areas are palustrine forested and palustrine emergent. Forested palustrine wetlands are dominated by trees and are sometimes called wooded swamps. Red maple (*Acer rubrum*), and white cedar (*Chamaecyparis thyoides*) are often found in palustrine forested wetlands. Typical shrubs include highbush blueberry (*Vaccinium corymbosum*), and silky dogwood (*Cornus amomum*). Cinnamon fern (*Osmunda cinnamomea*), as well as touch-me-not jewelweed (*Impatiens capensis*), arrow arum (*Peltandra virginica*) and royal fern (*Osmunda regalis*) inhabit forested palustrine wetlands. The palustrine emergent category includes all freshwater (containing less than 0.5 parts per thousand ocean-derived salts) wetlands dominated by rooted erect soft-stemmed plants. Most habitats in this category are freshwater marshes vegetated by plants such as cattail (*Typha spp.*), arrowhead (*Sagittaria spp.*) and pickerelweed (*Pontederia cordata*). Also included are wet prairies, wet meadows and pitcher plant (*Sarracenia spp.*) bogs, each of which may be vegetated by a diverse assemblage of non-woody plant species.

### 3.5.5 Wildlife

A discussion of wildlife is included in this EA because various wildlife species would be expected to occur within the proposed project areas for the temporary facilities and could therefore be displaced by the proposed construction activities.

Wildlife at MCB Camp Lejeune is typical of that found in the southeastern Coastal Plain of North Carolina. Mammals commonly found include white-tailed deer (*Odocoileus virginianus*), eastern gray squirrel (*Sciurus carolinensis*), eastern cottontail (*Sylvilagus floridanus*), opossum (*Didelphis virginiana*), southern flying squirrel (*Glaucomys volans*), and raccoon (*Procyon lotor*). Many reptiles and amphibians, from the diminutive pine wood snake (*Rhadinaea flavilata*) to the oak toad (*Bufo quercicus*),

are abundant throughout the Base. As described in Section 3.5.3, the proposed project areas are located near palustrine forested and palustrine emergent wetlands. A diversity of wildlife species could inhabit or utilize this type of habitat, such as American black bear (*Ursus americanus*), beaver (*Castor Canadensis*), mink (*Mustela vison*), white-tailed deer (*Odocoileus virginianus*), blue heron (*Ardea herodias*), and wood duck (*Aix sponsa*).

Birds common to the area include mourning dove (*Zenaida macroura*), northern bobwhite quail (*Colinus virginianus*), mockingbird (*Mimus polyglottos*), American robin (*Turdus migratorius*), catbird (*Dumetella carolinensis*), and various sparrows (*Fringillidae*) and warblers (*Parulidae*). Pairs of osprey (*Pandion haliaetus*) occupy nests scattered along the shores of the New River and its larger tributaries. Virtually all birds that occupy MCB Camp Lejeune throughout the year are protected under the Migratory Bird Treaty Act (MBTA). The MBTA of 1918 is the primary legislation in the United States established to conserve migratory birds. The MBTA prohibits the taking, killing or possessing of migratory birds unless permitted by regulation. Migratory birds are viewed as a shared resource, and collaboration with other nations (Canada, Mexico, Russia, and Japan) is aimed at cooperatively protecting this resource. Eastern North Carolina sees a wide array of migratory birds because it is part of the Atlantic Flyway. Additionally, within the area of eastern North Carolina, there are 10 National Wildlife Refuges aimed to preserve the natural environment and protect areas from impacting human behavior.

The Department of Defense operates under a Memorandum of Understanding with the USFWS for MBTA coordination on activities, such as the proposed action, that are not specifically related to military readiness. The Memorandum of Understanding states that the Department of Defense shall accomplish the following prior to starting any activity that is likely to affect populations of migratory birds:

1. Identify the migratory bird species likely to occur in the area of the proposed action and determine if any species of concern could be affected by the activity;
2. Assess and document, through the project planning process, using NEPA when applicable, the effect of the proposed action on species of concern; and
3. Engage in early planning and scoping with the USFWS relative to potential impacts of a proposed action, to proactively address migratory bird conservation, and to initiate appropriate actions to avoid or minimize the taking of migratory birds.

The Memorandum of Understanding points to several regional reports and plans to identify species of concern. MCB Camp Lejeune biologists compiled these reports and used them to prepare a list of the species of concern that could potentially occupy the habitat provided in the area of the proposed action. This list is provided in Appendix A of this EA. Chapter 4 of this EA provides assessment of the likelihood of population level effects on these species.



A multi-species scientific management strategy is used to maintain habitat requirements for several game and non-game species within MCB Camp Lejeune. Game species include eastern wild turkey (*Meleagris gallopavo*), white-tailed deer (*Odocoileus virginianus*), black bear (*Ursus americanus*), squirrel [such as eastern gray squirrel (*Sciurus carolinensis*)], northern bobwhite quail (*Colinus virginianus*), eastern cottontail (*Sylvilagus floridanus*), raccoon (*Procyon lotor*), wood duck (*Aix sponsa*), largemouth bass (*Micropterus salmoides*), bluegill (*Lepomis macrochirus*), red-ear sunfish (*Lepomis miniatus*), and channel catfish (*Ictalurus punctatus*). Non-game species under management plans include the eastern bluebird (*Sialia sialis*), purple martin (*Progne subis*), least tern (*Sterna antillarum*), various neo-tropical migrant birds, and a variety of reptiles and amphibians (MCB Camp Lejeune, 2007a).

Most of the proposed project areas are located on or near previously disturbed areas, with the exception of the proposed project area for the Consolidated Base MP/Military Headquarters Group MP Logistics Command Element facilities which is located in a forested area. Therefore, forest dwelling species would be more likely to be found in the proposed project area for the consolidated kennel facilities than the other proposed project areas due to the larger tracts of forested habitat in this area.

### **3.5.6 Threatened and Endangered Species**

Threatened and endangered species are discussed in this EA because several are known to occur or potentially occur at MCB Camp Lejeune. Additionally, the proposed project area for the Consolidated Base MP/Military Headquarters Group MP Logistics Command Element facilities would be located in areas designated by MCB Camp Lejeune as future red-cockaded woodpecker habitat (NE P5 and NE P6).

#### **3.5.6.1 Federally Listed Species**

The Endangered Species Act of 1973 and subsequent amendments provide for the conservation of threatened and endangered species of animals and plants, and the habitats in which they are found. The Endangered Species Act prohibits jeopardizing endangered and threatened species or adversely modifying critical habitats essential to their survival. Section 7 of the act requires consultation with the National Oceanic and Atmospheric Administration (NOAA) Fisheries and USFWS to determine whether any endangered or threatened species under their jurisdiction may be affected by the proposed action (MCB Camp Lejeune, 2005a). The USMC ensures that consultations are conducted as required with USFWS and NOAA under Section 7 for any action which “may affect” a threatened or endangered species according to guidance provided in the Environmental Resources Program Manual, Marine Corps Order P5090.2A (MCB Camp Lejeune, 2005a).

MCB Camp Lejeune is home to several federally listed threatened and endangered species. MCB Camp Lejeune’s threatened and endangered species program focuses on protection, management, and monitoring of the federally listed species found at the Base and listed in Table 3.5-3 (MCB Camp Lejeune, 2007a). None of the listed species are known to occur within the proposed project areas. Furthermore, there is no designated critical habitat on MCB Camp Lejeune.

**Table 3.5-3 Federal Threatened, Endangered, and Rare Species Known to Occur or Potentially Occurring at MCB Camp Lejeune**

Common Name	Scientific Name	Status
Leatherback sea turtle	<i>Dermochelys coriacea</i>	Endangered
Loggerhead sea turtle	<i>Caretta caretta</i>	Threatened
Green sea turtle	<i>Chelonia mydas</i>	Threatened
Piping plover	<i>Charadrius melodus</i>	Threatened
American alligator <sup>1</sup>	<i>Alligator mississippiensis</i>	Threatened
Red-cockaded woodpecker	<i>Picoides borealis</i>	Endangered
Seabeach amaranth	<i>Amaranthus pumila</i>	Threatened
Rough-leaved loosestrife	<i>Lysimachia asperulaefolia</i>	Endangered
Coastal goldenrod	<i>Solidago villosicarpa</i>	Species of Concern
Hirst's panic grass	<i>Dichanthelium hirstii</i>	Candidate for listing

Note:

<sup>1</sup> Although still listed as federally threatened, the American alligator is considered recovered.

Source: MCB Camp Lejeune, 2007a.

Although the proposed project areas do not contain any known threatened or endangered species, the proposed project area for the Consolidated Base MP/Military Headquarters Group MP Logistics Command Element facilities would be located in areas identified by MCB Camp Lejeune as future red-cockaded woodpecker habitat (NE P5 and NE P6) (see Figure 3-5). Although this area is designated as future red-cockaded woodpecker habitat, the area does not currently support any red-cockaded woodpeckers. The nearest cluster is located approximately 2.6 km (1.6 mi) east of the project area (see Figure 3-2).

MCB Camp Lejeune currently supports 84 active red-cockaded woodpecker clusters. The 2006 *Red-cockaded Woodpecker Camp Lejeune Recovery Plan* was developed to manage and direct continuing red-cockaded woodpecker growth on the Base. MCB Camp Lejeune's objective is to maintain an established recovery goal of 173 red-cockaded woodpecker clusters (MCB Camp Lejeune, 2007a).

The proposed project areas likely do not support habitat for the remaining federally listed species in Table 3.5-3. There are no natural heritage areas within the proposed project areas.

### 3.5.6.2 Other Species at Risk

In addition to the federally listed threatened and endangered species described above, several additional species at risk may occur at MCB Camp Lejeune. According to MCB Camp Lejeune's Integrated Natural Resources Management Plan, the Base defines species at risk as those species that are not federally listed, but are a conservation concern because of several factors including the species' rarity, proportion of the species population occurring on-base, and the potential of the species to impact training missions if it were to become listed (MCB Camp Lejeune, 2007a). MCB Camp Lejeune protects populations of species at risk by designating conservation areas as defined in the Protected Species Base Order (BO 5090.11) where such restrictions do not negatively impact training. MCB Camp Lejeune works with the North Carolina Natural Heritage Program on pilot programs designed to proactively manage coastal goldenrod

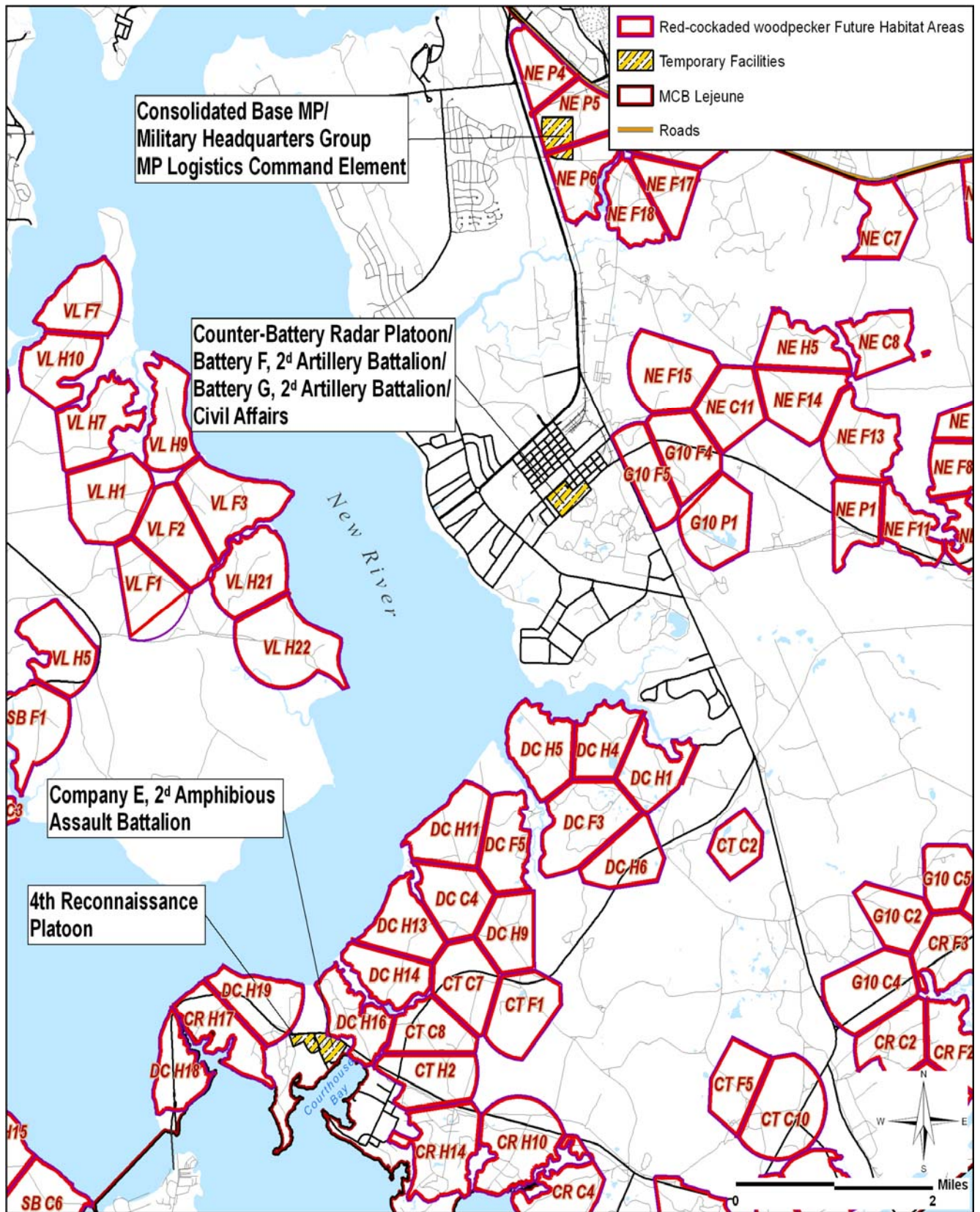


Figure 3-5 Red-cockaded Woodpecker Future Habitat Areas

(*Solidago villosicarpa*), a federal species of concern. There are no coastal goldenrod (*Solidago villosicarpa*) populations within any of the proposed project areas for the temporary facilities.

In addition to the species at risk previously mentioned, there are several state protected species that may occur or have been recorded in Onslow County. Based on the predominant habitat types found throughout MCB Camp Lejeune, Table 3.5-4 shows a list of state protected species that could occur at the Base. MCB Camp Lejeune has not conducted site-specific surveys to determine the presence or absence of these species within the proposed project areas.

Although three species, coastal goldenrod (*Solidago villosicarpa*), Hirst’s panic grass (*Dichantheium hirstii*), and rough-leaved loosestrife are included in Table 3.5-4, they likely do not occur within any of the proposed project areas. MCB Camp Lejeune has conducted surveys to determine high probability areas for rough-leaved loosestrife (*Lysmachia asperulifolia*) and Hirst’s panic grass (*Dichantheium hirstii*) and there are no high probability areas for these species located within any of the proposed project areas for the temporary facilities. Additionally, as previously mentioned, MCB Camp Lejeune has not identified any populations of coastal goldenrod (*Solidago villosicarpa*), within any of the proposed project areas for the temporary facilities.

**Table 3.5-4 State-Listed Species Potentially Occurring in Onslow County and MCB Camp Lejeune**

Type	Latin Name	Common Name	State/(Federal) Listing
Plants	<i>Asplenium heteroresiliens</i>	Carolina Spleenwort	E (FSC)
	<i>Carex lutea</i>	Golden Sedge	E (E)
	<i>Calopogon multiflorus</i>	Many-flower Grass Pink	E (FSC)
	<i>Cystopteris tennesseensis</i>	Tennessee Bladder-fern	E
	<i>Dichantheium hirstii</i>	Hirsts’ Panic Grass	E (C)
	<i>Lophiola aurea</i>	Golden Crest	E
	<i>Lysmachia asperulifolia</i>	Rough-leaved Loosestrife	E (E)
	<i>Muhlenbergia torreyana</i>	Pinebarren Smokegrass	E
	<i>Myriophyllum laxum</i>	Loose Watermilfoil	T (FSC)
	<i>Parnassia caroliniana</i>	Carolina Grass-of-Parnassus	E
	<i>Plantago sparsiflora</i>	Pineland Plantain	E (FSC)
	<i>Platanthera integra</i>	Yellow Fringeless Orchid	T
	<i>Rhexia aristosa</i>	Awed Meadow-beauty	T (FSC)
	<i>Solidago pulchra</i>	Carolina Goldenrod	E
	<i>Solidago verna</i>	Spring-flowering Goldenrod	SR (FSC)
	<i>Thalictrum cooleyi</i>	Cooley’s meadowrue	E (E)
<i>Utricularia olivacea</i>	Dwarf Bladderwort	T	
Birds	<i>Aimophila aestivalis</i>	Bachman’s Sparrow	SC (FSC)
	<i>Haliaeetus leucocephalus</i>	Bald Eagle <sup>1</sup>	T
	<i>Mycteria americana</i>	Wood Stork	E (E)
	<i>Passerine ciris</i>	Painted Bunting	(FSC)
	<i>Picoides borealis</i>	Red-cockaded Woodpecker	E (E)
Mammals	<i>Corynorhinus rafinesquii</i>	Rafinesque’s Big-eared Bat	SC
	<i>Neotoma floridana floridana</i>	Eastern Woodrat	T
	<i>Puma concolor cougar</i>	Eastern Cougar	E (E)

Type	Latin Name	Common Name	State/(Federal) Listing
<b>Amphibians</b>	<i>Rana capito capito</i>	Carolina Gopher Frog	T (FSC)
<b>Reptiles</b>	<i>Crotalus adamanteus</i>	Eastern Diamondback Rattlesnake	E
	<i>Crotalus horridus</i>	Timber Rattlesnake	SC
	<i>Heterodon simus</i>	Southern Hognose Snake	SC (FSC)
	<i>Malaclemys terrapin centrata</i>	Carolina Diamondback Terrapin	SC
	<i>Micrurus fulvius</i>	Eastern Coral Snake	E
	<i>Ophisaurus mimicus</i>	Mimic Glass Lizard	SC (FSC)
	<i>Sistrurus miliarius</i>	Pigmy Rattlesnake	SC

E = Endangered, T = Threatened, SC = Special Concern, SR = State Rare.

Source: MCB Camp Lejeune, 2007a.

Notes: <sup>1</sup>Bald eagles would only likely occur as a transient species, if present within the proposed project areas. A bald eagle nest was first documented on Base in 2000 along the New River where it meets Sneads Creek. Protective buffers have been established around the nest site with restrictions on both ground and air-use activities (MCB Camp Lejeune, 2007a). Bald eagles are no longer federally listed.

### 3.6 Hazardous Materials and Waste

Hazardous materials and waste including Installation Restoration sites are discussed in this EA because several of these sites, both closed and active, are located with the proposed project area boundaries for the temporary facilities.

#### 3.6.1 Hazardous Materials and Waste Management

Hazardous materials and hazardous wastes are managed in accordance with Base Order 6240.5B, *Hazardous Waste and Hazardous Material Management Program*. Personnel involved in any aspect of hazardous waste management are trained in safety and compliance regulations. The Base has an Installation Hazardous Waste Management Program, in which standard operating procedures are outlined for the handling and disposal of hazardous waste (MCB Camp Lejeune, 1999).

The various departments and divisions within MCB Camp Lejeune generally order hazardous materials through the supply system. Some materials are purchased through outside vendors. Implementation of the Hazardous Material Management System has helped reduce the amount of hazardous materials purchased. Excess or shelf-life expired hazardous materials are brought to Environmental Management Division's Resource Conservation and Recovery Section for characterization. These materials are recycled if possible, or disposed of, mostly through the Defense Reutilization and Marketing Office (MCB Camp Lejeune, 2005b).

#### 3.6.2 Installation Restoration Program Sites

The mission of the Installation Restoration Section is to assess and remediate contaminated sites aboard MCB Camp Lejeune that resulted from past disposal practices and spills and leaks of hazardous materials and waste. Over the years, contaminants have spread into the soils and groundwater beneath the Base and,

if left in place, can provide a risk to human health and the environment. There are four remedial action programs currently active:

- The Installation Restoration Program for the cleanup of sites identified prior to 1986;
- The Solid Waste Management Unit (SWMU) Program which deals with sites identified after 1986 or where a continued operation has released contamination into the environment;
- The Underground Storage Tank (UST) Program that deals with the identification and removal of petroleum contamination resulting from the operation of USTs (MCB Camp Lejeune, Environmental Management Division, 2007); and
- The Military Munitions Response Program (MMRP) for the cleanup of military ranges.

Several Installation Restoration sites are present within the boundaries of the proposed project areas and are described below. Figure 3-6 shows the locations of these sites.

Counter-Battery Radar Platoon/Battery F, 2<sup>d</sup> Artillery Battalion /Battery G, 2<sup>d</sup> Artillery Battalion/Civil Affairs

Installation Restoration Site 78, the Hadnot Point Industrial Area, is located to the west of Piney Green Road. This site comprises approximately 239 ha (590 ac) and includes maintenance shops, gas stations, administrative offices, printing shops, warehouses, storage yards, and other similar industrial facilities. The Final Record of Decision was signed on 15 September 1994. Several remedial investigations have been conducted at this site. Results of the initial investigation in 1994 indicated that organics had affected the groundwater within certain areas of the study area. Separate groundwater extraction and treatment systems were constructed in the northern and southern portions of Installation Restoration Site 78 and are currently ongoing. A supplemental investigation was conducted in 2002 to further characterize groundwater and soils in the southern portion of the site. Volatile organic compounds and benzene, toluene, ethyl benzene and total xylene compounds were detected in soil samples collected from within several known “hot spot” areas, and the groundwater data indicated the plume extended further south than had previously been delineated. Pilot studies were implemented in FY 2003 to treat the groundwater. Monitoring and natural attenuation continued through FY 2007 to further monitor plume movement and to continue the evaluation of the pump and treatment systems. Land use controls have been implemented at this site controlling intrusive activities in soil and groundwater to include prohibition of aquifer use in select areas. The boundary of the aquifer use land use control for this site extends onto the proposed project area for the Counter-Battery Radar Platoon/Battery F, 2<sup>d</sup> Artillery Battalion/Battery G, 2<sup>d</sup> Artillery Battalion/Civil Affairs facilities (Lowder, 2008).

UST Site 1323-3 is located on the southwest corner of Building 1323. The site qualifies for No Further Action status with Land Use Restrictions. Contaminants were used oil. The site is located within the proposed project area for the Counter-Battery Radar Platoon/Battery F, 2<sup>d</sup> Artillery Battalion /Battery G, 2<sup>d</sup> Artillery Battalion/Civil Affairs facilities (Lowder, 2008).

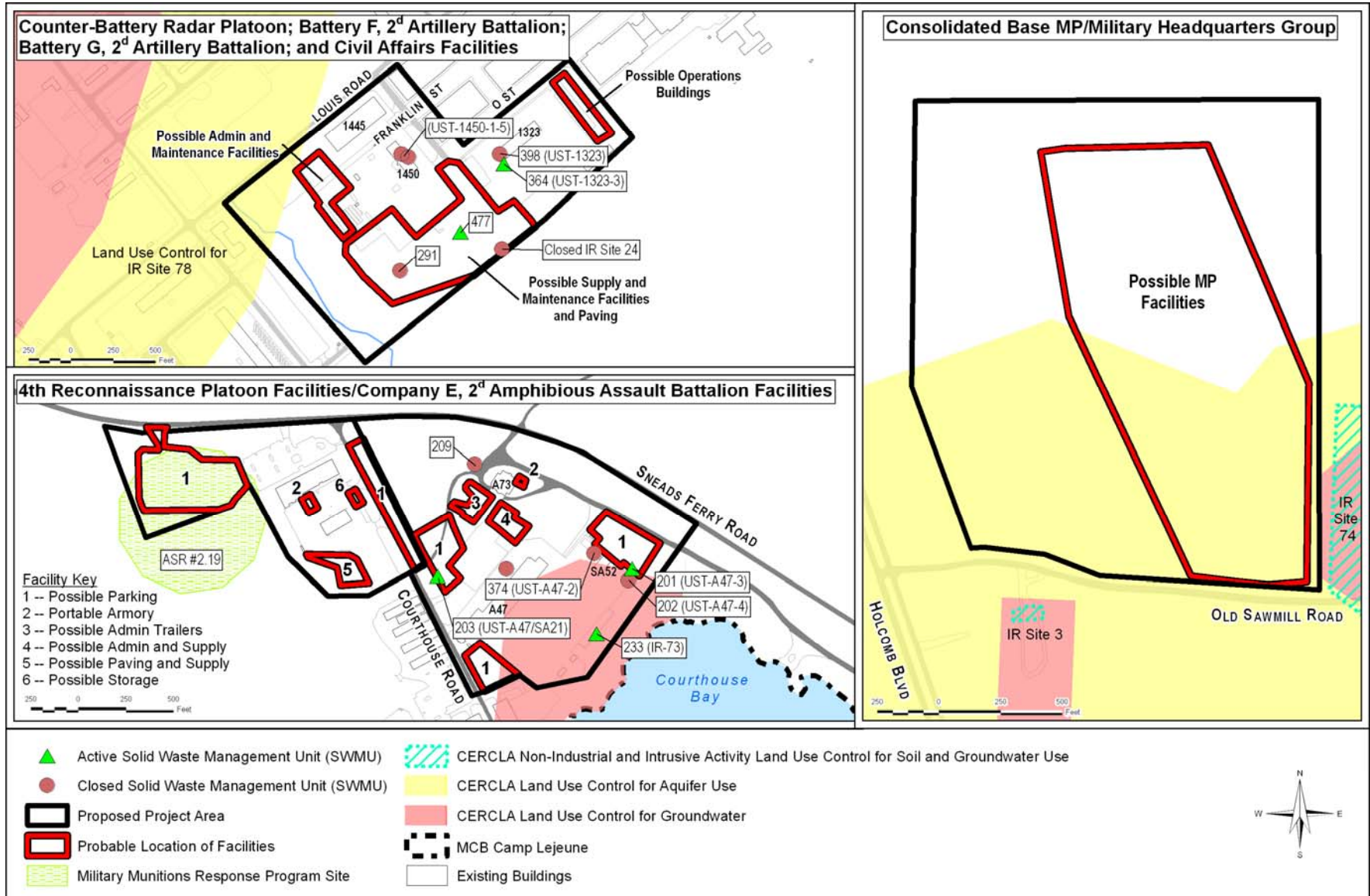


Figure 3-6 Hazardous Waste Sites in Vicinity of Proposed Project Areas

SWMU Site 477, the Dogwood Road Mixed Waste Dump Site, is located approximately 145 m (475 ft) southeast of Building 1450B. It is a mixed waste debris site consisting mostly of concrete and concrete slabs. A project has been funded to remove the concrete debris from the SWMU and should be completed within the summer of 2008. SWMU Site 477 is located within the proposed project area for the Counter-Battery Radar Platoon/Battery F, 2<sup>d</sup> Artillery Battalion/Battery G, 2<sup>d</sup> Artillery Battalion/Civil Affairs facilities (Lowder, 2008).

Closed Installation Restoration Site 24, the Industrial Area Fly Ash Dump, is located approximately 220 m (725 ft) southeast of Building 1450B. The site was used for disposal of fly ash, cinders, solvents, used paint, stripping compounds, sewage sludge and spiractor sludge from the late 1940s to 1980. Installation Restoration Site 24 was closed in the Record of Decision dated 8 September 1994. The site is located within the boundary of the proposed project area for the Counter-Battery Radar Platoon/Battery F, 2<sup>d</sup> Artillery Battalion/Battery G, 2<sup>d</sup> Artillery Battalion/Civil Affairs facilities (Lowder, 2008).

Closed SWMU Site 291, the 034 Ditch, is located approximately 180 m (595 ft) southwest of Building 1450C. Chromium was detected in standing water adjacent to the tank tracks. A No Further Action was approved for the site in April 2005. SWMU Site 291 is located within the proposed project area for the Counter-Battery Radar Platoon/Battery F, 2<sup>d</sup> Artillery Battalion/Battery G, 2<sup>d</sup> Artillery Battalion/Civil Affairs facilities (Lowder, 2008).

Closed UST Site 1323 is located on the northwest corner of Building 1323. Contaminants at the site were hydraulic oil. A No Further Action for the site was received on 25 May 2004. The site is located within the proposed project area for the Counter-Battery Radar Platoon/Battery F, 2<sup>d</sup> Artillery Battalion/Battery G, 2<sup>d</sup> Artillery Battalion/Civil Affairs facilities (Lowder, 2008).

Closed UST Sites 1450, 1-5 are located at Building 1450. Contaminants at the site were diesel fuel, used oil and possibly used diesel fuel. A No Further Action for the sites was received on 28 July 2000 and 27 June 2001. The sites are located within the proposed project area for the Counter-Battery Radar Platoon/Battery F, 2<sup>d</sup> Artillery Battalion/Battery G, 2<sup>d</sup> Artillery Battalion/Civil Affairs facilities (Lowder, 2008).

#### 4<sup>th</sup> Reconnaissance Platoon

MMRP site ASR #2.19, 1000 inch Range, is located south of Sneads Ferry Road (NC 172) and approximately 280 m (725 ft) west of Courthouse Road. This range was used for small arms training in the late 1940s. The range is no longer used for small arms training and is currently being funded for contamination assessment and cleanup. The boundary of MMRP site ASR #2.19 extends within the proposed project area for the 4<sup>th</sup> Reconnaissance Platoon facilities (Lowder, 2008).



Company E, 2<sup>d</sup> Amphibious Assault Battalion

Installation Restoration Site 73, the Courthouse Bay Liquid Disposal Area, is located east of Courthouse Road. The site area encompasses 12.8 ha (31.5 ac) and serves as the Amphibious Vehicle Maintenance Facility which started operations in 1946. The primary contaminants of concern are chlorinated solvents and petroleum products resulting from improper disposal, spills and leaking underground storage tanks. The site is currently within the Feasibility Study Stage of the CERCLA process. Installation Restoration Site 73 is within the boundary of the proposed project area for the Company E, 2<sup>d</sup> Amphibious Assault Battalion facilities (Lowder, 2008).

UST Site A47/SA21, is located approximately 33 m (100 ft) east of Courthouse Road. The UST had a dispenser line extending approximately 198 (650 ft) to the northeast with dispensers positioned intermittently along its length. Contaminants at the site were diesel fuel. Remediation project funding has been submitted but no remedial activities have occurred on site as to date. The site is located within the boundary of the proposed project area for the Company E, 2<sup>d</sup> Amphibious Assault Battalion facilities (Lowder, 2008).

UST Site A47-3 is located approximately 50 m (166 ft) east of Building SA52. A Limited Site Assessment (dated 7 January 2008) with a recommendation for a No Further Action was submitted to the NCDENR. NCDENR requested additional soil sampling be conducted. MCB Camp Lejeune is currently in the process of conducting the requested soil samples. Contaminants at the site are diesel fuel. UST Site A47-3 is located within the boundary of the proposed project area for the Company E, 2<sup>d</sup> Amphibious Assault Battalion facilities (Lowder, 2008).

Closed SWMU Site 209, the Former SA22-Pile, is located near Building SA 21. The site contained petroleum, oil and lubricant contaminated soils. The soil pile was removed and a No Further Action was approved in July 1996. The site is located within the boundary of the proposed project area for the Company E, 2<sup>d</sup> Amphibious Assault Battalion facilities (Lowder, 2008).

Closed UST Site A47-2 is located to the west of Building SA52. Contaminants at the site were used oil. A No Further Action was received on 20 February 2001. The site is located within the boundary of the proposed project area for the Company E, 2<sup>d</sup> Amphibious Assault Battalion facilities (Lowder, 2008).

Closed UST Site A47-4 is located near the entrance gate of the fenced compound for Building A-47. Contaminants at the site were diesel fuel. A No Further Action was received on 13 January 2005. The site is located within the boundary of the proposed project area for the Company E, 2<sup>d</sup> Amphibious Assault Battalion facilities (Lowder, 2008).

Consolidated Base MP/Military Headquarters Group MP Logistics Command Element

Installation Restoration Site 74, the Mess Hall Grease Disposal Area, is located north of Old Saw Mill Road, approximately 0.8 km (0.5 mi) east of Holcomb Boulevard. During the 1950s through the early

1960s, grease from the mess hall was reportedly taken to the area and disposed in trenches. It was also reported that drums containing polychlorinated biphenyls and pesticide-soaked rags were taken to the site and buried. Chemical training agents in the form of test kits were also reportedly taken to this site. The final Record of Decision for this site was signed on 5 December 1995. The selected remedy for Installation Restoration Site 74 includes long-term groundwater monitoring and land use controls, including those that prohibit development of the site, and restrictions on the use of the groundwater as a potable water supply. The requirements for completing the monitoring program at this site were achieved in 1998. Installation Restoration Site 74 was closed as an Installation Restoration Site in July 2006; however, the dump site is still under the control of the Department of the Army due to Chemical Warfare Materials (Lowder, 2007 and 2008). Although this site is located outside of the proposed project area for the Consolidated Base MP/Military Headquarters Group MP Logistics Command Element facilities, the CERCLA land use control restricting soil disturbance is located in close proximity to the eastern side of the proposed project area. Also, the land use control restricting aquifer use extends onto the proposed project area for these facilities.

Installation Restoration Site 3, the Old Creosote Plant, is located just south of Old Saw Mill Road. The site encompasses approximately 2 ha (5 ac) in size. Remnants of a former creosote plant, including the chimney, concrete pads, and train rails, are present in the southern portion of the site. The creosote plant reportedly operated from 1951 to 1952 to supply treated lumber during construction of the MCB Camp Lejeune Railroad. The former sawmill, which supplied the cut timbers for creosote treatment, was reportedly located in the cleared area in the northern portion of the site. Two investigations have been conducted at this site, which determined the presence of volatile organic compounds and polycyclic aromatic hydrocarbons in the groundwater and soil. The final remedy, which included removal and disposal of the polycyclic aromatic hydrocarbons-contaminated soil, was selected and implemented in FY 2000. The final amended Record of Decision was signed on 20 June 2000. Land use controls at the site include restrictions on aquifer use. Annual monitoring of groundwater at Installation Restoration Site 3 has not been completed. The site is still under Long Term Monitoring per the Record of Decision. The boundary of the land use control for this site, which restricts use of the underlying aquifer, extends onto the proposed project area for the Consolidated Base MP/Military Headquarters Group MP Logistics Command Element facilities (Lowder, 2007 and 2008).

## **4.0 ENVIRONMENTAL CONSEQUENCES**

This chapter presents an analysis of the potential impacts upon various components of the environment that could result from the proposed action. The proposed action would accommodate immediate increases in Marine forces at MCB Camp Lejeune, North Carolina in a combination of existing facilities or newly constructed facilities until the decision to construct permanent facilities for these Marines is made. Use of existing and newly constructed facilities would expedite the placement and accommodation of incoming Marines at MCB Camp Lejeune in support of the Marine Corps Grow the Force initiative and satisfy the immediate requirements to place incoming forces per the Presidential proposal authorized by Congress. This chapter discusses the potential impacts associated with the proposed action and the No Action Alternative.

As previously mentioned in Chapter 1, a separate EIS will be prepared to address the affected environment and potential environmental impacts of the proposed *permanent assignment* of Marines at MCB Camp Lejeune and other Marine Corps installations. Since this EA focuses on the proposed *construction activities* associated with the temporary increase of Marines at MCB Camp Lejeune, several resources are discussed only in Section 5, Cumulative Effects including: Socioeconomics and Environmental Justice; Community Facilities and Services; Traffic and Transportation; and Utilities and Infrastructure because the proposed construction activities would not affect or would have negligible impacts on these resources (see section 1.4.2).

### **4.1 LAND USE AND COASTAL ZONE MANAGEMENT**

#### **4.1.1 Land Use**

##### **4.1.1.1 Proposed Action**

The total area associated with the proposed project areas for all of the temporary facilities is approximately 72 ha (177 ac) but the total maximum area required for facility layout is approximately 21 ha (52 ac). Of the 21 ha (52 ac) required for facility layout, the amount of new disturbance could range from approximately 8 ha (20 ac) to 15 ha (38 ac), depending upon final design layout. Many of the temporary buildings would be located on or near previously or recently disturbed land and co-located with their parent command; however, the proposed location for the Consolidated Base MP/Military Headquarters Group MP Logistics Command Element is undeveloped and generally characterized by mixed pine and hardwood forest. Construction of the temporary facilities would result in a change to some of the project areas from mixed pine and hardwood forest to developed areas.

As described in Section 3.1.1, Land Use, the proposed project areas are currently designated as several different land uses. The proposed action would generally be compatible with existing and surrounding land use designations. MCB Camp Lejeune would coordinate internally with the Training and Operations Division to ensure that the proposed location for the Consolidated Base MP/Military Headquarters Group MP Logistics Command Element facilities would not interfere with ongoing training and operations. Although internal coordination would be required, the proposed project area for these facilities would be

consistent with the surrounding land use designation, as some training activities for the military canines would occur in this area.

There are approximately 38,445 ha (95,000 ac) of managed forested land at MCB Camp Lejeune, most of which is used for military training (MCB Camp Lejeune, 2007a). The loss of approximately 15 ha (38 ac) of forested area would be 0.04 percent of the remaining forested area within the Base. Please see Section 4.5.4, Vegetation, for a more detailed analysis of the types of forest vegetation that would be removed as a result of implementing the proposed action.

The permanent conversion of forested areas to developed areas would result in a loss of future timber revenues. The proceeds from the sale of forest products on MCB Camp Lejeune are used solely for forest management such as wildland fire suppression and timber management. Forest management on MCB Camp Lejeune serves the USMC mission by supporting natural resource stewardship programs that maintain the sustainability of MCB Camp Lejeune's training environment.

The proposed projects would not change the overall land use at the installation and the actions are consistent with the operations currently taking place at MCB Camp Lejeune. Only a small percentage of forested land would be lost and only one proposed project, the Consolidated Base MP/Military Headquarters Group MP Logistics Command Element, would affect a largely undeveloped tract of forest. Therefore, there would not be adverse impacts to land use as a result of implementing the proposed action.

#### 4.1.1.2 No Action Alternative

There would be no impact to land use under the No Action Alternative. Land use patterns would not change, and the temporary facilities would not be constructed.

### **4.1.2 Coastal Zone Management**

#### 4.1.2.1 Proposed Action

Demands placed on lands and waters of the coastal zone from existing economic development and population growth in the region require that new projects or actions be carefully planned to avoid stress on the coastal zone. This planning involves a review of state and local enforceable policies, which are designed to provide effective protection and use of land and water resources of the coastal zone.

The USMC has prepared a Record of Negative Determination and has concluded that the proposed action would not affect North Carolina's coastal zone. Following is a *brief summary* of the Record of Negative Determination. Additional details and analysis are provided in Appendix B of this EA.

As detailed in the Record of Negative Determination (Appendix B), there are eleven enforceable policies issued by North Carolina for the coastal area. Of these eleven, two policies are applicable to the proposed action.

- **Mitigation Policy (15A NCAC 7M .0700)** – Implementing the proposed action along with mitigation measures to minimize potential environmental impacts would result in no impact to the coastal zone. Impacts to natural resource areas would be mitigated for as outlined in Section 4.7 of this EA.
- **Coastal Water Quality Policies (15A NCAC 7M .0800)** – Stormwater runoff would be managed and controlled in accordance with the proposed action’s state approved Erosion and Sedimentation Control Plan, state issued Stormwater Management Permit, and the effective MCB Camp Lejeune’s NPDES requirements. As a result, the proposed action would not impact coastal water quality.

In addition to the eleven enforceable policies, there are also four categories of AECs afforded protection under North Carolina’s CAMA because they are areas of statewide concern within the coastal area. The following paragraphs summarize the applicability of policies designed to protect AECs and the determination of no impact to North Carolina’s coastal zone. Further detail is provided in Appendix B of this EA.

- **Estuarine and Ocean Systems (15A NCAC 07H .0200)** – The proposed project areas are not located directly within any estuarine or ocean systems. Palustrine wetlands are located in each of the four project areas; however the locations for the temporary facilities have been designed so as to avoid construction within wetlands. Stormwater management plans, including the use of best management practices (BMPs) during construction such as silt fences and hay bales, would control surface water runoff into adjacent waterways. Therefore, the proposed action is not expected to cause any runoff that would impact surface waters or wetlands. Public rights for navigation and recreation of public trust waters would be protected as no loss of public trust waters would result from this proposed project.
- **Ocean Hazard Areas (15A NCAC 07H .0300)** – The proposed project areas are not within any ocean hazard areas; therefore, policies on ocean hazard areas are not applicable.
- **Public Water Supplies (15A NCAC 7H .0400)** – There are no public water supply wells, well fields, or small surface water supply watersheds within the project areas; therefore, policies on protecting public water supplies are not applicable.
- **Natural and Cultural Resource Areas (15A NCAC 7H .0500)** – The proposed project area for the Consolidated Base MP/Military Headquarters Group MP Logistics Command Element facilities is located in an area identified by MCB Camp Lejeune as future habitat for the red-cockaded woodpecker. Approximately 4 ha (10 ac) of future habitat could be cleared in this vicinity, depending on final design layout of the proposed facilities. However, as described in Section 4.5.6, removal of this habitat is not expected to adversely affect the species. The area does not currently support any red-cockaded woodpeckers. Prior to implementing the proposed action, MCB Camp Lejeune would coordinate with the USFWS to ensure that threatened and

endangered species would not be adversely affected. In addition, several state protected species may occur within the proposed project areas. There are no cultural resources located within the proposed project areas; therefore there would be no impacts to cultural resources.

As the proposed action would not be expected to affect the stability of wildlife populations on Base and would not affect cultural resources, the proposed action would have no impact on natural and cultural resource AECs.

Implementing the proposed action would not affect the coastal zone in North Carolina. The USMC, after conducting a thorough analysis, has determined that implementing the proposed action would not result in any impacts to North Carolina's coastal zone (see Appendix B for the Record of Negative Determination).

#### 4.1.2.2 No Action Alternative

Coastal zone management considerations would not be affected under the No Action Alternative. Other new projects at MCB Camp Lejeune would continue to be carefully planned to avoid stress on the coastal zone. If this alternative were to be implemented, the proposed temporary facilities would not be constructed at MCB Camp Lejeune.

## **4.2 Air Quality**

### **4.2.1 Proposed Action**

Construction activities associated with the proposed action would result in minor, temporary increases in criteria pollutant emissions. The principal air quality concerns during construction would be fugitive dust emissions and mobile emissions from construction vehicles and equipment used to access the project areas. However, construction effects would be temporary and would be controlled using standard management practices. Mitigation efforts to minimize dust emissions would include:

- Water all active construction areas at least twice daily;
- Cover all trucks hauling soil, sand, and other loose materials *or* require all trucks to maintain at least 0.6 m (2 ft) of freeboard;
- Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas at construction sites;
- Limit traffic speeds on unpaved roads to 24 kilometers per hour (15 miles per hour); and
- Replant vegetation with native species in disturbed areas as quickly as possible.

Construction impacts would be short-term in nature, lasting only for the duration of the temporary facility construction. Although emissions would increase during construction activities, the percentage increase on a county-wide basis would only result in negligible impacts to the regional air quality. The proposed action would not change the attainment status of the region. Operationally, the proposed temporary facilities would not change air emissions. Although conceptual designs for the proposed temporary facilities do not indicate a need for any new permanent sources of air emissions, should the need for

permanent sources, such as generators and/or boilers, be identified to support operation of the temporary facilities, MCB Camp Lejeune would notify the NCDENR, Division of Quality prior to installation to determine if the Base's existing Clean Air Act Title V Permit would require modification.

In summary, the proposed action would not violate standards for any of the criteria pollutants. Short-term construction related impacts would be minimized through the measures discussed previously. Therefore, implementation of the proposed action would not adversely impact air quality in or around MCB Camp Lejeune.

#### **4.2.2 No Action Alternative**

Operational facilities would remain the same under the No Action Alternative. Accordingly, levels of air emissions currently generated by activities on the Base and existing air quality conditions at MCB Camp Lejeune would remain roughly the same. Due to the influx in temporary personnel (as mandated) there would be a minor increase in emissions from privately owned vehicles. The Southern Coastal Plain Intrastate Air Quality Control Region is expected to remain in attainment for all criteria pollutants.

### **4.3 Noise**

#### **4.3.1 Proposed Action**

Under the proposed action, minor, temporary impacts to the noise environment in the vicinity of the proposed project areas for the temporary facilities would occur. The use of heavy equipment for site preparation and development (e.g., vegetation removal, grading, and back fill) could potentially generate noise levels above average ambient noise levels. However, noise levels would be typical of standard construction activities, and would typically occur only during normal working hours (i.e., between 7 AM and 5 PM, Monday through Friday). Furthermore, sound levels could be reduced through the use of equipment sound mufflers. The operation and construction of the proposed temporary facilities would not generate excessive noise levels and the noise environment at MCB Camp Lejeune would continue to be dominated by training and operations. The closest sensitive noise receptor to any of the proposed project areas is located approximately 1 km (0.62 mi) away and therefore would likely not be affected by the temporary noise generated from construction activities.

#### **4.3.2 No Action Alternative**

Under the No Action Alternative, existing noise conditions at MCB Camp Lejeune would remain relatively unchanged. Regarding military training conducted at the Base, quiet hours would continue to be followed under normal training conditions for artillery, mortars, demolitions, and large caliber weapons from midnight to 6 AM daily and from 8 AM to noon on Sundays (MCB Camp Lejeune, 2003).

## **4.4 Cultural Resources**

### **4.4.1 Proposed Action**

Based on predictive models and previous field surveys, no archaeological sites have been identified as occurring within the project areas. If during construction and site grading any archaeological resources were discovered, the Director, Environmental Management would be notified. The Director, Environmental Management would order actions in the vicinity halted and the area marked and would immediately notify the Base archaeologist. Therefore, historic properties at MCB Camp Lejeune would not be affected as a result of implementing the proposed action.

### **4.4.2 No Action Alternative**

Cultural resources would not be affected under the No Action Alternative because there would be no construction or ground disturbing activities. Development at MCB Camp Lejeune would continue to be carried out in accordance with the Base Integrated Cultural Resource Management Plan, which addresses National Historic Preservation Act compliance and provides guidance on management of historic properties.

## **4.5 Natural Resources**

### **4.5.1 Topography and Soils**

#### **4.5.1.1 Proposed Action**

The proposed action would not result in adverse impacts to topography and soils. Minor impacts to existing topography would occur during clearing and grading of the proposed project areas for the temporary facilities. During construction, soils at the sites would be affected through clearing, grading, compaction, and potential erosion. Erosion impacts would be temporary and would be minimized by employing BMPs for soil erosion and sedimentation control at the construction sites, such as silt fencing, sediment traps, application of water sprays, and revegetating disturbed soils with native plants. Most of the affected soils would eventually be covered with impervious surfaces or vegetation, preventing long-term erosion. Prior to construction, approval would be obtained by the NCDENR on all Erosion and Sediment Control Plans for the proposed action. Additionally, as briefly discussed in Chapter 2, construction of the proposed Consolidated Base MP/Military Headquarters Group MP Logistics Command Element facilities would also include construction of a new cemetery for the military canines. If required, MCB Camp Lejeune would coordinate with the appropriate health department or state agency to acquire a permit for construction of the cemetery to ensure that the soils in the proposed project area are suitable for this type of construction.

#### **4.5.1.2 No Action Alternative**

The No Action Alternative would not affect topography or soils at MCB Camp Lejeune. Without construction of the temporary facilities, soil profiles and vegetative cover would remain intact at the proposed project areas.



## **4.5.2 Water Resources and Stormwater**

### **4.5.2.1 Proposed Action**

Construction of the proposed temporary facilities would have a minimal adverse effect on surface waters. Although construction would not occur within any surface water feature, the increase in impervious surfaces that would result from implementing the proposed action would cause an increase in stormwater runoff. MCB Camp Lejeune would adhere to standards and BMPs in the Base's Storm Water Pollution Prevention Plan both during construction and during the operation and maintenance of the temporary facilities to minimize stormwater runoff into nearby surface waters. Short-term practices could include erosion and sedimentation controls and temporary sedimentation basins. Long-term BMPs, as needed, would be developed as part of the site design process, such as stormwater management ponds. The BMPs would control erosion and would ensure removal of suspended particulates prior to surface runoff entering the New River (Courthouse Bay) and two unnamed tributaries located within and in the vicinity of the proposed project areas. The use of BMPs and erosion and sediment controls would minimize potential adverse effects to the primary nursery area which is located adjacent to the proposed project area for the 4<sup>th</sup> Reconnaissance Platoon facilities. Additionally, MCB Camp Lejeune would revegetate disturbed areas with native plants and shrubs to the maximum extent practicable to minimize soil erosion after land disturbing activities take place. This vegetation would serve to aid in absorption and filtering stormwater runoff.

The proposed construction activities would not affect groundwater, since all site clearing and grading would generally be limited to surface disturbance and there would be no excavation activities taking place that would reach groundwater. MCB Camp Lejeune would prevent contamination of all water resources by properly storing and maintaining hazardous materials in appropriate storage lockers in compliance with Marine Corps Order P5090.2A, Chapter 20 and the Base's 2002 Stormwater Pollution Prevention Plan (DoN, 2002). Lastly, MCB Camp Lejeune's current Stormwater Phase I permit was issued in 2004. When this permit is renewed again, a Phase II permit will be issued (sometime within 2008). All new facilities, such as those included in the proposed action, would be evaluated for compliance with the new permit requirements to determine if they need to be included.

### **4.5.2.2 No Action Alternative**

Neither surface water nor groundwater would be affected under the No Action Alternative because the temporary facilities would not be constructed. Groundwater levels and water quality would remain in their current condition.

## **4.5.3 Wetlands and Floodplains**

### **4.5.3.1 Proposed Action**

Palustrine system wetlands exist within all of the proposed project areas for the temporary facilities and floodplains exist within three of the proposed project areas. No estuarine wetlands exist in the project areas. No construction would occur in wetlands; however, construction would occur within the 100-year

floodplain. After conceptual design layouts for the proposed temporary facilities are finalized, should MCB Camp Lejeune determine that construction in wetlands is unavoidable, wetland protection measures as outlined in the *Memorandum of Agreement Between the Department of the Army and the Environmental Protection Agency, The Determination of Mitigation under the Clean Water Act Section 404 (b)(1) Guidelines* (United States Army Corps of Engineers and USEPA, 1990) would be followed:

- **Avoidance** - avoid potential impacts to the maximum extent practicable;
- **Minimization** - take appropriate and practicable steps to minimize the adverse impacts (e.g., limit the anticipated impact to an area of the wetland with lesser value than other areas, or reduce the actual size of the impacted area); and
- **Compensatory mitigation** - take appropriate and practicable compensatory mitigation action for unavoidable adverse impacts that remain after all appropriate and practicable minimization has been made (e.g., create a new wetland area, restore existing degraded wetland, or enhance low value wetland).

Although 5 ha (13 ac) of wetlands are located within the proposed project areas, MCB Camp Lejeune conceptual layouts for the proposed temporary facilities avoid construction in wetlands as previously described.

Wetlands act as an efficient and cost-effective filtration system for waters making their way to the ocean and provide vital protection of the quality of coastal waters because they remove upstream pollutants. Moreover, they provide protection from floods by absorbing enormous amounts of water and provide shoreline-erosion protection by the plants that grow in the wetlands. Wetlands also provide essential habitat for numerous diverse species ranging from fish to birds to mammals to amphibious animals. Wetlands provide a diversity of habitats for varying foods, nesting sites, resting areas and escape cover (NCDENR, 2008). Since the proposed action would not result in any construction in wetlands, the overall function of the wetlands in the vicinity of the proposed project areas would not be adversely affected. Additionally, as described previously under Section 4.5.2, stormwater runoff would be managed and controlled, thereby preventing siltation of nearby wetland areas. BMPs (such as siltation fencing and stormwater management structures) would be utilized in accordance with an approved erosion and sediment control plan.

Adverse impacts to wetlands and floodplains are not expected. Wetland protection measures would be followed and proposed construction activities have been designed to avoid construction within wetlands. As shown in Figure 2-3, some paving would occur in floodplains but impacts would be minor. The proposed temporary facilities have been designed to avoid impacts to floodplains to the maximum extent practicable.

#### 4.5.3.2 No Action Alternative

Wetlands and floodplains would not be affected under the No Action Alternative because the temporary facilities would not be constructed.

#### **4.5.4 Vegetation**

##### **4.5.4.1 Proposed Action**

The loss of approximately 15 ha (38 ac) of forested area would be 0.04 percent of the remaining forested area within the Base. Approximately 4 ha (10 ac) of habitat designated by MCB Camp Lejeune as future red-cockaded woodpecker foraging habitat would be removed as part of the proposed construction of the Consolidated Base MP/Military Headquarters Group MP Logistics Command Element facilities.

Despite the removal of forested habitat, no long term impacts to vegetation are expected. MCB Camp Lejeune's Forest Management Program provides for forest protection and reforestation, threatened and endangered species management, and sustainable timber management on 38,445 ha (95,000 ac). Although land would be cleared to accommodate the new temporary facilities, the scale of land clearing in comparison to the current extent of managed forests on the Base or the amount of resources remaining for management after project construction would be minor. Table 4.5-1 shows the percent of the various types of forest that would be removed from implementation of the proposed action compared to the total amount of similar habitat on-base. As the table demonstrates, the overall impact to forested areas would be minor.

Since all of the proposed temporary facilities would be co-located with their parent command, with the exception of the Consolidated Base MP/Military Headquarters Group MP Logistics Command Element facilities, the proposed action would not result in adverse impacts from forest habitat fragmentation. Although the consolidated kennel facilities would be constructed in an undeveloped forested area, there would still be sufficiently large forested areas surrounding the new facilities that would not adversely affect vegetation such that movement of wildlife species would be impeded due to a lack of contiguous habitat.

##### **4.5.4.2 No Action Alternative**

Vegetation would not be affected under the No Action Alternative because the temporary facilities would not be constructed. The Base's Forest Management Program would continue to support the military mission, enhance ecological integrity of forestlands, and generate revenue to support active forest management.

#### **4.5.5 Wildlife**

##### **4.5.5.1 Proposed Action**

The proposed action would result in minor adverse impacts to wildlife. The removal of mixed pine and hardwood forested and ground cover habitat in the proposed project areas would cause forest and ground cover dwelling birds, mammals, reptiles, and amphibians to be permanently displaced once the land is cleared and disturbed. Less mobile species at the project area would experience direct mortality. Wildlife residing in the periphery of the proposed construction sites may be temporarily displaced as a result of the noise and activity of the construction. The proposed action would remove approximately 4 ha (10 ac) of

**Table 4.5-1 Forest Types and Percent Loss of Various Forest Habitats**

Temporary Facility	Forest in Project Area	Forest Impacted in Project Area	Percent of Similar Forest Impacted due to Proposed Action	Type of Forest (Ecologic Classification)	Overstory Description	Understory Description	Age of Forest
Company E, 2 <sup>d</sup> Amphibious Assault Battalion	4 ha (10 ac)	0.5 ha (1.3 ac)	0.06%	Excessively drained, sandy, maritime influenced pine-oak woodland. 764 ha (1,889 ac) total on-base	Scattered loblolly pine, sweetgum, and red maple	Sweetgum, red maple, American holly, and dogwood	54 years old
4 <sup>th</sup> Reconnaissance Platoon	3 ha (8 ac)	1.5 ha (3.6 ac)	0.5%	North: Excessively drained, sandy, maritime influenced pine-oak woodland. South: Poorly drained, mucky, small stream swamp-mostly hardwood with some pine. 256 ha (632 ac) total on-base	North: Scattered loblolly pine, sweetgum, and red maple South: Red maple, sweetgum, and blackgum	North: Red maple and sweetgum South: Red maple, sweetgum, and blackgum and tall cane.	54 years old
Counter-Battery Radar Platoon/Battery F, 2 <sup>d</sup> Artillery Battalion/Battery G, 2 <sup>d</sup> Artillery Battalion/Civil Affairs	4 ha (11 ac)	1.3 ha (3.1 ac)	0.3%	Well-drained, sandy, pine-hardwood slope-mostly hardwood 430 ha (1,062 ac) total on-base	Red oak and sweet gum	Sweetgum, red oak, and dogwood. Wax myrtle and Vitus spp. (grapevines)	71 years old
Consolidated Base MP/ Military Headquarters Group MP Logistics Command Element	26 ha (65 ac)	4 ha (10 ac) to 12 ha (30 ac)	0.035% (0.035% of future red-cockaded woodpecker habitat partitions on-base)	Well-drained to moderately well-drained, sandy, longleaf pine savanna 11,252 ha (27,804 ac) total on-base	Loblolly pine	Maple, sweetgum, red oak, dogwood, and American holly	18 years old (45%), 65 years old (55%)

Source: MCB Camp Lejeune GIS data and Marshburn, 2008.

forest designated by MCB Camp Lejeune as future red-cockaded woodpecker foraging habitat, but this is not expected to result in adverse impacts to the species (see Section 4.5.6.1 for additional discussion).

There could be minor impacts to movement of wildlife species within MCB Camp Lejeune as a result of implementing the proposed action. The Consolidated Base MP/Military Headquarters Group MP Logistics Command Element facilities are the only component of the proposed action that could impact wildlife movement, as these facilities would be constructed within a relatively undisturbed tract of forest and security fencing would be installed around the facilities. While there would be an adverse impact to individual animals and an obstruction to the movement of some large mammal species under the proposed action, these impacts are not expected to affect the stability of wildlife populations at the Base. Any additional security fencing that would be required would be designed so as to reduce potential restrictions to wildlife movement on the Base.

Mobile wildlife species residing in the primary nursery area located adjacent to the proposed project area for the 4<sup>th</sup> Reconnaissance Platoon facilities would relocate during the construction activities. As previously described, stormwater runoff would be managed and controlled, thereby preventing sedimentation within the primary nursery area.

As stated in Chapter 3 of this EA, the Department of Defense operates under a Memorandum of Understanding with the USFWS for MBTA coordination on activities, with specific requirements placed on the Department of Defense when proposed actions are likely to affect migratory birds. MCB Camp Lejeune has identified the migratory bird species of concern that have the potential to occur in the vicinity of the proposed action. These species of concern are listed in Appendix A of this EA. MCB Camp Lejeune has determined that the proposed action addressed within this EA would have minor impacts to migratory birds, and that this impact would occur due to destruction of habitat. Population level effects would not occur because the proposed action area represents a minor portion of the habitat available on a Base-wide and regional basis. Therefore, the proposed action would be compliant with the intent of the Memorandum of Understanding and implementation of the proposed action would not require prior coordination with the USFWS regarding MBTA issues.

#### 4.5.5.2 No Action Alternative

The No Action Alternative would not result in adverse impacts to wildlife. Wildlife throughout the Base would continue to be managed under the Wildlife Management Program, with a strategy of restoring and maintaining native landscapes in an ecosystem and adaptive management framework.

### **4.5.6 Threatened and Endangered Species**

#### 4.5.6.1 Proposed Action

The proposed action may affect, but is not likely to adversely affect any federally listed threatened or endangered species, as none are known to occur in the proposed project areas. Although construction of the Consolidated Base MP/Military Headquarters Group MP Logistics Command Element facilities

would result in the loss of approximately 4 ha (10 ac) of *future* red-cockaded woodpecker foraging habitat, MCB Camp Lejeune does not expect this loss to jeopardize the Base's ability to support a partition within the proposed project area, maintain sufficient foraging habitat, or to meet the recovery goal of 173 active clusters. Although the proposed project area for the Consolidated Base MP/Military Headquarters Group MP Logistics Command Element facilities could support a red-cockaded woodpecker cluster in the future, there are currently no active clusters in the area.

It is important to note that MCB Camp Lejeune has a management plan in place to help meet the recovery goal of 173 active clusters. As habitat on-base improves through management such as burning, hardwood control, and through aging of the forest, the number of hectares (acres) needed to support a cluster will likely go down. Also as MCB Camp Lejeune has observed in the past, pioneering and budding may lead to unexpected cluster locations as well as higher than planned densities of red-cockaded woodpecker clusters. All of these factors could contribute to an overall increase in the actual number of available partitions, and the likelihood that MCB Camp Lejeune will not only meet, but exceed its recovery goal. MCB Camp Lejeune would consult with the USFWS to obtain concurrence that the proposed action is not likely to adversely affect any federally listed threatened or endangered species.

As described in Section 3.5.6, several other species at risk including state protected species have the potential to occur at MCB Camp Lejeune as well as within the proposed project areas based on habitat requirements of the species. Mobile species would likely relocate during the proposed construction activities but other non-mobile species, if present in the proposed project areas, could experience direct mortality.

#### 4.5.6.2 No Action Alternative

Under the No Action Alternative, threatened and endangered species would not be affected because no construction activities would occur. Protected species and their habitats would continue to be managed under MCB Camp Lejeune's Threatened and Endangered Species Management program for conservation and recovery in accordance with all environmental laws, regulations, terms and conditions in applicable USFWS biological opinions.

## **4.6 Hazardous Materials and Waste**

Hazardous materials, toxic substances, and hazardous wastes are regulated under federal programs administered by USEPA, as well as state and local laws and Department of Defense regulations that address the storage, transportation, and disposal of hazardous materials and wastes. These laws have been established to protect human health and the environment from potential impacts. The significance of impacts associated with hazardous materials and wastes is based on the toxicity of the substance, transportation and storage risk, and the method of waste disposal. Impacts are considered significant if the storage, use, transportation, or disposal of these substances increases human health risks or environmental exposure.

Programs have been established at MCB Camp Lejeune to control entry of hazardous materials to the Base; to safely manage their handling and transportation within the Base; to inform military and civilian employees of their dangers; to minimize the risk of human exposure and release to the environment associated with these substances; and to dispose of these substances in an environmentally sound manner when they are no longer useful.

#### **4.6.1 Proposed Action**

The proposed action would take place near several Installation Restoration sites. In particular, located within the proposed project area for the Counter-Battery Radar Platoon/Battery F, 2<sup>d</sup> Artillery Battalion/Battery G, 2<sup>d</sup> Artillery Battalion/Civil Affairs facilities are Active UST Site 1323-3, SWMU Site 477, Closed Installation Restoration Site 24, Closed SWMU Site 291, and Closed UST Sites 1450, 1-5, and 1323. The proposed action would construct temporary facilities and parking lots in this area. Although the exact location for the new facilities within the project area has not yet been identified, the proposed construction activities would avoid disturbing contaminated soil or groundwater associated with these sites to the maximum extent practicable. In addition, construction activities would not impact groundwater associated with Installation Restoration Site 78. The boundary of the land use control for Installation Restoration Site 78 extends onto the proposed project area for the facilities. This land use control restricts use of the aquifer for potable water supply.

Located within the boundary of the proposed project area for the proposed Company E, 2<sup>d</sup> Amphibious Assault Battalion facilities are Installation Restoration Site 73, Active UST Sites A47/SA21 and A47-3, Closed SWMU Site 209, and Closed UST Sites A47-2 and A47-4. The proposed action would construct facilities and parking lots in this area. Although the exact location for the new facilities within the proposed project area has not yet been identified, facilities would be constructed to avoid disturbing contaminated soil or groundwater associated with these sites to the maximum extent practicable.

The proposed project area for the proposed 4<sup>th</sup> Reconnaissance Platoon facilities overlaps MMRP site ASR #2.19, Small Arms Range. Although the exact location for the new facilities within the proposed project area has not yet been identified, the proposed action would possibly construct a parking lot within the MMRP site boundary. Based on the previous site use as a small arms range, it is not anticipated that unexploded ordnance is present at the MMRP site; however, if soils from the range area leave the site, they must be properly sampled for disposal purposes for metals (particularly lead). Also, contractors performing intrusive activities in that area must be aware of the potential contaminants from small arms range activities and Occupational Safety and Health Administration 40-hour Hazardous Waste Operations and Emergency Response Standard training would be recommended.

The boundary of land use controls restricting use of the aquifer for potable water supply for Installation Restoration Sites 3 and 74 extends onto the proposed project area for the Consolidated Base MP/Military Headquarters Group MP Logistics Command Element facilities. Although the exact location for the MP

facilities within the proposed project area has not yet been identified, the proposed construction activities would not be expected to disturb contaminated groundwater associated with these sites.

For any potentially affected Installation Restoration Site, remediation of any contamination would be completed as needed prior to construction activities. Usual BMPs would be employed in the handling, removal, and disposal of potential hazardous substances. MCB Camp Lejeune would consult with the appropriate Base program managers to establish an appropriate course of action for each proposed construction project to ensure that federal and state agency notification requirements are met and to arrange for agency consultation as necessary where existing Installation Restoration sites would be affected. During the bidding and scoping processes for each project, contractors would be notified of the nature and extent of known or suspected contamination so that they can inform their employees in advance of onsite activities and take appropriate precautions to protect health and safety and prevent the spread of contaminated soil or ground water.

Implementing the proposed action would not result in adverse impacts from hazardous materials, waste management, or existing contaminated sites.

#### **4.6.2 No Action Alternative**

The existing conditions in hazardous materials and waste management and at contaminated sites would not change from baseline conditions under the No Action Alternative. MCB Camp Lejeune would continue with currently scheduled remedial actions and environmental pollution abatement as outlined in the Base Order on *Oil and Hazardous Substance Pollution Prevention and Pollution Abatement Facility Management*. No adverse impacts are expected to hazardous materials and waste management under the No Action Alternative.

#### **4.7 Mitigation Measures**

A variety of mitigation and minimization measures have been developed to minimize potential environmental impacts. The following measures would be implemented as part of the proposed action:

- Avoid site degradation and erosion;
- Minimize offsite environmental impact;
- Use minimum amounts of energy, water, and materials feasible to meet design intent;
- Select energy and water efficient equipment and strategies;
- Use environmentally preferable products and decrease toxicity level of materials used;
- Use renewable energy and material resources;
- Optimize operational performance in order to ensure energy efficient equipment operates as intended;
- Manage construction site and storage of materials to ensure no negative impact on indoor environmental quality of facilities;



- Reduce construction waste through reuse, recycling, and supplier take-back;
- Fugitive dust emissions from construction and demolition would be controlled using standard management practices such as routine sweeping and wetting to reduce air emissions;
- Security fencing would be installed so as to minimize impacts to wildlife movement on-base; and
- Landscaping and revegetation of disturbed areas would occur, and MCB Camp Lejeune would plant native species to the extent practicable.

If during construction and site grading any site of potential historical or archaeological significance is encountered, the Director, Environmental Management would be notified. The Director would order actions in the vicinity halted and the area marked. The Director, Environmental Management would immediately notify the Base archaeologist at telephone (910) 451-7230.

BMPs would be used to avoid and minimize the release of sediments into stormwater, with mitigation plans including both short-term (construction phase) and long-term (project life) features to meet the requirements of the Base's Stormwater Pollution Prevention Plan.

All projects would be designed to avoid and minimize impacts to wetlands and waters of the United States. In addition, wetland and stream mitigation would be conducted to fulfill all permit conditions, should construction in these resource areas be determined to be unavoidable.

All projects would be designed to avoid impacting any Installation Restoration sites. Should this be unavoidable, MCB Camp Lejeune would consult with the appropriate Base Program Managers to establish an appropriate course of action for each proposed construction project to ensure that federal and state agency notification requirements are met and to arrange for agency consultation as necessary where existing Installation Restoration sites would be affected.

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## **5.0 CUMULATIVE EFFECTS**

### **5.1 Introduction and Analysis Methods**

Cumulative impacts are defined by the Council on Environmental Quality in 40 Code of Federal Regulations 1508.7 as:

Impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions.

A stepwise process was used to systematically examine the potential cumulative effects of the proposed action in combination with other past, present, and reasonably foreseeable future activities. This approach is consistent with the guidance provided by *Considering Cumulative Effects Under the National Environmental Policy Act* (Council on Environmental Quality, 1997), *Consideration Of Cumulative Impacts In EPA Review of NEPA Documents* (USEPA, 1999), and *Guidance on the Consideration of Past Actions in Cumulative Effects Analysis* (Council on Environmental Quality, 2005).

First, the region of influence for identification of other actions with potential cumulative effects was defined. Given the extent and nature of the proposed action, the focus for the region of influence for cumulative impacts was defined as MCB Camp Lejeune. Second, other past, present, and reasonably foreseeable future activities actions at MCB Camp Lejeune with the potential for additive or interactive impacts were identified. Interactive effects can be either countervailing (i.e., where the net adverse cumulative effect is less than the sum of the individual effects) or synergistic (i.e., where the net adverse cumulative effect is greater than the sum of the individual effects). In accordance with the Council on Environmental Quality guidance (Council on Environmental Quality, 2005), the emphasis is placed on present and future actions. Once these projects were identified, the third step was to examine the potential for cumulative impacts on various environmental resource areas (Section 5.3). As a result of this analysis process, it was determined that there were potential cumulative effects for the following resources: Socioeconomics, Community Facilities and Services, Utilities, and Transportation and Traffic. Fourth, because these resources were not analyzed in detail in Chapter 3 (Affected Environment), relevant existing conditions for these resources is presented (Section 5.4). Fifth and lastly, the potential for cumulative impacts to each of these resource areas is discussed (also in Section 5.4). The potential cumulative impacts to these resource areas are evaluated at a level commensurate with that potential for cumulative impact.

Because of the magnitude of impact, it is worth reiterating the relationship between this EA and the *EIS for Growing the Force at MCB Camp Lejeune, MCAS New River, and MCAS Cherry Point* here. As noted in Section 1.1 and 1.4.2, this EA for temporary construction activities at MCB Camp Lejeune focuses on construction impacts for the proposed *temporary beddown* of the immediate increase of incoming Marines at MCB Camp Lejeune while the *EIS for Growing the Force at MCB Camp Lejeune, MCAS New*

*River, and MCAS Cherry Point* will evaluate in detail the environmental impacts of the *permanent assignment* of Marines at MCB Camp Lejeune and other Marine Corps installations in North Carolina. This growth, to be evaluated in detail in the EIS, includes 9,900 Marine Corps and civilian personnel in North Carolina: 7,700 at MCB Camp Lejeune, 1,400 at MCAS New River, and 800 at MCAS Cherry Point.

## **5.2 Other Actions with Potential for Cumulative Effects**

Past and future projects at MCB Camp Lejeune that could have additive or interactive direct or indirect effects with the proposed action of the *temporary beddown* facilities are discussed below. These projects, which are located at MCB Camp Lejeune with the exception of the Eastern North Carolina Military Growth Task Force, are neither dependent on the proposed action nor part of it. Other projects located at MCB Camp Lejeune that do not have the potential to add or interact cumulatively with the impacts of the proposed action are not addressed in this EA.

Table 5.2-1 summarizes the action identified, the status of the action, the level of NEPA associated with each project (as applicable), and the rationale for including this cumulative effects analysis. The rationale for inclusion of most of these actions in the cumulative effects analysis centers around the overall growth in manpower at MCB Camp Lejeune in recent years.

### **5.2.1 MCB Camp Lejeune Recent Past Actions**

*4th Marine Expeditionary Brigade Complex*-The EA for the 4th Marine Expeditionary Brigade Complex evaluated the impacts of constructing approximately 33,987 sq m (365,833 sq ft) of facilities, which were designed to accommodate 1,032 new military personnel in the 4th Marine Expeditionary Brigade at MCB Camp Lejeune. The 4th Marine Expeditionary Brigade was disestablished before the complex was constructed; however, the personnel increases under the proposed action did occur at MCB Camp Lejeune, and were absorbed into the 9<sup>th</sup> Marines (MCB Camp Lejeune, 2004).

*Force Structure Review Group Initiatives*-The EA for the Force Structure Review Group Initiatives for FY 2005 assessed the impacts of constructing 57,400 sq m (617,900 sq ft) of facilities and modifying several existing facilities, all of which were designed to accommodate 2,100 new military personnel at MCB Camp Lejeune. These personnel comprised two new infantry battalions, a new light armored reconnaissance company, and a new reconnaissance company and platoon. This EA resulted in a Finding of No Significant Impact determination and facilities are currently under construction (MCB Camp Lejeune, 2005a).

**Table 5.2-1 Other Actions at MCB Camp Lejeune**

<b>Action</b>	<b>Level and Status of NEPA</b>	<b>Rationale for Including in this Cumulative Effects Analysis</b>
<b>MCB Camp Lejeune Recent Past Actions</b>		
4th Marine Expeditionary Brigade Complex (FY 2004-2005)	EA /FONSI Completed	Some of the growth in manpower at MCB Camp Lejeune is associated with this action
Force Structure Review Group Initiatives (FY 2005-2006)	EA/FONSI Completed	Some of the growth in manpower at MCB Camp Lejeune is associated with this action
Marine Special Operations Command Complex (FY 2008)	EA/FONSI Completed	Some of the growth in manpower at MCB Camp Lejeune is associated with this action
<b>MCB Camp Lejeune Ongoing and Future Actions</b>		
Wastewater System Upgrades and Modifications	EA Underway	Includes infrastructure improvements needed to accommodate growth
Security Gate Upgrades, Road Improvements, Landfill Expansion, and Relocation of Skeet Range	EA Underway	Includes infrastructure and utilities improvements needed to accommodate growth
Wallace Creek Regimental Area Complex	EA Underway	Includes BEQs, maintenance, and office facilities needed to accommodate growth
Hadnot Point Bachelor Enlisted Quarters	EA Underway	Includes BEQs needed to accommodate growth
Public Private Venture Housing (Phases IV and V)	EA Underway	Includes family housing needed to accommodate growth
Grow the Force ( <i>permanent beddown</i> )	EIS Underway	Includes renovation and new construction projects needed to accommodate base-wide growth
<b>MCB Camp Lejeune Planning Actions</b>		
Marine Aviation Transition Strategy	EIS Underway (as part of Grow the Force)	Includes shifts and increase in personnel and aviation assets
Range and Training Area Transformation Plan for 2020	Identified by individual projects. Some completed and some underway.	Provides a phased plan for realignment, improvement, and relocation of existing training ranges and maneuver areas in order to improve the quality of training and reduce environmental impacts
<b>Community Actions</b>		
Eastern North Carolina Military Growth Task Force	Not applicable	Collaborative planning effort to address impacts of region-wide growth

Note.: FONSI = Finding of No Significant Impact

*Marine Special Operations Command Complex*-An EA was prepared for the Marine Special Operations Command complex that is proposed in the Stone Bay Rifle Range part of the Base. The Marine Special Operations Command is expected to have approximately 1,750 Marines at MCB Camp Lejeune by 2010. It is estimated that half of these personnel would transfer into the Marine Special Operations Command complex from other existing on-base units, while the remaining half would be new personnel. Thus, the proposed action involves approximately 875 new personnel stationed at MCB Camp Lejeune. The complex would be constructed on roughly 220 ha (544 ac) of the entire 816 ha (2,017 ac) project area. Furthermore, nine buildings and structures would be demolished under the proposed action. Finally, military training would be conducted at proposed training facilities within the complex under the proposed action. The analysis in the EA prepared for the Marine Special Operations Command complex resulted in a determination of a Finding of No Significant Impact (MCB Camp Lejeune, 2007b).

### **5.2.2 MCB Camp Lejeune Ongoing and Future Actions**

*Wastewater System Upgrades and Modifications*-An EA is being prepared for a proposed series of upgrades and modifications to the existing wastewater collection and treatment system at MCB Camp Lejeune. Specifically, improvements would provide a backup system while maintaining sufficient wastewater capacity to support existing installation operations as well as future needs. The proposed project would provide parallel force main river crossings at the New River, Scales Creek, Northeast Creek, and Wallace Creek. A force main near Gonzalez Boulevard would be replaced and a new force main would be constructed from United States Route 17 (US 17) along Verona Loop Road through the K Range Area, under the New River, and connecting to an existing force main, which would ultimately flow to the installation wastewater treatment plant at French Creek. A new lift station would be constructed near Parachute Tower Road with a connection to the existing wastewater lines. Lastly, two new pump stations would be constructed, one at Verona Loop and the other at the newly established Marine Special Operations Command complex.

*Security Gate Upgrades, Road Improvements, Landfill Expansion, and Relocation of Skeet Range*-An EA is being prepared for proposed security upgrades to the Main Gate and Piney Green Gate, associated road improvements to Old Saw Mill Road and Piney Green Road, construction of Phase III of the Municipal Solid Waste Landfill Facility, and relocation of the existing skeet range at MCB Camp Lejeune. The new gate facilities and road improvements would enhance the safety of all persons aboard the Base by providing the facilities needed to meet Anti-Terrorism/Force Protection standards and reduce traffic congestion, while maintaining the necessary gate control requirements. In addition, the construction of Phase III of the Municipal Solid Waste Landfill Facility on-base would provide additional landfill cells necessary for future solid waste disposal. Relocation of the existing skeet range would ensure that the Base maintains adequate fitness facilities for Marines as well as additional training opportunities.

*Wallace Creek Regimental Area Complex*-An EA is being prepared for the proposed construction, operation, and maintenance of a four-battalion regimental complex to accommodate the influx of approximately 2,100 personnel to MCB Camp Lejeune related to the Grow the Force actions at MCB

Camp Lejeune. Twenty-one military construction projects are proposed to meet the operational and training requirements of the two new infantry battalions, the new Regimental Headquarters, and two existing infantry battalions that would relocate into the new complex from the Hadnot Point area at MCB Camp Lejeune.

*Hadnot Point Bachelor Enlisted Quarters*-This EA proposes to construct, operate, and maintain two multistory Bachelor Enlisted Quarters and associated facilities to provide adequate housing for bachelor enlisted personnel in the Hadnot Point area on MCB Camp Lejeune. The proposed action would involve the construction of a small complex of facilities on the south side of McHugh Boulevard and west of Gonzalez Boulevard near the existing 2d Marine Division and II Marine Expeditionary Force barracks at Hadnot Point. The complex would include two multistory Bachelor Enlisted Quarters, a telephone exchange building and cable vault, parking lots, volleyball courts, basketball courts, picnic shelter, utility connections, stormwater ponds, sidewalks, and landscaping.

*Public Private Venture Housing (Phases IV and V)* - The USMC proposes to construct, through a Public Private Venture, approximately 850 family housing units for enlisted military personnel, and two Department of Defense Dependent Schools at MCB Camp Lejeune, North Carolina, and to construct approximately 110 family housing units for officers, at MCAS New River, North Carolina. The construction of family housing units would address the existing housing deficit. The land selected for evaluation in consideration of the Phase IV and Phase V Family Housing Public Private Venture proposed action consists of five parcels at MCB Camp Lejeune and one parcel at MCAS New River. The parcels identified as Sites 1, 2, 3, 5, and 8 at MCB Camp Lejeune comprise approximately 396 ha (978 ac) of largely undeveloped land. The MCAS New River parcel identified as the Wilson Boulevard Site comprises approximately 14 ha (34 ac).

*Grow the Force (permanent beddown)*-The USMC is preparing an EIS to address the total influx of personnel that is expected at MCB Camp Lejeune, MCAS New River, and MCAS Cherry Point in the coming years in relation to achieving a balanced growth in capability throughout the Marine Corps. The EIS will evaluate the proposed permanent increase of approximately 9,900 Marine Corps and civilian personnel in North Carolina, including approximately 7,700 at MCB Camp Lejeune, 1,400 at MCAS New River, and 800 at MCAS Cherry Point. It will evaluate the construction and operation of permanent facilities and training needs required by the personnel increase, and assess the impacts of the additional Marines and their dependents that would be relocated to the installations and surrounding communities.

### **5.2.3 MCB Camp Lejeune Planning Actions**

*Marine Aviation Transition Strategy*-As part of the Marine Aviation Transition Strategy, internal USMC force structure will be used to stand up a Marine Heavy Helicopter Squadron and a Marine Light/Attack Helicopter Squadron at MCAS New River. The plan calls for the temporary/transient stationing in FY08 of 466 Marines for the Marine Light/Attack Helicopter Squadron and 335 Marines for the Marine Heavy Helicopter Squadron at MCAS Cherry Point prior to their stationing at MCAS New River in FY11

(USMC, 2007b and USMC, 2008b). While temporarily stationed at MCAS Cherry Point, these approximately 800 Marines would be accommodated in existing facilities.

*Range and Training Area Transformation Plan for 2020* - The Operations and Training Department at MCB Camp Lejeune developed this plan to assess existing ranges and training areas, and to identify deficiencies of these assets. The Plan outlines a strategy to address identified deficiencies that includes relocation and realignment of training ranges and maneuver areas as needed to meet current and emerging training requirements and to reduce existing noise impacts. MCB Camp Lejeune is implementing the Plan in phases through a number of projects and over an extended timeframe. MCB Camp Lejeune has prepared individual NEPA documents to assess the potential for impacts from these projects as the concept for each project matured enough for formulation of alternatives and analysis of impacts. Future phases and projects would require additional NEPA documentation as well.

#### **5.2.4 Community Actions**

*Eastern North Carolina Military Growth Task Force*-To address the proposed Grow the Force actions at MCB Camp Lejeune, MCAS New River, and MCAS Cherry Point, a Military Growth Task Force was organized in October 2007 under the auspices of North Carolina's Eastern Region. The Military Growth Task Force includes leaders from the Marine Corps and Carteret, Craven, Duplin, Jones, Onslow, Pamlico and Pender counties. The Military Growth Task Force will seek to tap federal grants for addressing community planning and infrastructure development needs spurred by the arrival of new Marines, their spouses and children, as well as the in-migration of civilian personnel and their families. The task force intends to apply for funds through the Office of Economic Adjustment to help ensure schools, roads, public services and infrastructure can absorb incoming Marines, their families, and support staff (North Carolina's Eastern Region, 2007). The Military Growth Task Force will oversee completion of a comprehensive regional growth study that will address impacts of growth to include water and sewer services; education, health, emergency, law enforcement and social services; and transportation.

### **5.3 Potential for Cumulative Impacts**

All resources were evaluated for potential cumulative impacts resulting from the actions identified in Section 5.2 in combination with the proposed action. For all resource areas, it was determined that the impacts of the proposed action (i.e., construction) evaluated in this EA at MCB Camp Lejeune would not have additive or interactive impacts that would cumulatively impact resources. However, when considering the population growth associated with the overall Grow the Force initiative, it was determined that there could be cumulative impacts to four resource areas – Socioeconomics, Community Facilities and Services, Utilities, and Transportation and Traffic. Table 5.3-1 identifies the rationale and potential for cumulative impacts to the four resource areas for each of the actions identified in Section 5.2. Although the table does not distinguish between *types* of cumulative impacts (direct, positive, etc.), it should be noted that certain actions identified in the table would alleviate some of the potential



cumulative impacts, such as any utility and/or infrastructure upgrades as well as the planning actions of the Eastern North Carolina Military Growth Task Force.

**Table 5.3-1 Potential Cumulative Impacts**

Action	Rationale for Inclusion in Cumulative Impacts Analysis	Resource Area			
		Socioeconomics	Community Facilities and Services	Utilities	Transportation and Traffic
<b>MCB Camp Lejeune Recent Past Actions</b>					
Force Structure Review Group Initiatives	Manpower increase	✓	✓	✓	✓
4 <sup>th</sup> Marine Expeditionary Brigade Complex	Manpower increase	✓	✓	✓	✓
D-30 Range Relocation and Upgrade	Range improvements		✓	✓	
Marine Special Operations Command Complex	Manpower increase	✓	✓	✓	✓
<b>MCB Camp Lejeune Ongoing and Future Actions</b>					
Wastewater System Upgrades and Modifications	Utility improvements			✓	
Security Gate Upgrades, Road Improvements, Landfill Expansion, and Relocation of Skeet Range	Utility and transportation improvements			✓	✓
Wallace Creek Regimental Area Complex	Facilities to accommodate manpower increase	✓		✓	✓
Hadnot Point Bachelor Enlisted Quarters	Housing facilities to accommodate manpower increase	✓			✓
Public Private Venture Housing (Phases IV and V)	Housing facilities	✓			✓
Grow the Force ( <i>permanent beddown</i> )	Manpower increase	✓	✓	✓	✓
<b>MCB Camp Lejeune Planning Actions</b>					
Marine Aviation Transition Strategy	Shifts in increase in manpower and aviation assets	✓	✓	✓	✓
Range and Training Area Transformation Plan for 2020	Phased plan for realignment, improvement, and relocation of existing training ranges and maneuver areas	✓	✓	✓	✓
<b>Community Actions</b>					
Eastern North Carolina Military Growth Task Force	Actions to accommodate manpower increase	✓	✓	✓	✓

## **5.4 Cumulative Effects Analysis**

### **5.4.1 Socioeconomics**

#### 5.4.1.1 Existing Conditions

Socioeconomics is defined as the basic attributes and resources associated with the human environment. For this EA, the focus is on demographics, income and employment, and housing population and economic activity. The region of influence was defined as the tri-county region of Onslow, Carteret, and Pender Counties. Although Onslow County estimates that 90 percent of the total military population associated with MCB Camp Lejeune lives within Onslow County (Onslow County, 2000), the proposed sites for the temporary facilities are located in areas of the Base that may be associated with higher relative influences of Carteret and Pender counties.

Environmental justice and protection of children from environmental health risks and safety risks are two executive orders that are tied to socioeconomics: Executive Order 12898, “*Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*” and Executive Order 13045, “*Protection of Children from Environmental Health Risks and Safety Risks.*” The environmental justice executive order directs federal agencies to incorporate environmental justice into its mission and activities. Federal agencies are to accomplish this by conducting programs, policies, and activities that substantially affect human health or the environment in a manner that does not exclude communities from participation in, deny communities the benefits of, or subject communities to discrimination under such actions, because of their race, color, or national origin. For this EA, it was determined that there was no foreseeable potential disproportionate adverse impact to minority or low-income populations from the proposed action or as a result of cumulative impacts. This is based on an analysis of racial and ethnic distribution and poverty levels within the region of influence (see Tables 5.4-4 and 5.4-5). Similarly, children do not reside near or spend any time in the vicinity of the locations for the proposed temporary facilities or the other actions listed in Section 5.2 and, therefore, there would be no reasonably foreseeable increased environmental health or safety risks to children with the proposed action or cumulatively.

#### Demographics

*MCB Camp Lejeune:* There are several major Marine Corps commands and one Navy command aboard MCB Camp Lejeune, making it one of the largest populated bases in the world. Total active duty population of the Base is 43,116, of which 37,560 are assigned to MCB Camp Lejeune and 5,556 to MCAS New River (Table 5.4-1). (The baseline population includes the recent establishment of a Marine Special Operations Command at MCB Camp Lejeune.) On-base civilian employees add 4,627 personnel. There are a total of 46,025 family members of active duty personnel (MCB Camp Lejeune, 2007d as adjusted in accordance with MCB Camp Lejeune, 2007b and MCB Camp Lejeune, 2008). In addition, the current estimated annual through-put of students attending military training/schools at MCB Camp Lejeune is 19,000 (Marine Corps Installations East, 2007).

The military population of MCB Camp Lejeune has long been an essential element of the demography and economy of both Jacksonville and Onslow County. As the Base population has grown, it has become an increasing influence on the demographics of Pender and Carteret Counties. Table 5.4-2 shows more than two decades worth of estimates of the military population associated with MCB Camp Lejeune. In the context of a total tri-county population of 250,820 in 2000 (United States Census Bureau, 2007), the predominance of the military population is apparent. Retirees and their families add to this military population.

**Table 5.4-1 Military Baseline Population at MCB Camp Lejeune and MCAS New River**

Installation	Active Duty Personnel	Family Members of Active Duty Personnel	Civilian Employees	Total
MCB Camp Lejeune	37,560	Not Available	4,466	42,026
MCAS New River	5,556	Not Available	161	5,717
<b>Total</b>	<b>43,116</b>	<b>46,025<sup>1</sup></b>	<b>4,627</b>	<b>93,768</b>

Source: MCB Camp Lejeune, 2007d as adjusted in accordance with MCB Camp Lejeune, 2007b and MCB Camp Lejeune, 2008.

Note: <sup>1</sup>Total number provided from data that did not contain installation-specific data.

**Table 5.4-2 Military Population in the MCB Camp Lejeune Vicinity 1985-2006**

Year	Active Duty Personnel	Family Members of Active Duty Personnel	Civilian Employees	Total
1985 <sup>1</sup>	43,304	31,674	4,489	79,467
1990 <sup>1</sup>	44,026	52,565	4,691	101,282
1991 <sup>1</sup>	46,001	54,871	4,470	105,342
1996 <sup>1</sup>	41,110	57,000	4,800	102,910
2001 <sup>2</sup>	37,491	53,051	4,851	95,393
2003 <sup>3</sup>	37,220	53,614	4,883	95,717
2005 <sup>4</sup>	43,974	38,719	4,321	87,014
2006 <sup>5</sup>	42,241	45,160	4,627	92,028

Sources: 1. Onslow County, 2000. 2. MCB Camp Lejeune, 2001. 3. MCB Camp Lejeune, 2007a.

4. MCB Camp Lejeune, 2005c. 5. MCB Camp Lejeune, 2007d

*Tri-county Region:* Table 5.4-3 shows the total population for the region of influence, recent trends, and year 2010 population projections. Onslow County has the largest population within the region of influence. The city of Jacksonville is located entirely within Onslow County. For all three counties, there was an approximately 30 percent increase in population in the 1980s. Whereas the population in Onslow County remained relatively unchanged between 1990 to 2000, the populations of Pender and Carteret Counties grew by 42.4 percent and 12.9 percent, respectively. The annexation of the MCB Camp Lejeune

population more than doubled the city of Jacksonville’s population between 1990 and 2000, which otherwise remained stable during the course of the last decennial census. Although population numbers of Pender and Carteret Counties do not compare to Onslow County, they are steadily increasing. In fact, Pender County has the largest projected increase (27.2 percent) in population out of the entire region of influence. This steady increase in population in Pender County may be due to its proximity to MCB Camp Lejeune.

**Table 5.4-3 Population Trends 1980-2010**

Jurisdiction	1980 <sup>1</sup>	1990 <sup>2</sup>	2000 <sup>2</sup>	Projected 2010 <sup>3</sup>	Difference in Population as a percentage 1980-1990	Difference in Population as a percentage 1990-2000
Pender County	22,262	28,855	41,082	52,258	29.6	42.4
Carteret County	41,092 <sup>3</sup>	52,556	59,383	65,839	27.9	12.9
Onslow County	112,784	149,838	150,355	159,528	32.9	0.3
City of Jacksonville	18,259	30,013	66,715	n/a	64.4	122.3
North Carolina	5,880,095	6,628,637	8,049,313	9,349,175	12.7	21.4

Note: n/a = not available

Sources: 1. United States Census Bureau, 1990.

2. United States Census Bureau, 2007.

3. North Carolina State Demographics Unit, 2007.

Census data on the 2000 racial and ethnic make-up of the region of influence are summarized in Table 5.4-4. The white and black populations of Onslow County are proportionate to North Carolina as a whole. However, Carteret County has the largest white population and the smallest black or African American population out of the entire region of influence. Persons of Hispanic origin are more numerous in Onslow County (7.2 percent) and Jacksonville (10.0 percent) than in the state and Pender and Carteret Counties.

**Table 5.4-4 Race and Ethnicity 2000 (percent)**

Jurisdiction	White	Black <sup>1</sup>	Other Non-White <sup>2</sup>	Hispanic or Latino <sup>3</sup>
Pender County	72.7	23.6	3.6	3.6
Carteret County	90.3	7.0	2.7	1.7
Onslow County	72.1	18.5	9.4	7.2
City of Jacksonville	63.9	24.0	12.2	10.0
North Carolina	72.1	21.6	6.2	4.7

Notes: 1. Having origins in any of the black racial groups of Africa.

2. Includes individuals of two or more races.

3. Hispanic origin, may be of any race.

Source: United States Census Bureau, 2007.

Income and Employment

MCB Camp Lejeune serves as the leading employer of Onslow County residents. In 2003, the Base contributed more than \$5.2 billion to the local economy, of which \$384,050,700 was for the purchase of supplies, materials and services and \$1,794,066,400 was for gross pay to its military and civilian employees and retirees (USMC, 2005). It is anticipated that the Base’s federal military workforce will remain the leading regional industry in terms of employment and earnings.

Median household and family incomes, as well as percentages of persons living below the poverty level, as reported from the 2000 Census (and projected to 2005 where available), are shown in Table 5.4-5. Carteret County income data are most similar to the state income levels in 2000; Pender and Onslow Counties and the city of Jacksonville all had lower incomes than the state in 2000. However, Onslow County had median incomes more similar to the state as a whole in 2005. Jacksonville had the highest percentage of persons below poverty while Carteret County had the lowest percentage. Jacksonville and Onslow County had the lowest median household income.

**Table 5.4-5 Income and Poverty**

Jurisdiction	2000			2000 Per Capita Income
	Median Household Income	Median Family Income	Percent of Persons Below Poverty	
Pender County	35,902	41,633	13.6	17,882
Carteret County	38,344	45,499	10.7	21,260
Onslow County	33,756	36,692	12.9	14,853
City of Jacksonville	32,544	33,763	14.1	14,237
North Carolina	39,184	46,335	12.3	20,307
Jurisdiction	2005			2005 Per Capita Income
	Median Household Income	Median Family Income	Percent of Persons Below Poverty	
Onslow County	41,242	44,956	18.2	17,123
North Carolina	40,729	49,339	15.1	20,307

Source: United States Census Bureau, 2007.

Total employment in the tri-county area is 149,311, with Onslow County contributing 65.8 percent (98,304 jobs), followed by Carteret County at 23.8 percent (35,601 jobs), and Pender County at 10.3 percent (15,406 jobs). Onslow County offers a different employment character than is typical for North Carolina as a whole. In 2005, government sector jobs represented 56.7 percent of the jobs in Onslow County, significantly more than the state’s share at 15.7 percent. Pender County and Carteret County more closely matched the state at 16.9 percent and 14.5 percent, respectively. Whereas military jobs comprise 77.4 percent of the government jobs in Onslow County, military jobs comprise 8.2 percent of the government jobs in Carteret County and 4.3 percent of the government jobs in Pender County, as

compared to 15.7 percent of government jobs in North Carolina as a whole (Bureau of Economic Analysis, 2007).

As detailed in Table 5.4-6 below, compared to North Carolina as a whole, the region of influence, and Carteret County in particular, is less involved in manufacturing, reflecting in part their distance from both major population centers and the state's principal transportation networks. The educational, health and social services sector is the largest employer in the tri-county region. Construction and retail trade industries provide a higher share of employment within the region of influence than they do in the state.

**Table 5.4-6 Employment by Principal Private Industries 2000**

Industry Description	Number of Employees			
	Pender County	Carteret County	Onslow County	North Carolina
Manufacturing	2,632	2,043	2,682	755,252
Agriculture, Forestry, Fishing and Hunting, and Mining	630	805	996	61,185
Wholesale Trade	645	733	943	131,330
Construction	2,468	3,042	5,022	312,038
Retail Trade	2,367	3,495	7,496	439,868
Information	253	494	1,393	89,797
Finance, Insurance, Real Estate, and Rent and Leasing	749	1,643	2,234	231,222
Professional, Scientific, Mgmt., Administrative, and Waste Mgmt. Services	1,313	1,894	3,224	296,075
Educational, Health and Social Services	2,704	4,881	10,865	733,440
Arts, Entertainment, Recreation, Accommodation and Food Services	953	2,776	4,790	265,585
Other Services (except Public Administration)	1,089	1,394	2,564	176,908

Source: United States Census Bureau, 2007

Average annual pay is lower in the region of influence than for North Carolina as a whole, as shown in Table 5.4-7. On average, federal jobs provide the highest wages in the tri-county region and in the state. Although the average annual pay for federal jobs in Carteret County and the state is higher than in Onslow County, the average annual pay for federal jobs in Onslow County grew much faster from 2004 to 2005, at a rate of 9.7 percent.

In 2005, the average annual pay for federal jobs in Carteret County was more than double the average annual pay for all industries and, in Onslow County, it was 52 percent higher. For Pender County, the highest increase in average annual pay was for private industry (5.7 percent).

**Table 5.4-7 Average Annual Pay 2004-2005**

	2004	2005	Percent Change
<b>Pender County</b>			
All Industries	23,951	25,188	5.2
Federal Government	35,914	36,183	0.7
State Government	30,524	31,569	3.4
Local Government	29,058	30,507	4.9
Private Industry	22,133	23,408	5.7
<b>Carteret County</b>			
All Industries	23,596	24,290	2.9
Federal Government	50,705	53,075	4.7
State Government	30,688	31,220	1.7
Local Government	31,237	31,608	1.2
Private Industry	21,463	22,185	3.4
<b>Onslow County</b>			
All Industries	23,969	24,803	3.5
Federal Government	34,278	37,620	9.7
State Government	24,764	21,636	-12.7
Local Government	29,899	30,736	2.8
Private Industry	20,803	21,506	3.4
<b>North Carolina</b>			
All Industries	34,791	35,912	3.2
Federal Government	50,808	52,288	2.9
State Government	35,999	36,998	2.8
Local Government	33,098	34,176	3.3
Private Industry	34,634	35,764	3.3

Source: Based on Bureau of Labor Statistics, 2007.

## Housing

MCB Camp Lejeune has ten different family housing areas, which include approximately 4,300 family housing units, and approximately 22,500 on-base housing units for unaccompanied (i.e. bachelor) personnel (USMC, 2007a). Approximately 77 percent of the MCB Camp Lejeune military personnel with families and 30 percent of bachelor military personnel live off-base (MCB Camp Lejeune, 2005a).

Table 5.4-8 presents selected housing statistics for the tri-county region of influence. The 2000 census recorded 55,726 total housing units in Onslow County, of which 27 percent were built during the previous decade (United States Census Bureau, 2007). Within the region of influence, Pender County had the lowest total housing units at 20,798; however, the percentage of owner occupied units (82.6 percent) was higher than any other county in the region of influence and in the state as a whole. In 2000, Onslow

County occupied housing accounted for 48,122 units while Pender County occupied housing was 16,054 units. In Onslow County, rental units accounted for almost 42 percent of the occupied units, as compared to the state proportion of 31 percent and Carteret and Pender Counties' proportions of 23 and 17 percent respectively. In 2000, the average household size in Onslow County was 2.72, compared to 2.49 for the state and for Pender County (United States Census Bureau, 2007). Carteret County had the smallest household size at 2.31.

**Table 5.4-8 Housing Units 2000**

Jurisdiction	Total Units	Occupied Units		Percent Vacant	Median	
		Percent Owner	Percent Renter		Gross Rent \$ <sup>1</sup>	Value <sup>2</sup>
Pender County	20,798	82.6	17.4	22.8	491	86,900
Carteret County	40,947	76.6	23.4	38.4	511	106,400
Onslow County	55,726	58.1	41.9	13.6	518	78,200
North Carolina	3,523,944	69.4	30.6	11.1	548	108,300

Notes: 1. Gross monthly rent.

2. Value of owner-occupied units.

Source: United States Census Bureau, 2007.

The percentage of housing units that were vacant in Carteret County (38.4 percent) is higher than the region of influence and state percentages, reflecting in part the substantial number of seasonal units. The gross monthly rent was higher for Onslow County than for Pender and Carteret Counties, but the value of owner-occupied units was less.

Housing costs, on average, are more expensive in Carteret and Pender Counties than in Onslow County. In 2000, the median price asked for specified vacant for-sale-only housing units was \$84,100 in Onslow County; \$128,500 in Carteret County and \$87,000 in Pender County. For specified vacant for-rent housing units the median rent asked was \$342 for Onslow County, \$400 for Carteret County, and \$414 for Pender County (United States Census Bureau, 2007).

#### 5.4.1.2 Potential Cumulative Effects

Whereas cumulative impacts to natural and cultural resources are avoided or offset through ongoing environmental compliance efforts including Integrated Natural Resource Management Plans, Integrated Cultural Resources Management Plans, and pollution prevention plans, socioeconomic impacts are managed and offset through a number of programs that require teaming with the local community. As previously mentioned, the military is an essential component to the socioeconomics of the tri-county region. The past actions that formed this interrelationship are not further detailed here, as they are captured in the above discussion of existing socioeconomic conditions. A number of the past, present, and future actions at MCB Camp Lejeune and MCAS New River listed in Section 5.2 have the potential for additive, interactive, and synergistic socioeconomic impacts.

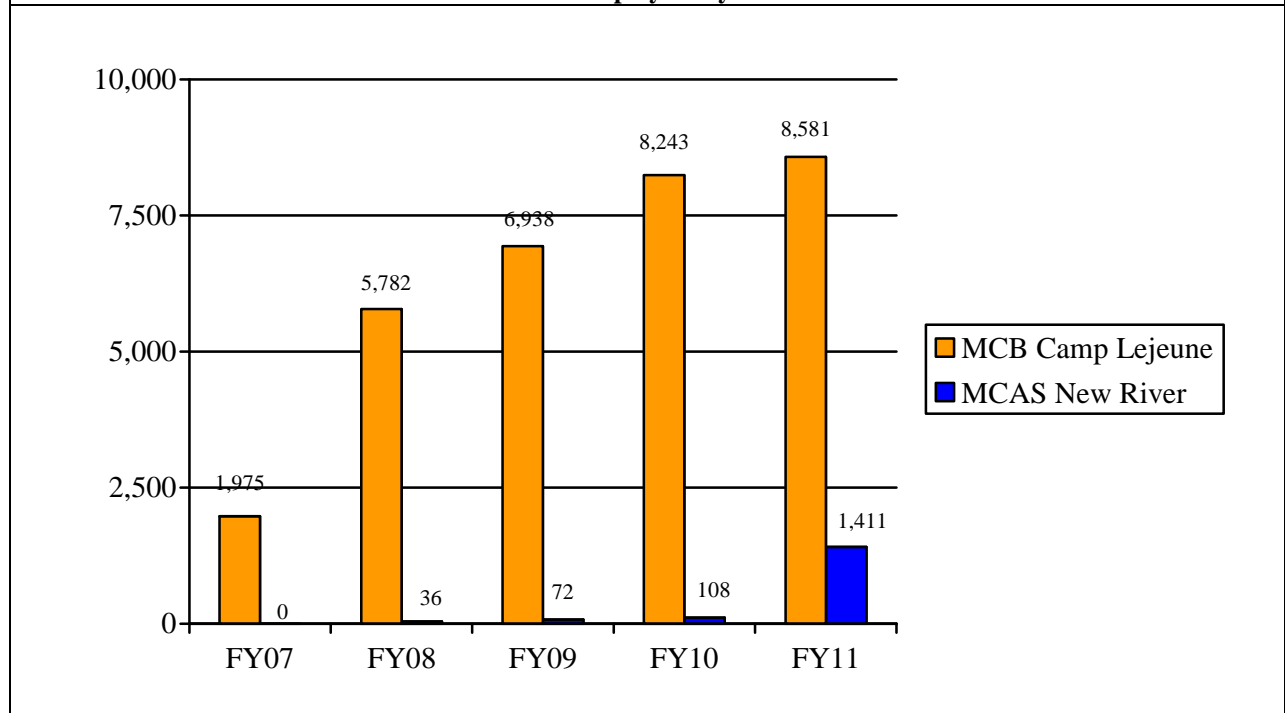


MCB Camp Lejeune has estimated the cumulative gains in active duty and family members as well as civilian employees at MCB Camp Lejeune and MCAS New River (Table 5.4-9). While predominantly related to the Grow the Force initiatives, it also includes the establishment of a Marine Special Operations Command at MCB Camp Lejeune and the Aviation Transition at MCAS New River (see Section 5.2.2). In addition, there would be an annual increase of an estimated 6,342 students attending various military training/schools at MCB Camp Lejeune, which translates to an estimated average increase of 529 students onboard at any given time (Marine Corps Installations East, 2007).

**Table 5.4-9 Cumulative Population Gains at MCB Camp Lejeune and MCAS New River**

Installation	Active Duty Personnel	Family Members of Active Duty Personnel	Formal School Students	Civilian Employees	Total
MCB Camp Lejeune	7,093	7,008	529	959	15,589
MCAS New River	1,267	1,252	0	144	2,663
<b>Total</b>	<b>8,360</b>	<b>8,260</b>	<b>529</b>	<b>1,103</b>	<b>18,252</b>

**Graphical Representation of Cumulative Gain in Active Duty Personnel, Formal School Students and Civilian Employees by Fiscal Year**



Source: Marine Corps Installations East, 2007 and Brewer, 2007

The cumulative gains in active duty personnel, civilian employees, and their dependents influence demographics in both economic terms and social networks. Although the net cumulative impact is much greater, all gains are in context of other growth in the region of which there are a number of factors increasing population growth within the region. As presented in Table 5.4-2, the military population in the MCB Camp Lejeune vicinity has fluctuated through time while the population in the region of

influence has steadily increased and is projected to continue to increase (see Table 5.4-3). The cumulative gains in military personnel and their dependants at MCB Camp Lejeune is not dramatic when compared with Base and relative community population levels in the early 1990s. However, the additive and synergistic impacts of projected gains in both the military and community population are notable. These changes in demographics influence all other socioeconomic factors and will further be evaluated in the EIS evaluating all the Grow the Force actions in North Carolina.

In terms of employment and income, there would be direct gains in terms of salary increases associated with the increased active duty and civilian employees. Gains would be aligned with the gains in personnel presented in Table 5.4-9. The cumulative gain in employment and earnings would result in direct gains for the local economy in the government sector and indirect gains throughout related economic sectors as the influx of “new” dollars ripples through the economy. Indirect cumulative impacts would result from the jobs of military spouses and children employed in the workforce.

There would also be construction spending associated with each of these actions that would result in temporary employment and expenditures and gains through the affected economic sectors. The sum total additive impacts of such construction spending is much greater than the individual impacts, and is additive with the ongoing importance of the military to the local area economy. The military expenditures associated with Grow the Force actions in all of North Carolina (including MCB Camp Lejeune, MCAS New River, and MCAS Cherry Point) are estimated at \$203 million in FY 2007, \$124 million in FY 2008, and \$138 million in FY 2009 (Marine Corps Installations East, 2007).

These impacts would be in addition to the baseline economic impacts of MCB Camp Lejeune and MCAS New River. Although the military impact on the economy is and would continue to be an important component of the tri-county area economy, the area’s economy is well diversified in other economic sectors. This diversification lessens the impacts of change within the federal military economic sector in terms of the economy and related social structures as a whole. The incremental impact of the temporary beddown of increased force at MCB Camp Lejeune is a small portion of the overall socioeconomic impact of past, present, and future actions at MCB Camp Lejeune and MCAS New River and an even smaller portion of the overall tri-region economy. Employment and income impacts associated with the gains in personnel associated with the Grow the Force actions in North Carolina will be further evaluated in the forthcoming EIS.

Housing impacts are being addressed through additional on-base Family Housing construction underway to address existing deficit and follow-on Family Housing under consideration by the Marine Corps (Marine Corps Installations East, 2007). In addition, the need for increased civilian housing is being addressed through the Military Growth Task Force and has the potential for minimizing the impact. The potential impacts of gains in personnel on housing will be further evaluated in the EIS for Growing the Force in North Carolina.

## **5.4.2 Community Facilities and Services**

### **5.4.2.1 Existing Conditions**

Community facilities and services include emergency services, hospitals, schools, and recreational facilities. Various potential cumulative effect actions listed in Section 5.2 involve the increase in manpower, which individually and cumulatively could result in an increased demand for these resources. Educational facilities are of particular interest because Onslow County, Pender County, and Carteret County schools are, for the most part, operating at or near capacity. Therefore, a more detailed level of analysis is provided for education in comparison to emergency services and recreation facilities.

#### Emergency Services

*MCB Camp Lejeune:* The MCB Camp Lejeune Fire Protection Division provides emergency response to fires and accidents, and initial response to fuel or oil spills. MCB Camp Lejeune's Explosive Ordnance Division has cooperative agreements with regional law enforcement agencies for the inerting and disposal of suspected or live unexploded ordnance. The Provost Marshal's office, located on McHugh Boulevard, is the primary police station for the installation's military police force (MCB Camp Lejeune, 2005a).

MCB Camp Lejeune, along with the city of Jacksonville and Onslow County, contribute personnel and expertise to the Military-Civilian Task Force for Emergency Response. This task force coordinates all regional (military and civilian) emergency services in the event of a natural or man-made disaster in the region (MCB Camp Lejeune, 2005a).

*Tri-county Region:* Onslow County, Pender County, and Carteret County each have their own fire and rescue and law enforcement departments. Onslow County Department of Emergency Services consolidates under one department several emergency service agencies: the Emergency 911 Communications Center, Emergency Management Office, Emergency Medical Services, Hazardous Materials Management, Fire Marshal's Office, and Safety and Security (Onslow County Emergency Services, 2007). The Emergency Services Department coordinates with nine volunteer rescue squads and 20 volunteer fire departments. Onslow County Sheriff's Office provides public safety services throughout most of the county, excluding MCB Camp Lejeune, MCAS New River, Hofmann State Forest, Hammocks Beach State Park, and the county's six municipalities, including the city of Jacksonville (Onslow County Sheriff's Office, 2007).

Pender Volunteer Emergency Medical Services and Rescue provides emergency medical services, crash rescue, search and rescue, and medical transport services across Pender County. Assets include six paramedic ambulances, two paramedic quick response vehicles, two heavy rescue trucks, and four patient care transport trucks (Pender Emergency Medical Services & Rescue, Inc., 2007). Pender County Sheriff's Department patrols the county, investigates crimes, apprehends criminals, and provides custody or control for arrested defendants, both pre-trial and sentencing. The Sheriff is responsible for courtroom

security, service of civil process, transportation of prisoners, mental patients, and service of criminal papers (Hampstead Chamber of Commerce, 2007).

The Emergency Services Department of Carteret County serves as a liaison between the County and the 15 Emergency Medical Services providers in Carteret County. The County's Emergency Medical Services and rescue squads are a combination of both paid and independently chartered private, non-profit corporations that provide emergency medical and rescue services to local government within designated Emergency Medical Services and Rescue districts. The County's volunteer fire departments are independently chartered private, non-profit corporations that provide firefighting to local government within designated fire districts (Carteret County Emergency Services, 2007). The Sheriff's Department patrols unincorporated areas of Carteret County, responds to calls for service, and investigates crimes in these areas. The Sheriff's Department also serves criminal papers and civil papers, provides courtroom security, operates the E-911 communications center and operates the county jail in Beaufort, North Carolina. The Teen Court program also reports to the Sheriff (Carteret County Sheriff, 2007).

### Hospitals

*MCB Camp Lejeune:* Medical care is provided to MCB Camp Lejeune military personnel and their dependents by the Naval Hospital Camp Lejeune located on-base. Naval Hospital Camp Lejeune is a fully accredited 117-bed hospital with four inpatient areas, an Ambulatory Procedures Unit, six off-site medical support facilities (or branch clinics), and a number of specialized clinics throughout the Base for convenient access (Naval Hospital Camp Lejeune, 2006). MCB Camp Lejeune has a cooperative agreement with the Onslow Memorial Hospital, located in the city of Jacksonville, to serve as a local alternative for medical care (DoN, 2005).

*Tri-county Region:* Onslow Memorial Hospital is located on Western Boulevard in Jacksonville and is a 162-bed facility with a variety of healthcare services and state-of-the-art diagnostic services that include a Women's Imaging Center, Sleep Lab, Heartburn Center, Cardiac Cath Lab, Neurodiagnostic Lab, Magnetic Resonance Imaging, and Computed Tomography Scan (Onslow Memorial Hospital, 2007).

Pender Memorial Hospital, located in Burgaw, North Carolina, is a not-for-profit, community hospital serving all of Pender County and the surrounding areas. Pender Memorial Hospital is licensed for a total of 86 beds, including 43 for acute care and 43 for skilled nursing (long-term and short-term rehabilitation) (Pender Memorial Hospital, 2007).

Carteret General Hospital, a 135-bed not-for-profit hospital, is located in Morehead City, North Carolina. Carteret General offers a full range of acute care, diagnostic and outpatient services, including a comprehensive Cancer Treatment Center, Imaging Center, Specialty Clinic, Hospice of Carteret County, Carteret Home Health, Cardiac Rehabilitation, and a Birthing Center (Carteret General Hospital, 2007).

Schools

*MCB Camp Lejeune:* School-age children of military families residing on-base attend the MCB Camp Lejeune Dependents Schools (CLDS) system. The CLDS operates five elementary schools, one middle school, and one high school. Table 5.4-10 shows the approximate yearly capacity and enrollment of students and approximate yearly staff among these schools. Total enrollment in CLDS is approximately 3,200. Under a separate MCB Camp Lejeune Public Private Venture housing action, MCB Camp Lejeune proposes to construct two new schools, an elementary school and a middle school, beginning in 2009.

The CLDS receives 100 percent of its funding from the federal government through a direct Department of Defense appropriation. CLDS combines with Fort Bragg Schools to form the North Carolina District of the Department of Defense Elementary and Secondary Schools. The FY06 pay and benefit budget for the North Carolina District (both CLDS and Fort Bragg) was \$65,266,000. Non-pay for MCB Camp Lejeune schools in FY06 was \$3,234,868 for an enrollment of 3,217 students. The \$32 million budget includes \$29 million for civilian labor and \$3 million for other school expenses (Humphrey, 2008).

**Table 5.4-10 Schools in the MCB Camp Lejeune Dependents Schools District – 2006-2007 School Year**

School (Grades)	Approximate Yearly Capacity	Projected Yearly Enrollment	Approximate Yearly Staff
Bitz Intermediate (PK-5)*	600	544	70
DeLalio (PK-5)	340	321	33
Johnson Primary (PK-2)*	800	787	100
Tarawa Terrace 1 (PK-1)	400	235	35
Tarawa Terrace 2 (KN-5)	525	356	44
Brewster Middle (6-8)	840	570	53
Lejeune High (9-12)	800	442	50
<b>Total</b>	<b>4,305</b>	<b>3,255</b>	<b>385</b>

Source: 1. Dargan, 2006 in MCB Camp Lejeune, 2007b.

\*Bitz Intermediate (PK-5) and Johnson Primary (PK-2) are new schools.

PK= pre-kindergarten

KN=kindergarten

*Onslow County:* The school-age children of military families who live off-base are most likely to attend one of Onslow County’s public or private schools. During the 2005-2006 school year, there were 13 private and religious schools in Onslow County serving grades kindergarten to 12. Nine of the schools were of various Christian denominations, while the remaining four were listed as independent. Total enrollment for the 13 non-public schools was 812 students (North Carolina Department of Administration, 2006).

Onslow County’s public schools currently include 18 elementary schools, 8 middle schools, 7 high schools, and one alternative school, the Onslow County Learning Center (Onslow County Schools, 2006). For the 2006-2007 school year, the total enrollment was approximately 27,014 students and the

total membership was approximately 22,461 students (Grantham, 2008 in MCB Camp Lejeune, 2008). (Membership is the actual headcount of students enrolled and is a snapshot of one particular day.)

Table 5.4-11 provides the student membership and school capacity for the elementary, middle, and high schools in the Onslow County public school system.

**Table 5.4-11 Onslow County Public School Membership and Capacity – 2006-2007 School Year**

Schools	Capacity	Membership	
	Students	Students	Percent of Capacity
Elementary	9,795	10,988	112.2
Middle	5,338	5,244	98.2
High	6,315	6,229	98.6
<b>Total</b>	<b>21,448</b>	<b>22,461</b>	<b>104.7</b>

*Source: Grantham, 2008 and Hudson, 2008 in MCB Camp Lejeune, 2008.*

The data in Table 5.4-11 indicate that membership in Onslow County elementary schools exceeds capacity by 12 percent. The middle and high schools are operating near capacity, with membership at approximately 98 percent of available capacity. Generally, the school system is at maximum capacity at all 34 schools. The Onslow County school system is currently redistricting the elementary schools to balance the capacities and enrollments. In addition, two new elementary schools are being constructed. Meadow View Elementary School will open for the 2008-2009 school year with a capacity of 805 students and Gum Branch Road Elementary School will open in 2009 with a capacity of 607 (Hudson, 2008 in MCB Camp Lejeune, 2008). The effect of MCB Camp Lejeune military families on the Onslow County school’s population is recognized as a significant factor when it comes to exceeding capacity. Approximately one-third of the students in the Onslow County public school system are military connected and some of those students move into or out of the school system or move between schools within the system during the school year (Hollamon, 2008 in MCB Camp Lejeune, 2008).

Onslow County public schools operate on a total budget of approximately \$188 million. The per student expenditure was \$7,588 for the 2006-2007 school year, including the child nutrition program (Hollamon, 2008 in MCB Camp Lejeune, 2008).

*Pender County:* Currently, there are no non-public schools in Pender County. Pender County’s public schools currently include seven elementary schools, five middle schools, three high schools, and one primary school (Pender County Schools, 2007). For the 2006-2007 school year, the total membership was approximately 7,631 students (Gardner, 2007 in MCB Camp Lejeune, 2007b).

Table 5.4-12 provides the student membership and school capacity for the elementary, middle, and high schools in the Pender County public school system.

**Table 5.4-12 Pender County Public School Membership and Capacity – 2006-2007 School Year**

Schools	Capacity	Membership	
	Students	Students	Percent of Capacity
Elementary	3,258	3,517	107.9
Middle	1,936	1,821	94.1
High	2,065	2,293	111.0
<b>Total</b>	<b>7,259</b>	<b>7,631</b>	<b>105.1</b>

Note: Elementary schools total include the Rocky Point Primary School. Topsail Elementary school is a new school and there is no 06-07 data available for this school.

Source: Pender County Schools, 2007.

The data in Table 5.4-12 indicate that membership in Pender County elementary schools exceeds capacity by 8 percent and the high schools exceed capacity by 11 percent. The middle schools are operating near capacity, with membership at approximately 94 percent of available capacity. Generally, the school system is at maximum capacity at all 16 schools. For the 2005-2006 school year, Pender County public schools operated on a total budget of approximately \$63 million. The per student expenditure was \$7,142 for the 2005-2006 school year, including the child nutrition program (Chestnutt, 2007 in MCB Camp Lejeune, 2007b).

**Carteret County:** During the 2005-2006 school year, there were five religious schools in Carteret County serving grades kindergarten to 12 (North Carolina Division of Non-Public Education, 2007). Total enrollment for the five non-public schools was 425 students. Carteret County’s public schools currently include eight elementary schools, four middle schools, three high schools, one primary school, and one alternative school (Bridges Alternative School) (Carteret County Schools, 2007). For the 2006-2007 school year, the total enrollment was approximately 8,266 students (Carteret County Schools, 2007).

Table 5.4-13 provides the student enrollment and school capacity for the elementary, middle, and high schools in the Carteret County public school system.

**Table 5.4-13 Carteret County Public School Enrollment and Capacity – 2006-2007 School Year**

Schools	Capacity	Enrollment	
	Students	Students <sup>2</sup>	Percent of Capacity
Elementary <sup>1</sup>	5,096	3,870	75.9
Middle	2,392	1,725	72.1
High	2,967	2,671	90.0
<b>Total</b>	<b>10,455</b>	<b>8,266</b>	<b>79.1</b>

Notes: <sup>1</sup>Includes the Morehead Primary School

<sup>2</sup>Student enrollment numbers based on the state’s determination as of October 2006.

\*The Bridges Alternative School enrollment/capacity is not included

Source: Carteret County Schools, 2007.

The data in Table 5.4-13 indicate that the school system is generally operating under capacity. The enrollment in Carteret County high schools is operating at 90 percent capacity. For the 2005-2006 school year, Carteret County public schools operated on a total budget of approximately \$74 million. The per student expenditure was \$8,444 for the 2005-2006 school year, including the child nutrition program (Ipock, 2007 in MCB Camp Lejeune, 2007b).

*Federal Impact Aid:* Impact aid is a federal grant program designed to assist local school districts that have lost traditional revenue sources due to the presence of tax-exempt federal property or that have experienced increased expenditures due to the enrollment of federally connected children. Traditional revenue sources include property, sales, and personal income taxes, which usually account for a large portion of the average school district's annual budget (MCB Camp Lejeune, 2005a). Impact aid provides the school district a payment in lieu of these lost taxes to assist with the basic educational needs of its students.

To help determine the amount of Federal Impact Aid the school district should receive, each student is assigned a weight. The higher the weight, the higher the impact these students have on a particular school district. Weights for students associated with MCB Camp Lejeune are as follows (MCB Camp Lejeune, 2005a):

- Military student living on federal property: 1.00 weight
- Military student not living on federal property: 0.20 weight
- Civilian student whose parent works on federal property: 0.05 weight

The Onslow County school district reported 8,664 federally connected students for the 2006-2007 school year (Hollamon, 2008 in MCB Camp Lejeune, 2008). Of the 8,619 federally connected students reported in the 2005-2006 school year, 6,652 were children of active duty military personnel and 1,967 were children of civilian personnel. Onslow County Schools received \$2.8 million in Federal Impact Aid in FY 2007 (Hollamon, 2008 in MCB Camp Lejeune, 2008).

Carteret County received approximately \$20,000 in Federal Impact Aid in 2006 and approximately \$19,000 in 2007, which is considerably less than Onslow County (Spencer, 2007). Pender County did not report any Federal Impact Aid in 2005. It is reasonable to assume that the school district does not meet the minimum enrollment requirements of federally connected children or that federally connected children do not make up at least three percent of the school district's total average daily attendance (FedSpending.org, 2007).

### Recreational Facilities

*MCB Camp Lejeune:* The Marine Corps Community Services offices for MCB Camp Lejeune provide a full range of recreational services and on-base facilities to military personnel and their dependents. The Marine Corps Community Services facilities on the Base include the following:



- an archery range
- a skeet/trap shooting range
- 2 marinas
- 2 campgrounds
- picnic areas
- horse stables
- 2 golf courses
- 124 athletic fields
- 62 tennis courts
- 21 handball/racquetball/ squash courts
- 39 basketball courts
- a paintball field
- a bowling center
- 8 gymnasium/fitness centers
- paved, multi-use Greenway Trail
- a swimming/surfing beach complex
- a fishing pier
- 3 swimming pools
- 2 movie theaters
- 4 hobby shops
- 5 recreation centers
- 2 community centers
- a youth center
- 9 communication centers

*Tri-county Region:* Onslow County, Pender County, and Carteret County offer numerous recreation facilities and opportunities throughout the region, including parks, beaches, multi-use trails, playgrounds, playing fields, and ball courts that support activities such as hiking, paddling, bird watching, organized sports, fishing, and hunting. Some of the highlights from each county are described below:

*Onslow County:* The Onslow County Parks and Recreation Department operates seven district parks, four regional beach access sites on North Topsail Beach, and a kayak and canoe paddling trail (Onslow County Parks and Recreation Department, 2006). The 27 km (17 mi) kayak and canoe paddling trail travels the New River stopping at the Rhodestown Landing, the Burton Industrial Park Landing, and finally the New River Waterfront Park in Jacksonville (Onslow County Parks and Recreation Department, 2006). Hofmann Forest is located in Onslow County, and Hammocks Beach State Park is located on Bear Island. The city of Jacksonville operates parks, playgrounds, recreational centers, a skate park, and a system of trails and greenways.

*Pender County:* Pender County's Holly Shelter Game Preserve is the largest state-controlled hunting preserve on the East Coast. Bird watching, turtle watching, and dolphin and whale watching are among the favorite pastimes on Topsail Island. In central and western Pender County, strawberry and blueberry farms offer pick-your-own opportunities in May and June. The Kirkwood Camp and Conference Center also offers meeting facilities and accommodations in a beautiful woodland setting for group retreats and conferences (Pender County Tourism, 2007).

*Carteret County:* Carteret County has seven parks that offer athletic fields, play lots, picnic shelters, and comfort stations. Beaufort, North Carolina and Harkers Island offer picnic areas and beach access (Carteret County Parks and Recreation, 2007). Harkers Island is home to the Cape Lookout National Seashore, which offers a variety of things to do including: shelling,

fishing, swimming, camping, birding, horse watching, hunting, and hiking (National Park Service, 2007).

#### 5.4.2.2 Potential Cumulative Effects

The cumulative impact of the influx of military personnel and family members would be an increased demand for community facilities and services. Given the scale of impacts and the more variable demand on emergency services, hospitals, and recreation services and facilities within the region of influence, cumulative impacts to schools is the only issue that warrants further analysis herein. The EIS for Growing the Force at MCB Camp Lejeune, MCAS New River, and MCAS Cherry Point will address the permanent beddown of approximately 9,900 Marines and civilian personnel, as well as their dependents that would be relocated to the installations and surrounding communities. As such, the EIS will provide more detailed information regarding environmental and cumulative impacts on community facilities and services beyond what is analyzed in this section for the proposed temporary beddown.

The additive gains in school-age dependents of personnel would result in commensurate incremental gains in school-age children, placing a greater demand on local area schools. An initial estimate is that the cumulative growth in active duty personnel set forth in Table 5.4-9 (including the school-age children associated with the recent addition of the Marine Special Operations Command) would result in a gain of 3,250 school-age children. Of these 3,250, 90 percent (2,925) would be estimated to attend local area schools. It should be noted that this is a conservative estimate using standard planning multipliers for Navy/Marine Corps personnel. In this case for which most of the growth in the short-term would result from recruiting predominantly new, young enlisted personnel that typically have not yet started a family, the standard planning multipliers overestimate the number of dependents. As this newly recruited population matures, the number of dependents and school-age children would more closely resemble the estimates derived from these multipliers. School-age children of civilian personnel would add to gains in the local area school enrollment. These gains would also be additive to increasing enrollment resulting from other growth in the region. Existing already strained local areas schools would be further strained by limits in physical capacity, high student-teacher ratios, and other impacts related to overcrowding.

The Federal Impact Aid program, administered by the United States Department of Education, is one venue for reducing the significance of these impacts. The Marine Corps is already working with the community and school districts to address the impacts of growth at MCB Camp Lejeune and MCAS New River and will continue to do so. The Marine Corps and the community have acknowledged that growth of the Marine Corps in North Carolina is going to require federal and state support to address costs. Actions to be taken by the Military Growth Task Force for North Carolina's Eastern Region have the potential to countervail impacts of growth to Community Facilities and Services, particularly if efforts to pursue Office of Economic Adjustment funding to address impacts are successful. In addition to their participation in the Military Growth Task Force, the Marine Corps will assist affected school districts in their pursuit for Federal Impact Aid to the greatest extent practicable. As previously discussed, it should also be noted that two new elementary schools are planned for construction in the Onslow County school

system as well as one elementary school and one middle school that are proposed for construction on-base. Together, this would alleviate some of the impact to both the installation and the local community. Impacts to schools and potential mitigation measures will be further addressed in the EIS under preparation for Growing the Force at MCB Camp Lejeune, MCAS New River, and MCAS Cherry Point.

### **5.4.3 Traffic and Transportation**

#### **5.4.3.1 Existing Conditions**

Traffic is often defined as the movement of people or vehicles through a transportation system. The amount of people or vehicles moving through a transportation system has an effect on the amount of time spent traveling from one point to another.

The main roads in the vicinity of MCB Camp Lejeune are US 17, NC 172, and North Carolina Route 24 (NC 24). US 17 runs roughly north-south, connecting Jacksonville with Wilmington, North Carolina 82 km (51 mi) to the south and New Bern, North Carolina 58 km (36 mi) to the north. NC 172 runs parallel to the entire eastern border of the installation boundary. NC 24 runs roughly east-west, connecting Jacksonville with Morehead City, North Carolina 69 km (43 mi) to the east and Fayetteville, North Carolina 169 km (105 mi) to the west. Local access to the main side area of the Base is provided by NC 24 via the Main Gate at Holcomb Boulevard and via the Piney Green Gate at Piney Green Road. All commercial traffic is restricted to the Piney Green Gate. The Main Gate operates 24 hours a day, 7 days a week. In addition, from 10 PM to 5 AM, one of three incoming traffic lanes is closed. The Piney Green Gate operates Monday through Friday from 5 AM to 7 PM (MCB Camp Lejeune, 2007c). The Base security threat level condition determines the frequency of vehicle inspections by Base personnel. Increased inspections of vehicles attempting to access the Base via these gates frequently causes significant traffic delays for all drivers traveling on NC 24.

A Traffic Study was conducted in 2007 by HNTB North Carolina, P.C. to identify existing traffic conditions of primary roadways in the vicinity of the Main Gate and Piney Green Gate, examine existing traffic operations at both gates, and to assess the impacts of potential future growth on various intersections in the Hadnot Point Area (HNTB, 2007). The study provided recommendations for improved traffic flow at MCB Camp Lejeune based on current conditions and under future planned growth scenarios. Additionally, under a separate action, MCB Camp Lejeune proposes to conduct a series of upgrades and improvements at the Main Gate and Piney Green Gate, pave Old Sawmill Road, and expand Piney Green Road for a three mile distance on-base.

#### **5.4.3.2 Potential Cumulative Effects**

In the short-term, there would be impacts to on-base traffic from increased activity of construction vehicles. However, construction traffic would constitute a small portion of the total existing traffic volume at MCB Camp Lejeune. The majority of vehicles used for construction activities would be driven to the construction sites and kept onsite for the duration of construction, resulting in only a small increase in vehicle trips. In addition, increases in traffic volumes associated with construction activity would be

temporary. Traffic may need to be rerouted around some of the proposed construction sites; however these impacts would be temporary.

The cumulative impact of the influx of military personnel and family members would result in an increase in traffic at MCB Camp Lejeune and the surrounding community. Nearby roadways could experience increases in traffic from associated commuters who live in different parts of the Base and county, namely US 17, NC 172, and NC 24. As described previously, a Traffic Study was completed that provided recommendations to existing roadways under various growth scenarios at MCB Camp Lejeune, which, if implemented, would alleviate some of the traffic problems that could occur with the overall increase in personnel. Additionally, under a separate action, improvements to the Main Gate, Piney Green Gate, Old Sawmill Road, and Piney Green Road would be constructed, thereby improving traffic flow on and off-base. Collectively, these improvements would reduce the cumulative impacts to traffic and transportation on-base and on surrounding roadways.

#### **5.4.4 Utilities and Infrastructure**

For the purposes of this cumulative impacts analysis, infrastructure includes utilities such as potable water supply, wastewater treatment, electricity, telecommunications, and solid waste collection and disposal. This analysis focuses on infrastructure and utilities located on-base. As described in Section 1.4.2, a separate EIS is being developed to analyze the potential environmental impacts of the proposed *permanent assignment* of Marines at MCB Camp Lejeune, MCAS New River, and MCAS Cherry Point in North Carolina. The EIS will assess in detail the available capacities of the various utility providers in the local community and will analyze the anticipated impacts from the increase in personnel.

##### 5.4.4.1 Existing Conditions

###### Potable Water

MCB Camp Lejeune obtains potable water from 69 online groundwater wells on the installation. These wells pump water from the Castle Hayne Aquifer and supply five water treatment plants (WTPs). In addition, purchased water from the Onslow Water and Sewer Authority supplies remote areas of the installation as well as the Rifle Ranges distribution system. The proposed project areas for the temporary facilities analyzed in this EA are serviced by three WTPs, including the Holcomb Boulevard WTP, Courthouse Bay WTP, and Hadnot Point WTP. Existing water lines are present in each of the proposed project areas.

The Holcomb Boulevard WTP has a treatment capacity of 19 million liters per day (mld) (5 million gallons per day [mgd]). The estimated average annual demand on the Holcomb Boulevard WTP is 5.7 mld (1.5 mgd) (Hartsoe, 2008). The Hadnot Point WTP has a 19 mld (5 mgd) treatment capacity. The estimated average annual demand on the Hadnot Point WTP is 8.1 mld (2.15 mgd) (Hartsoe, 2008). The Courthouse Bay WTP has a treatment capacity of 3 mld (0.8 mgd), and the estimated average annual demand is approximately 1.1 mld (0.3 mgd) (Hartsoe, 2008).

### Wastewater

Wastewater at MCB Camp Lejeune is conveyed to the wastewater treatment plant located in the French Creek area. The wastewater treatment plant's process and sludge handling systems were designed for an average daily flow of 57 mld (15 mgd), and are currently processing approximately 15 mld (4 mgd) (Hartsoe, 2008). MCB Camp Lejeune's NPDES permit allows the discharge of up to 57 mld (15 mgd) through a diffuser into the New River. A portion of the wastewater residuals (bio-solids) is applied to approximately 688 ha (1,700 ac) of the Base's forested lands and open areas under MCB Camp Lejeune's Residuals Application Program (MCB Camp Lejeune, Environmental Management Division, 2006).

Under a separate project (Proposed Wastewater System Modifications and Upgrades), the USMC is proposing to construct a series of upgrades and modifications to the existing wastewater collection and treatment system at MCB Camp Lejeune. These upgrades and modifications would provide parallel force main river crossings at the New River, Scales Creek, Northeast Creek, and Wallace Creek; construct a new lift station near Parachute Tower Road with a connection to the existing wastewater line; and replace an existing force main near Gonzales Boulevard. Additionally, the USMC would construct a new force main from US 17 along Verona Loop Road through the K Range area, under the New River and connecting to an existing force main that ultimately discharges to the wastewater treatment plant at French Creek. The USMC also plans to construct a new pump station at the newly established Marine Special Operations Command complex and near Verona Loop Road. Together these improvements to the wastewater system would improve the efficiency of the existing wastewater collection and treatment system. These upgrades and modifications would facilitate the ability of MCB Camp Lejeune to meet the increasing demands on the Base wastewater disposal infrastructure resulting from planned population growth.

### Electricity and Telecommunications

The Progress Energy Company (formerly Carolina Power and Light Company) is the primary provider of electricity to MCB Camp Lejeune, with Jones-Onslow Electric Membership Corporation as an additional source. Telephone services at MCB Camp Lejeune are provided by Sprint and AT&T (Raker, 2004 and Scott, 2004 in DoN, 2005). MCB Camp Lejeune is currently experiencing some capacity issues with respect to electricity and telecommunications; however, MCB Camp Lejeune is updating the existing infrastructure and working with local service providers to expand the existing capacity (Sides, 2008 and Babner, 2008).

### Solid Waste

Solid waste that is not reused or recycled is transported to the Base landfill located on Piney Green Road. Solid waste is visually monitored prior to entering the landfill. Waste that can be recycled is diverted to one of several recycling facilities: materials recovery, compost recycling, wood waste recycling, and construction and demolition debris recycling (MCB Camp Lejeune, Environmental Management

Division, 2006). The rate of solid waste disposal at MCB Camp Lejeune is rather variable, but averages approximately 3,583 metric tons per month (3,950 tons per month) (MCB Camp Lejeune, Public Works Division, 2006).

The permitted capacity of the on-base landfill is 480,905 cubic meters (629,000 cubic yards) and covers 4.4 ha (11 ac) in surface area. The Base landfill is divided into five phases, with each phase expected to provide the capacity for five years of waste. Phase I of this landfill was used from 1998 to 2004. Phase II has been in operation since 2004 and is expected to close around 2010 (MCB Camp Lejeune, Public Works Division, 2006). Phase III of the landfill is expected to be ready in 2010, and should accommodate another five to six years of solid waste disposal capacity. Phases IV and V would be constructed when the previous phase nears its capacity (Lowder, 2008). The Base landfill is expected to remain open until roughly 2030 (MCB Camp Lejeune, Environmental Management Division, 2007).

#### 5.4.4.2 Potential Cumulative Effects

The cumulative impact of the influx of military personnel and family members would be an increased demand for utilities services and infrastructure. The analysis in this section focuses on preliminary estimates for the demand for these resources that would be required by temporary active duty and civilian personnel *that would work on-Base*. This includes the 9,463 people identified in Table 5.4-9 (8,052 at MCB Camp Lejeune and 1,411 at MCAS New River by FY11). This estimate includes personnel associated with MCAS New River, since MCAS New River and MCB Camp Lejeune share the same utility systems with the exception of one potable WTP.

The EIS for Growing the Force at MCB Camp Lejeune, MCAS New River, and MCAS Cherry Point will address the permanent beddown of approximately 9,900 Marines and civilian personnel as well as their dependents that would be relocated to the installations and surrounding communities. As such, the EIS will provide more detailed information regarding environmental and cumulative impacts on utilities and infrastructure beyond what is analyzed in this section for the proposed temporary beddown.

#### Potable Water

As described previously, the proposed project areas for the temporary facilities analyzed as part of the proposed action in this EA are serviced by three WTPs, including the Hadnot Point WTP, the Holcomb Boulevard WTP, and the Courthouse Bay WTP. Using an average daily water consumption rate of 60.5 liters per day per person (16 gallons per day per person) (Water Resources and Environmental Engineering, 1979), the additional 9,463 personnel would cumulatively create a demand for an additional 572,512 liters per day (151,408 gallons per day) at MCB Camp Lejeune and MCAS New River. All of the WTPs have sufficient capacity to support this increase in demand for potable water, and the increased demand would be distributed across the WTPs at MCB Camp Lejeune and MCAS New River, thereby reducing the overall impact to any single WTP. Existing water lines are present at each of the proposed project areas and have sufficient capacity to serve the temporary facilities for domestic water requirements. Proper coordination with the NCDENR, Public Water Supply Section would be conducted

as needed to obtain a Water Connection Permit. Cumulatively, there would also be an increase in demand for potable water within the surrounding community. The increase in personnel associated with the Grow the Force initiative would occur as a phased approach over several years; thus allowing local communities to respond as needed to the increase in demand for potable water such as constructing infrastructure upgrades. Additionally, MCB Camp Lejeune is working closely with the Military Task Force identified in Section 5.2.4 to identify impacts of growth to resources such as potable water.

#### Wastewater

The cumulative impact of the influx of military personnel and family members would be an increased demand for wastewater disposal. The proposed temporary facilities would require connections to the existing force main that transports wastewater to the main treatment plant in French Creek, which services both MCB Camp Lejeune and MCAS New River. If needed, the Base and Air Station would coordinate with the NCDENR, Division of Water Quality, Non-Discharge Branch to obtain a Non-Discharge Sewer Extension Permit.

The advanced wastewater treatment plant located in the French Creek area of MCB Camp Lejeune currently processes approximately 15 mld (4 mgd) even though the treatment plant's process and sludge handling systems were designed for an average daily flow of 57 mld (15 mgd). Assuming that the average quantity of wastewater discharged under the proposed action is 95 percent of the volume of potable water consumed (Water Resources and Environmental Engineering, 1979), the additional 9,463 personnel cumulatively would discharge approximately 543,886 liters per day (143,838 gallons per day). This amount of discharge represents only 3.6 percent of the average daily wastewater discharge to the wastewater treatment plant. The USMC proposes a series of wastewater system upgrades and modifications under a separate project that would further improve the existing wastewater collection and treatment system on-base. Cumulatively, there would also be an increase in demand for wastewater treatment and disposal within the surrounding community. The increase in personnel associated with the Grow the Force initiative would occur as a phased approach over several years; thus allowing local communities to respond as needed to the increase in demand for wastewater treatment and disposal such as constructing new treatment plants. Additionally, MCB Camp Lejeune is working closely with the Military Task Force identified in Section 5.2.4 to identify impacts of growth to resources such as wastewater treatment and disposal.

#### Electricity and Telecommunications

Cumulatively, the new facilities would likely require connections to the electricity and telecommunications lines in the vicinity of the proposed project areas. Specific electrical and telecommunications requirements for the proposed temporary facilities have not been determined, but given that MCB Camp Lejeune is working to identify upgrades to the existing infrastructure, any increase in demand for these services would be expected to be met. Cumulatively, there would also be an increase in demand for electricity and telecommunications within the surrounding community. The increase in

personnel associated with the Grow the Force initiative would occur as a phased approach over several years; thus allowing local communities to respond as needed to the increase in demand for electricity and telecommunications such as constructing new upgrades to the existing infrastructure. Additionally, MCB Camp Lejeune is working closely with the Military Task Force identified in Section 5.2.4 to identify impacts of growth to resources such as electricity and telecommunications.

### Solid Waste

MCB Camp Lejeune and MCAS New River both dispose of solid waste at the Base landfill on Piney Green Road. According to the USEPA, the national average for waste generation per person is approximately 0.0022 tons (4.5 pounds) of waste per person per day (USEPA, 2007b). Using this estimate, the increase in solid waste generated for the 9,463 personnel would be 7,599 tons (15.5 million pounds) per year.

The Base landfill is divided into five phases, with each phase expected to provide the capacity of five years of waste. The Base is currently operating in Phase II which is expected to reach capacity in 2010 (MCB Camp Lejeune, Public Works Division, 2006). MCB Camp Lejeune is planning for the construction of Phase III which would accommodate another five to six years of solid waste disposal. Phases IV and V would be constructed when the previous phase nears its capacity. Therefore, the Base landfill is expected to remain open until approximately 2030 (MCB Camp Lejeune, Environmental Management Division, 2007 and Lowder, 2008) and would therefore have sufficient capacity to support the additional solid waste produced as a result of implementing the proposed action in combination with other present and future actions. Cumulatively, there would also be an increase in demand for solid waste disposal within the surrounding community. The increase in personnel associated with the Grow the Force initiative would occur as a phased approach over several years; thus allowing local communities to respond as needed to the increase in demand for solid waste disposal such as constructing new disposal facilities. Additionally, MCB Camp Lejeune is working closely with the Military Task Force identified in Section 5.2.4 to identify impacts of growth to resources such as solid waste disposal.

Any materials that are recyclable would be separated out of the waste stream and taken to the construction and demolition debris facility on-base at MCB Camp Lejeune to be crushed into manageable sized aggregate and riprap for later use in military construction and maintenance projects. Where it is practicable, tree debris from site clearing would be taken to the wood waste recycling facility where a tub grinder would grind wood into manageable sized wood chips for use in landscaping projects or for sale to private companies as a fuel source.

### **5.4.5 Conclusion**

The cumulative gains in USMC population associated with recent past and future actions would result in additive impacts to Socioeconomics, Community Facilities and Services, Transportation and Traffic, and Utilities and Infrastructure (see Table 5.4-14). However, the Marine Corps, in conjunction with North Carolina's Eastern Region, have created a Growth Task Force to initiate planning studies with the local



community. The completion of a comprehensive regional growth study to further identify and address potential impacts to the local community from the personnel increases is expected to minimize impacts of Marine Corps growth to resource areas, especially Community Facilities and Services. The EIS for Growing the Force at MCB Camp Lejeune, MCAS New River, and MCAS Cherry Point will provide further detailed analysis of all resource areas that could be affected by Marine Corps growth.

**Table 5.4-14 Summary of Cumulative Effects**

CUMULATIVE EFFECTS	
Socioeconomics	<p>Cumulative gains in active duty personnel, civilian employees, and their dependents is not dramatic when compared with Base and relative community population levels in the early 1990s. However, the additive and synergistic impacts of projected gains in both the military and community population are notable. These changes in demographics influence all other socioeconomic factors and will further be evaluated in the EIS evaluating all the Grow the Force actions in North Carolina.</p> <p>Short-term benefits on the local economy due to construction, long-term economic gains due to gain in jobs, indirect and induced impacts to economic sectors.</p> <p>Housing impacts are being addressed through additional on-base Family Housing construction underway to address existing deficit and follow-on Family Housing under consideration by the Marine Corps. Also, the need for increased civilian housing is being addressed through the Military Growth Task Force and has the potential for minimizing the impact.</p>
Community Facilities and Services	<p>Cumulatively, there would be an increase in demand for emergency services, hospitals, and recreational facilities.</p> <p>Additional expenses for local school districts, due to the projected increase in enrollment of approximately 2,925 school-age children; Onslow County has initiated a redistricting process to balance elementary school populations and is opening two new elementary schools - one in August 2008 with a capacity of 805 students and the other in 2009 with a capacity of 607 students. Two new schools, one elementary and one middle school, is also planned as part of a separate MCB Camp Lejeune action for construction on-base beginning in 2009.</p>
Transportation and Traffic	<p>Cumulatively, there would be an increase in traffic at MCB Camp Lejeune and the surrounding community. A series of on-base improvements to the Main Gate, Piney Green Gate and select roadways would reduce the cumulative impacts to traffic and transportation on-base and on surrounding roadways.</p>
Infrastructure and Utilities	<p>Cumulatively, there would be an increased demand for utilities and infrastructure both on- and off-base. MCB Camp Lejeune is implementing several infrastructure upgrades that would ensure demand is met. The increase in personnel associated with the Grow the Force initiative would occur as a phased approach over several years; thus allowing local communities to respond as needed to the increase in demand for utilities and infrastructure.</p>

## 5.5 Unavoidable Adverse Impacts

The primary unavoidable, adverse impacts on the environment resulting from the implementation of the proposed action would be the long-term effects of the removal of up to 15 ha (38 ac) of mixed pine and hardwood forest habitats. This would reduce the carrying capacity for wildlife species associated with that type of habitat but would be a minor impact in the context of all similar forested areas within MCB Camp Lejeune. In addition, noise generating activities would occur during the construction phases of the project.

The proposed action also includes several actions that would result in increased air emissions. In addition, a small amount of floodplains would be impacted by the proposed action.

There would be minor short-term impacts, such as increases in dust, noise levels, and traffic at the project areas associated with construction activities. Grading and clearing would make the site more vulnerable to erosion, and make nearby waters more vulnerable to siltation effects. The latter impacts would be minimized through use of erosion and sedimentation controls and stormwater BMPs.

## **5.6 Relationship between Local Short-Term Uses of the Environment and Enhancement of Long-Term Productivity**

NEPA requires that environmental analysis include identification of "...any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented." Irreversible and irretrievable resource commitments are related to the use of non-renewable resources and the effects that the uses of these resources have on future generations. Irreversible effects primarily result from the use or destruction of a specific resource (e.g., energy or minerals) that cannot be replaced within a reasonable time frame. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action (e.g., the disturbance of a cultural site).

Short-term uses of the environment are those that occur over a period of less than the life of the proposed action. Long-term uses include those impacts that would persist for a period of five years or more, or for the life of the proposed action. The activities addressed in this EA that would be categorized as short-term include the land clearing and construction of new temporary facilities within the proposed project areas.

Most impacts are short-term during the periods of construction activities. Implementation of this action would result in a minor increase in fuels used by ground-based vehicles, particularly during the construction activities, and the materials used in construction. Therefore, minor amounts of these nonrenewable resources would be irretrievably lost or depleted. In addition, up to approximately 15 ha (38 ac) of forested area would be removed or disturbed as a result of the proposed action. The loss of forested habitat results in a long-term, though minimal reduction in commodity production and revenues.

## **5.7 Irreversible and Irretrievable Commitments of Resources**

Fuel, construction materials, and labor would be expended during construction activities. Operating the new temporary facilities would require energy to heat, cool, and light the buildings as well as operate the security barriers. As previously mentioned, the proposed action would result in the loss of up to approximately 15 ha (38 ac) of forested area, would result in a long-term reduction in commodity production and revenues. However, the proposed action would not result in the destruction of environmental resources such that the range of potential uses of the environment would be limited, nor impact the biodiversity of the region.

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**APPENDIX A MIGRATORY BIRDS POTENTIALLY OCCURRING IN  
PROPOSED PROJECT AREAS**

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## Migratory Birds Potentially Occurring In Proposed Project Areas

No.	Species, Status, Family	Habitat
1	PIED-B GREBE <i>(Podilymbus podiceps)</i> Status: NAWCP Family: Podicipedidae	Breeds on seasonal or permanent ponds or lakes with dense stands of emergent vegetation, bays and sloughs. Uses most types of wetlands or sheltered saltwater bays in winter.
2	HORNED GREBE <i>(Podiceps auritus)</i> Status: NAWCP Family: Podicipedidae	Breeds on small to moderate-sized, shallow freshwater ponds and marshes. Winters along coasts and on large bodies of water.
3	LEAST BITTERN <i>(Ixobrychus exilis)</i> Status: NAWCP Family: Ardeidae	Freshwater or brackish marshes with tall, dense emergent vegetation including sedges and cattails.
4	GT. BLUE HERON <i>(Ardea herodias)</i> Status: NAWCP Family: Ardeidae	Found along marshes, swamps, rivers, lake edges, tidal flats, mangroves, and seacoasts. Usually nests in trees near water, but colonies can be found away from water.
5	GREAT EGRET <i>(Ardea alba)</i> Status: NAWCP Family: Ardeidae	Nests in colonies with other species, in shrubs and trees over water, and on islands. Feeds in variety of wetlands, including marshes, swamps, streams, rivers, ponds, lakes, tide flats, seashores, canals, and flooded fields.
6	SNOWY EGRET <i>(Egretta thula)</i> Status: NCWRC-SC, NAWCP Family: Ardeidae	Coastal areas, marshes, river valleys, lake edges.
7	LITTLE BLUE HERON <i>(Egretta caerulea)</i> Status: NCWRC-SC, BCC, NAWCP Family: Ardeidae	Swamps, inland marshes, estuaries, rivers, ponds, lakes, and coastal areas.
8	TRICOLOR HERON <i>(Egretta tricolor)</i> Status: NCWRC-SC, NAWCP Family: Ardeidae	Marshes, shores, mudflats, and tidal creeks.

## Migratory Birds Potentially Occurring In Proposed Project Areas

9	CATTLE EGRET ( <i>Bubulcus ibis</i> ) Status: NAWCP Family: Areidae	Breeds in colonies with other herons on islands, isolated woods, and swamps. Found foraging in many habitats, terrestrial and aquatic, such as ponds, cattle pasture, roadsides, farmland, dumps, parks, sports fields, and lawns.
10	GREEN HERON ( <i>Butorides virescens</i> ) Status: NAWCP Family: Areidae	Breeds in swampy thickets. Forages in swamps, along creeks and streams, in marshes, ponds, lake edges, salt marshes, ponds and pastures. Winters mostly in coastal areas, especially mangrove swamps.
11	BLK-CRWN NGT-HER ( <i>Nycticorax nycticorax</i> ) Status: NAWCP Family: Areidae	Various wetland habitats, including salt, brackish, and freshwater marshes, swamps, streams, lakes, and agricultural fields.
12	WHITE IBIS ( <i>Eudocimus albus</i> ) Status: NAWCP Family: Threskiornithidae	Salt, brackish, and fresh marshes, rice fields, mangroves. May forage in any kind of shallow water, commonly flying to feed in fresh water even in coastal regions. Foraging sites include marshes, mudflats, flooded pastures, lake edges, mangrove lagoons, grassy fields. Nests in mangroves, trees in swamps, dense thickets, sometimes on ground on islands or in marshes.
13	GLOSSY IBIS ( <i>Plegadis falcinellus</i> ) Status: NCWRC-SC, NAWCP Family: Threskiornithidae	At edges of fresh, brackish, and salt water.
14	CANADA GOOSE ( <i>Branta canadensis</i> ) Status: NAWMP, GBBDC Family: Anatidae	Breeds in a broad range of habitats from low Arctic tundra to prairies and parklands, including lakes, meadows, golf courses, and city parks.
15	SNOW GOOSE ( <i>Chen caerulescens</i> ) Status: Family: Anatidae	Breeds on subarctic and arctic tundra, near ponds or streams. Winters in coastal marshes and bays, wet grasslands, freshwater marshes, and cultivated fields.
16	WOOD DUCK ( <i>Aix sponsa</i> ) Status: GBBDC Family: Anatidae	Found in forested wetlands, including along rivers, swamps, marshes, ponds, and lakes.
17	AM. BLACK DUCK ( <i>Anas rubripes</i> ) Status: NAWMP, GBBDC Family: Anatidae	Breeds in a variety of wetland habitats, from salt marshes to beaver ponds, river islands, and boreal bogs. Winters primarily in salt water along coasts, but in a variety of freshwater areas inland.



## Migratory Birds Potentially Occurring In Proposed Project Areas

18	MALLARD ( <i>Anas platyrhynchos</i> ) Status: NAWMP, GBBDC Family: Anatidae	Found in all wetland habitats, lakes, rivers, bays, and parks.
19	BLUE-WINGED TEAL ( <i>Anas discors</i> ) Status: NAWMP Family: Anatidae	Shallow ponds, small lakes and open grasslands, and seasonal and permanent wetlands ; winters on marshes and protected coastal areas.
20	GREEN-WINGED TEAL ( <i>Anas crecca</i> ) Status: Family: Anatidae	Shallow freshwater ponds and lakes with lots of emergent vegetation. Along the coast in winter, it prefers tidal creeks, rivers, mudflats, and sheltered marshes to more open water.
21	CINNAMON TEAL ( <i>Anas cyanoptera</i> ) Status:NAWMP Family: Anatidae	Uses freshwater (including highly alkaline) seasonal and semipermanent wetlands of various sizes, including large marshes, open shallow lakes, reservoirs, sluggish streams, ditches, and stock ponds.
22	LONG-TAILED DUCK ( <i>Clangula hyemalis</i> ) Status: NAWMP Family: Anatidae	Breeds in tundra lakes, ponds, streams, coastal inlets, and other arctic wetlands . Winters on open ocean or on large freshwater lakes.
23	NORTHERN PINTAIL ( <i>Anas acuta</i> ) Status: GBBDC, NAWMP Family: Anatidae	Nests in open country with shallow, seasonal wetlands or ponds and low vegetation. Winters in wide variety of shallow inland freshwater and intertidal habitats such as coastal bays, lakes, and agricultural fields.
24	N. SHOVELER ( <i>Anas clypeata</i> ) Status: Family: Anatidae	Breeds in open, shallow wetlands and lakes. In winter, inhabits both freshwater and saline marshes as well as protected coastal areas.
25	AM. WIGEON ( <i>Anas americana</i> ) Status: GBBDC, NAWMP Family: Anatidae	Shallow freshwater wetlands, including ponds, lakes, marshes, and rivers. Winters on wet meadows, lakes, protected coastal waters.
26	GADWALL ( <i>Anas strepera</i> ) Status: Family: Anatidae	Open lakes and marshes.
27	LESSER SCAUP ( <i>Aythya affinis</i> ) Status: NAWMP, GBBDC Family: Anatidae	Summers on prairie lakes and marshes; winters on lakes, sheltered coastal areas, freshwater ponds.

## Migratory Birds Potentially Occurring In Proposed Project Areas

28	HOODED MERGANSER ( <i>Lophodytes cucullatus</i> ) Status: Family: Anatidae	Breeds in forested wetlands and wooded rivers and lakes. In migration and in winter found in wider range of open waters, along coasts, and in shallower waters than other mergansers.
29	RED-BR MERGANSER ( <i>Mergus serrator</i> ) Status: Family: Anatidae	Summers on rivers and lakes; winters along sheltered coastal waters, preferring salt water.
30	MOTTLED DUCK ( <i>Anas fulvigula</i> ) Status: GBBDC Family: Anatidae	Freshwater wetlands, ditches, wet prairies, and seasonally flooded marshes.
31	RING-NECKED DUCK ( <i>Aythya collaris</i> ) Status: GBBDC Family: Anatidae	Summers on open lakes, marshes; winters on large lakes and coastal areas.
32	REDHEAD ( <i>Aythya americana</i> ) Status: NAWMP, GBBDC Family: Anatidae	Nests in marshes, open lakes, and bays; often winters on saltwater.
33	RUDDY DUCK ( <i>Oxyura jamaicensis</i> ) Status: Family: Anatidae	Summers on open lakes and freshwater marshes, marshy lakes, and ponds; winters along coast, marshes, and shallow coastal bays.
34	BLACK VULTURE ( <i>Coragyps atratus</i> ) Status: NCWRC-SC Family: Cathartidae	Open country, dumps, and urban areas.
35	TURKEY VULTURE ( <i>Cathartes aura</i> ) Status: Family: Cathartidae	Prefers rangeland and areas of mixed farmland and forest. Roosts in large trees or on large urban buildings.
36	OSPREY ( <i>Pandion haliaetus</i> ) Status: Family: Accipitridae	Breeds in variety of habitats with shallow water and large fish, including boreal forest ponds, desert salt-flat lagoons, temperate lakes, and tropical coasts. Winters along large bodies of water containing fish.

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37	BALD EAGLE ( <i>Haliaeetus leucocephalus</i> ) Status: Camp Lejeune's INRMP-T, NCWRC-T Family: Accipitridae	Breeds in forested areas near large bodies of water. Winters in coastal areas, along large rivers, and large unfrozen lakes.
38	AM. SWAL. T. KITE ( <i>Elanoides forficatus</i> ) Status: BCC, PIF Family: Accipitridae	Forested regions near marshes or swamps, often bottomland, or riverine forest, also open pine woodland.
39	NORTHERN HARRIER ( <i>Circus cyaneus</i> ) Status: Family: Accipitridae	Open fields, wetlands, meadows, pastures, prairies, grasslands, croplands, and riparian woodlands.
40	AMERICAN KESTREL ( <i>Falco sparverius</i> ) Status: BCC, PIF Family: Falconidae	Breeds in a variety of open habitats, including meadows, grasslands, deserts, parkland, agricultural fields, urban and suburban areas.
41	SHARP-SHIN HAWK ( <i>Accipiter striatus</i> ) Status: Family: Accipitridae	Nests in forests, usually with conifers. Generally not present in small woodlots and open areas. Winters in larger variety of habitats, including urban and suburban areas.
42	COOPERS HAWK ( <i>Accipiter cooperii</i> ) Status: NCWRC-SC Family: Accipitridae	Breeds in deciduous, mixed, coniferous forests and open woodland. Becoming more common in suburban and urban areas.
43	RED-SHOLDR HAWK ( <i>Buteo lineatus</i> ) Status: Family: Accipitridae	Forests with open understory, especially bottomland hardwoods, riparian areas, and flooded swamps.
44	BROAD WING HAWK ( <i>Buteo platypterus</i> ) Status: Family: Accipitridae	Breeds in continuous deciduous or mixed-deciduous forest. Winters in tropical forests.
45	RED-TAILED HAWK ( <i>Buteo jamaicensis</i> ) Status: Family: Accipitridae	Found in open areas with scattered elevated perches, including agricultural areas, fields, pasture, parkland, broken woodland, and scrub desert.
46	MERLIN ( <i>Falco columbarius</i> ) Status: Family: Falconidae	Breeds in open country from open coniferous woodland to prairie; also forest edges and farmland, occasionally in adjacent suburbs or urban areas. Winters in open woodland, grasslands, prairies, open cultivated fields, coastal lowlands, marshes, and estuaries.

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47	CLAPPER RAIL ( <i>Rallus longirostris</i> ) Status: NAWCP Family: Rallidae	Salt marshes and mangrove swamps.
48	VIRGINA RAIL ( <i>Rallus limicola</i> ) Status: NAWCP Family: Rallidae	Freshwater marshes; occasionally inhabits salt marshes. Lives in dense emergent vegetation.
49	SORA ( <i>Porzana carolina</i> ) Status: NAWCP Family: Rallidae	Breeds in shallow salt and freshwater marshes with lots of emergent vegetation.
50	COMMON MOORHEN ( <i>Gallinula chloropus</i> ) Status: NAWCP Family: Rallidae	Freshwater or brackish marshes with tall emergent vegetation, ponds, canals, and rice fields.
51	AMERICAN COOT ( <i>Fulica americana</i> ) Status: NAWCP Family: Rallidae	Summers on marshy lakes; winters also along the coast.
52	SANDHILL CRANE ( <i>Grus canadensis</i> ) Status: NAWCP Family: Gruinae	Breeds in open marshes or bogs, and in wet grasslands and meadows. Feed in marshes and grain fields. Summers on prairies and tundra; during winter, roosts on shallow water and feeds in agricultural fields.
53	BLACK-BEL.PLOVER ( <i>Pluvialis squatarola</i> ) Status: Family: Charadriidae	Nests in Arctic lowlands on dry tundra. Winters on coastal beaches, mudflats, and estuaries. May use flooded pasture and agricultural land.
54	KILLDEER ( <i>Charadrius vociferus</i> ) Status: Family: Charadriidae	Open areas, especially sandbars, mudflats, pastures, cultivated fields, athletic fields, airports, golf courses, gravel parking lots, and graveled rooftops. Suburban or rural.
55	PILEATED WOODPKR ( <i>Dryocopus pileatus</i> ) Status: Family: Picidae	Found in deciduous or coniferous forests with large trees, suburbs.
56	EAST.WOOD-PEWEE ( <i>Contopus virens</i> ) Status: Family: Tyrannidae	Breeds in all woodland types in the east. Winters in partially cleared shrubby habitats and secondary forests.

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57	ACADIAN FLYCTHR ( <i>Empidonax vireescens</i> ) Status: Family: Tyrannidae	Breeds in mature forest, especially deciduous woods, along streams, in ravines, and in swamps. Winters in lowland tropical forest and second growth.
58	EASTERN PHOEBE ( <i>Sayornis phoebe</i> ) Status: Family: Tyrannidae	Found in woodlands and along forest edges, often near water, farmlands, suburbs; nests on bridges, outbuildings.
59	GT.CRST FLYCTCHR ( <i>Myiarchus crinitus</i> ) Status: Family: Tyrannidae	Breeds in open deciduous woodlands, old orchards, riparian corridors, wooded swamps, parks, cemeteries, and urban areas with large shade trees. Winters in humid forests and second growth.
60	EASTERN KINGBIRD ( <i>Tyrannus tyrannus</i> ) Status: Family: Tyrannidae	Breeds in open environments with scattered perches, such as fields, orchards, shelterbelts, and forest edges. Uses urban parks and golf courses. Winters in river- and lake-edge habitats and canopy of tropical forests.
61	LOGGERHEAD SHRIKE ( <i>Lanius ludovicianus</i> ) Status: NCWRC-SC Family: Laniidae	Open country with some shrubs and trees.
62	PURPLE MARTIN ( <i>Progne subis</i> ) Status: Family: Hirundinidae	Breeds near human settlements where nest houses are provided, especially near water and large open areas. Also in saguaro cactus, and in western montane forests around beaver ponds. In winter, feeds in rainforest, clearings, and agricultural areas; may roost in village plazas.
63	TREE SWALLOW ( <i>Tachycineta bicolor</i> ) Status: Family: Hirundinidae	Open areas near water and fields, especially wooded swamps and shorelines.
64	N. RGH-WING SWAL ( <i>Stelgidopteryx serripennis</i> ) Status: Family: Hirundinidae	Breeds in a wide variety of open habitats, with openings in various vertical surfaces, including banks, gorges, and human structures, especially near water and cutaway banks.
65	BANK SWALLOW ( <i>Riparia riparia</i> ) Status: Family: Hirundinidae	Open areas near water with cutaway banks.

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66	CLIFF SWALLOW ( <i>Petrochelidon pyrrhonota</i> ) Status: Family: Hirundinidae	Breeds in a variety of habitats with open foraging areas and cliffs or buildings for nesting. Avoids heavy forest, desert, or high mountains.
67	BARN SWALLOW ( <i>Hirundo rustica</i> ) Status: Family: Hirundinidae	Found in many habitats with open areas for foraging and structures for nesting, including agricultural areas, cities, and along highways. Needs mud for nest building.
68	CAVE SWALLOW ( <i>Petrochelidon fulva</i> ) Status: Family: Hirundinidae	Nests in some natural or human-made structure (cave, sinkhole, building, silo, bridge, culvert). During the day forages over nearby open areas, often near water.
69	BLUE JAY ( <i>Cyanocitta cristata</i> ) Status: Family: Corvidae	Found in deciduous, coniferous, and mixed forests and woodlands. Found more along forest edges than in deep forest. Common in urban and suburban areas, especially where large oaks are present.
70	AMERICAN CROW ( <i>Corvus brachyrhynchos</i> ) Status: Family: Corvidae	Variety of habitats. Requires open ground for feeding and scattered trees for roosting, nesting, and refuge.
71	FISH CROW ( <i>Corvus ossifragus</i> ) Status: Family: Corvidae	Primarily coastal, along beaches and marshes into forests. Usually near water, but breeds in urban areas and farmland away from coast and large bodies of water. Common at dumps and in urban areas.
72	CAROLINA CHICKADEE ( <i>Poecile carolinensis</i> ) Status: Family: Paridae	Deciduous and mixed deciduous/coniferous woodlands, swamps, riparian areas, open woods and parks. Also in suburban and urban areas.
73	TUFTED TITMOUSE ( <i>Baeolophus bicolor</i> ) Status: Family: Paridae	Deciduous forest, swamps, orchards, parks, and suburban areas.
74	WHT-BRSTD NTHTCH ( <i>Sitta carolinensis</i> ) Status: Family: Sittidae	Found in mature deciduous forests or mixed woods, especially near openings and edges. Also parks and suburbs with large trees.
75	BROWN-HD.NTHTCH ( <i>Sitta pusilla</i> ) Status: BCC, PIF Family: Sittidae	Pine forests, especially in open, mature forests with periodic fires.

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76	RED-BRST NTHTCH ( <i>Sitta canadensis</i> ) Status: Family: Sittidae	Mature and diverse stands of coniferous forests, especially spruce, fir, larch, and cedar. Also suburban habitat with sufficient conifers.
77	BROWN CREEPER ( <i>Certhia americana</i> ) Status: NCWRC-SC Family: Certhiidae	Coniferous and mixed coniferous-deciduous forests.
78	CAROLINA WREN ( <i>Thryothorus ludovicianus</i> ) Status: Family: Troglodytidae	Found in a wide range of habitats, from swamps to forest to rural or residential areas. Requires moderately dense shrub or brushy cover, such as forest understory or vines.
79	HOUSE WREN ( <i>Troglodytes aedon</i> ) Status: Family: Troglodytidae	Breeds along forest edges and in open woodlands, city parks, and residential areas with trees. Also in mountain forests and clearings, and aspen groves. Winters in thickets, shrubby areas, residential yards and gardens, chaparral, and riparian areas.
80	MARSH WREN ( <i>Cistothorus palustris</i> ) Status: Family: Troglodytidae	Nests in variety of marshes, especially with dense cattails and rushes.
81	WINTER WREN ( <i>Troglodytes troglodytes</i> ) Status: Family: Troglodytidae	Breeds in many different habitat types, from cliff faces to rocky woodland streams to various forests; occurs in greatest densities in coniferous forests. Prefers areas with fallen logs and other dead wood. Winters in woods, wood piles, and tangles.
82	SEDGE WREN ( <i>Cistothorus platensis</i> ) Status: Family: Troglodytidae	Nests in dense tall sedges and grasses in wet meadows, hayfields, and marshes, often with sedges. Avoids cattails. Winters in grassy marshes, coastal marshes, and dry grass fields.
83	RUBY-CRWN KINGLET ( <i>Regulus calendula</i> ) Status: Family: Regulidae	Summers in coniferous woods; winters in woods and brushy edges.
84	GOLDEN-CRWN KINGLET ( <i>Regulus satrapa</i> ) Status: Family: Regulidae	Breeds in spruce and fir forests, as well as some mixed coniferous-deciduous forests. Winters in woods and brushy edges.

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85	BLU-GRAY GNTCTCHR ( <i>Polioptila caerulea</i> ) Status: Family: Sylviidae	Breeds in variety of deciduous wooded habitats from shrubland to mature forest, especially near water. Also in swamps.
86	EASTERN BLUEBIRD ( <i>Sialia sialis</i> ) Status: Family: Turdidae	Open habitat with little or no understory and sparse groundcover, such as orchards, clear-cuts, parks, and large lawns in suburban and urban areas.
87	WOOD THRUSH ( <i>Hylocichla mustelina</i> ) Status: BCC, PIF Family: Turdidae	Breeds in the interior and edges of deciduous and mixed forests, in rural to urban areas, generally in cool, moist sites, often near water.
88	HERMIT THRUSH ( <i>Catharus guttatus</i> ) Status: Family: Turdidae	Breeds in interior of deciduous, mixed, and coniferous forest, favoring internal forest edges. Winters in moist and dense cover of woody growth, forests, open woodlands, and in the northern part of range especially in ravines and sheltered sites.
89	AMERICAN ROBIN ( <i>Turdus migratorius</i> ) Status: Family: Turdidae	Found in from woods to open lawns and plains to timberline, especially where short-grass areas are interspersed with shrubs and trees. Common in urban and suburban areas.
90	GRAY CATBIRD ( <i>Dumetella carolinensis</i> ) Status: Family: Mimidae	Found in dense, shrubby habitats with tangled thickets, such as abandoned farmland, fencerows, roadsides, streamsides, forest edges, and some residential areas.
91	N. MOCKINGBIRD ( <i>Mimus polyglottos</i> ) Status: Family: Mimidae	Found in areas with open ground and shrubby vegetation, such as in parkland, cultivated land, and suburbs.
92	BROWN THRASHER ( <i>Toxostoma rufum</i> ) Status: Family: Mimidae	Breeds in brushy open country in thickets, shelter belts, riparian areas, and suburbs. Winters in hedgerows, gardens, thickets, and brushy woodland edges.
93	CEDAR WAXWING ( <i>Bombycilla cedrorum</i> ) Status: Family: Bombycillidae	Breeds in open woodland, old fields with shrubs and small trees, riparian areas, farms, and suburban gardens. Winters in areas with fruit-bearing trees and shrubs, especially open woodlands, parks, gardens, and forest edges.
94	EUR. STARLING ( <i>Sturnus vulgaris</i> ) Status: Family: Sturnidae	Uses a variety of habitats with open country, fields, and trees for nesting; especially near people in agricultural and urban areas.



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95	WHITE-EYED VIREO ( <i>Vireo griseus</i> ) Status: Family: Vireonidae	Found in deciduous scrub, dense understory, thickets, hedgerows, overgrown pastures, old fields, wood margins, streamside thickets, and mangroves.
96	SOL. (BLU-HD) VIREO ( <i>Vireo solitarius</i> ) Status: Family: Vireonidae	Cool forests.
97	YEL-THRT VIREO ( <i>Vireo flavifrons</i> ) Status: Family: Vireonidae	Breeds in a variety of edge habitats in mature deciduous and mixed deciduous forests.
98	RED-EYED VIREO ( <i>Vireo olivaceus</i> ) Status: Family: Vireonidae	Breeds in deciduous and mixed deciduous forests. More abundant in forest interior. Lives in urban areas and parks with large trees.
99	NORTH. PARULA W. ( <i>Parula americana</i> ) Status: BCC, PIF Family: Parulidae	Deciduous and coniferous forests, usually near water.
100	YELLOW WARBLER ( <i>Dendroica petechia</i> ) Status: Family: Parulidae	Breeds in wet, deciduous thickets, especially in willows. Also in shrubby areas and old fields, yards and gardens. In southern Florida and farther south, found in mangroves.
101	CAPE MAY WARBLER ( <i>Dendroica tigrina</i> ) Status: Family: Parulidae	Breeds in coniferous (spruce) forest. Winters in various habitats, including settled areas.
102	YELL-RUMP WARBLER ( <i>Dendroica coronata</i> ) Status: Family: Parulidae	Breeds in mature coniferous and mixed coniferous-deciduous woodlands. Winters in open areas along woodland edge, second growth, dunes, marshes, and residential areas. Only warbler able to digest the waxes found in bayberries and wax myrtles. Its ability to use these fruits allows it to winter farther north than other warblers
103	YELL-THRTD WARB. ( <i>Dendroica dominica</i> ) Status: Family: Parulidae	Breeds in pine forest, sycamore-baldcypress swamp, live oak woodland, floodplain forest and riparian woodland. Found in migration and winter in a variety of woodland, scrub, brush and thicket situations but most frequently in pine woodland if such habitat is available.
104	PINE WARBLER ( <i>Dendroica pinus</i> ) Status: Family: Parulidae	Breeds in a variety of pine forests or mixed woodlands and plantations. Winters in similar habitats.

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105	PALM WARBLER ( <i>Dendroica palmarum</i> ) Status: Family: Parulidae	Breeds in spruce bogs, open boreal coniferous forest, and partly open situations with scattered trees and heavy undergrowth, usually near water. Found in migration and winter in a variety of woodland, second growth and thicket habitats, on the ground in savanna and open fields, beaches, lawns, and in mangroves.
106	PRAIRIE WARBLER ( <i>Dendroica discolor</i> ) Status: BCC, PIF Family: Parulidae	Various shrubby habitats, including regenerating forests, dry brushy areas, open fields, old fields, young pine plantations, mangrove swamps, and Christmas-tree farms. Florida residents live in mangrove forests.
107	BLACKPOLL WAR. ( <i>Dendroica striata</i> ) Status: Family: Parulidae	Breeds in boreal coniferous forest (primarily spruce or spruce-fir) and woodland, mixed coniferous-deciduous second growth, tall shrubs, and alder thickets; in migration and winter found in a variety of forest, woodland, scrub and brushy habitats.
108	BLK & WHT WARB. ( <i>Mniotilta varia</i> ) Status: Family: Parulidae	Breeds in mature and second-growth deciduous and mixed forests. Winters in variety of habitats from disturbed areas to mature forests.
109	PROTHONTRY WARB. ( <i>Protonotaria citrea</i> ) Status: Family: Parulidae	Breeds in wooded areas near water, especially flooded bottomland hardwood forests, cypress swamps, and along large lakes and rivers. Winters in mangrove swamps and coastal tropical forests.
110	WORM-EATING WARB. ( <i>Helmitheros vermivorum</i> ) Status: PIF Family: Parulidae	Breeds in mature deciduous or mixed deciduous-coniferous forest with patches of dense understory, usually on steep hillside. Winters in tropical forests.
111	ORANGE-CRWN WARB ( <i>Vermivora celata</i> ) Status: Family: Parulidae	Breeds in streamside thickets and woodland groves with moderately dense foliage, forest edges, brushy fields, and in understory of forests and chaparral. Winters in thickets and shrubs along streams, forests, weedy fields, and dense tangles of shrubs and vines.
112	SWAINSON'S WARB. ( <i>Limnothlypis swainsonii</i> ) Status: BCC, PIF Family: Parulidae	Breeds in swamps and southern forests with thick undergrowth, especially canebrakes and floodplain forests in lowlands and rhododendron-mountain laurel in Appalachians. Winters in tropical scrub, evergreen, and gallery forests.
113	OVENBIRD ( <i>Seiurus aurocapilla</i> ) Status: Family: Parulidae	Breeds in mature deciduous and mixed deciduous and coniferous forests. Winters in primary and second growth forests.

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114	BLK-NECKED STILT ( <i>Himantopus mexicanus</i> ) Status: USSCP (Hawaiian population) Family: Recurvirostridae	Shallow fresh and saltwater wetlands, including salt ponds, rice fields, shallow lagoons, mangrove swamps, ditches, ponds salt ponds, or fields.
115	GR. YELLOWLEGS ( <i>Tringa melanoleuca</i> ) Status: Family: Scolopacinae	Breeds in muskeg, wet bogs with small wooded islands ,and subarctic forests (usually coniferous) with abundant clearings. Winters in wide variety of shallow fresh and saltwater habitats.
116	LESSR. YELLOWLEGS ( <i>Tringa flavipes</i> ) Status: Family: Scolopacidae	Breeds in open boreal forest with scattered shallow wetlands. Winters in wide variety of shallow fresh and saltwater habitats.
117	AM. AVOCET ( <i>Recurvirostra americana</i> ) Status: Family: Recurvirostridae	Preferred habitats include freshwater marshes and shallow, marshy lakes. Breeds locally in salt or brackish marshes; often moves to coasts during winter.
118	SOLITARY SAND. ( <i>Tringa solitaria</i> ) Status: USSCP Family: Scolopacidae	Breeds in taiga or boreal bogs, nesting in trees in deserted songbird nests. In migration and winter found along freshwater ponds, stream edges, temporary pools, flooded ditches and fields, more commonly in wooded regions, less frequently on mudflats and open marshes.
119	WILLET ( <i>Catoptrophorus semipalmatus</i> ) Status: Family: Scolopacidae	Summers on coastal marshes in East and prairie marshes in West; winters on coastal marshes, beaches, and mudflats.
120	SPOTTED SAND. ( <i>Actitis macularius</i> ) Status: Family: Scolopacidae	Breeds in a variety of habitats, such as shoreline (rivers, lakes, seashore), sagebrush, grassland, forest, lawn, or park. Territories must include some shoreline of a stream, lake, or pond. Winters wherever water is present.
121	WHIMBREL ( <i>Numenius phaeopus</i> ) Status: BCC, USSCP Family: Scolopacidae	Breeds in various tundra habitat, from wet lowlands to dry heath. In migration, frequents various coastal and inland habitats, including fields and beaches. Winters in tidal flats and shorelines, occasionally visiting inland habitats.
122	RUDDY TURNSTONE ( <i>Arenaria interpres</i> ) Status: USSCP Family: Scolopacidae	Breeds on rocky arctic coasts and tundra. On migration and in winter, mostly along rocky shores, but also sand beaches and mudflats.

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123	RED KNOT ( <i>Calidris canutus</i> ) Status: BCC, USSCP Family: Scolopacidae	Breeds in drier tundra areas, such as sparsely vegetated hillsides. Outside of breeding season, it is found primarily in intertidal, marine habitats, especially near coastal inlets, estuaries, and bays.
124	SANDERLING ( <i>Calidris alba</i> ) Status: USSCP Family: Scolopacidae	Nests on islands and coastal tundra of high Arctic. On migration and in winter prefers sandy beaches.
125	SEMIPLAM. SAND ( <i>Calidris pusilla</i> ) Status: BCC Family: Scolopacidae	Breeds on open tundra, generally near water. Winters and migrates along mudflats, sandy beaches, shores of lakes and ponds, and wet meadows.
126	WESTERN SAND. ( <i>Calidris mauri</i> ) Status: USSCP Family: Scolopacidae	Breeds in coastal sedge-dwarf tundra. Migrates and winters along mudflats, beaches, shores or lakes and ponds, and flooded fields.
127	LEAST SANDPIPER ( <i>Calidris minutilla</i> ) Status: Family: Scolopacidae	Breeds in mossy or wet grassy tundra and tundra near tree line, occasionally in drier areas with scattered scrubby bushes. Migrates and winters in wet meadows, mudflats, flooded fields, shores of pools and lakes, and, less frequently, sandy beaches.
128	WHT-RUMP. SAND. ( <i>Calidris fuscicollis</i> ) Status: Family: Scolopacidae	Breeds in mossy or grassy tundra near water. On migration and during winter found in grassy marshes, mudflats, sandy beaches, flooded fields, and shores of ponds and lakes.
129	DUNLIN ( <i>Calidris alpina</i> ) Status: USSCP (Alaska- East Asian and Alaska- Pacific Coast populations) Family: Scolopacidae	Breeds in wet coastal tundra. Winters along mudflats, estuaries, marshes, flooded fields, sandy beaches, and shores of lakes and ponds.
130	STILT SAND. ( <i>Calidris himantopus</i> ) Status: BCC Family: Scolopacidae	Breeds in sedge tundra near water, often near wooded borders of the taiga. On migration and in winter found along mudflats, flooded fields, shallow ponds and pools, and marshes.
131	COMMON SNIPE ( <i>Gallinago gallinago</i> ) Status: Family: Scolopacidae	Breeds in bogs, fens, swamps, and around the marshy edges of ponds, rivers, and brooks. Forages in marshes, wet meadows, wet fields, and the marshy edges of streams and ditches.

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132	AM. WOODCOCK ( <i>Scolopax minor</i> ) Status: USSCP, GBBDC Family: Scolopacidae	Forests and thickets with openings, shrubby areas, meadows.
133	LAUGHING GULL ( <i>Larus atricilla</i> ) Status: NAWCP Family: Laridae	Nests in marshes, on beaches, and on islands along coast. Found along coasts, in estuaries, bays, and inland lakes. Feeds along the ocean, on rivers, at landfills, and in urban parks.
134	BONAPART'S GULL ( <i>Larus philadelphia</i> ) Status: NAWCP Family: Laridae	Summers in northern coniferous forests. Breeds around lakes and marshes in boreal forest. Winters along lakes, rivers, marshes, bays, beaches along coasts, and inland waterways.
135	RING-BILLED GULL ( <i>Larus delawarensis</i> ) Status: NAWCP Family: Laridae	Nests on islands. Found around fresh water, landfills, golf courses, farm fields, shopping areas, and coastal beaches.
136	HERRING GULL ( <i>Larus argentatus</i> ) Status: NAWCP Family: Laridae	Breeds on islands. Forages and winters at sea, along beaches and mudflats, lakes, rivers, fields, at dumps, and other areas where human-produced food is available. Rests in open areas, including parking lots, fields, and airports.
137	GRT.BLK-BK GULL ( <i>Larus marinus</i> ) *Staus: NAWCP Family: Laridae	Breeds on small islands, salt marshes, spoil islands, and barrier beaches. Most common throughout the year along coast. Travels far out to sea in winter.
138	CASPIAN TERN ( <i>Sterna caspia</i> ) Status: NAWCP Family: Laridae	Breeds in wide variety of habitats along water, such as salt marshes, barrier islands, dredge spoil islands, freshwater lake islands, and river islands. During migration and winter found along coastlines, large rivers and lakes. Roosts on islands and isolated spits.
139	ROYAL TERN ( <i>Sterna maxima</i> ) Status: NAWCP Family: Laridae	Coast.
140	SANDWICH TERN ( <i>Sterna sandvicensis</i> ) Status: NAWCP Family: Laridae	Seacoasts, bays, estuaries, and mudflats, occasionally ocean far from land.
141	COMMON TERN ( <i>Sterna hirundo</i> ) Status: NCWRC-SC, BCC, NAWCP Family: Laridae	Nests on islands, marshes, and sometimes beaches of lakes and ocean.

## Migratory Birds Potentially Occurring In Proposed Project Areas

142	FORSTER'S TERN ( <i>Sterna forsteri</i> ) Status: NAWCP Family: Laridae	Breeds in marshes, generally with lots of open water and large stands of island-like vegetation. Winters in marshes, coastal beaches, lakes, and rivers.
143	LEAST TERN ( <i>Sterna antillarum</i> ) Status: NCWRC-SC, E, BCC, NAWCP Family: Laridae	Seacoasts, beaches, bays, estuaries, lagoons, lakes and rivers, breeding on sandy or gravelly beaches and banks of rivers or lakes, rarely on flat rooftops of buildings.
144	BLACK TERN ( <i>Chlidonias niger</i> ) Status: BCC, NAWCP Family: Laridae	Summers on wet meadows, marshes, ponds; winters on coast and at sea.
145	ROCK DOVE ( <i>Columba livia</i> ) Status: Family: Columbidae	Found around rocky cliffs, urban areas, parks, and agricultural areas.
146	MOURNING DOVE ( <i>Zenaida macroura</i> ) Status: Family: Columbidae	Breeds in variety of open habitats, including agricultural areas, open woods, deserts, forest edges, cities and suburbs.
147	EUR. COLLARED DOVE ( <i>Streptopelia decaocto</i> ) Status: Family: Columbidae	Open country with trees and scrub, usually near cultivated area; also towns. Found in urban, suburban, and agricultural areas where grain is available.
148	YEL-BILL CUCKOO ( <i>Coccyzus americanus</i> ) Status: Family: Cuculidae	Open woodlands with clearings and dense scrubby vegetation, thickets, often along water.
149	EAST.SCREECH-OWL ( <i>Megascops asio</i> ) Status: Family: Strigidae	Found in most habitats with trees--woods, swamps, parks, suburbs or urban areas.
150	GRT.HORNED OWL ( <i>Bubo virginianus</i> ) Status: Family: Strigidae	Found in a wide variety of habitats, but prefers open and secondary-growth woodlands and agricultural areas. Also in boreal forest, desert, and suburban and urban areas.
151	BARRED OWL ( <i>Strix varia</i> ) Status: Family: Strigidae	Forested areas, from swamps and riparian areas to uplands. Prefers large blocks of forest.

## Migratory Birds Potentially Occurring In Proposed Project Areas

152	COM. NIGHTHAWK ( <i>Chordeiles minor</i> ) Status: Family: Caprimulgidae	Forests, plains, urban areas
153	CHUK-WIL'S-WIDOW ( <i>Caprimulgus carolinensis</i> ) Status: BCC Family: Caprimulgidae	Along edges of coniferous or mixed forests; often along rivers.
154	WHIP-POOR-WILL ( <i>Caprimulgus vociferus</i> ) Status: Family: Caprimulgidae	Breeds in deciduous or mixed forests with little or no underbrush--open woods, canyons, dry, brushy areas. Winters in mixed woods near open areas.
155	CHIMNEY SWIFT ( <i>Chaetura pelagica</i> ) Status: Family: Apodidae	Nests in variety of habitats, especially common in urban or rural areas. More rarely in hollow trees. Forages over open areas.
156	R.T. HUMMINGBIRD ( <i>Archilochus colubris</i> ) Status: Family: Trochilidae	Breeds in mixed woodlands and eastern deciduous forest, streams, parks, gardens, and orchards. Winters in tropical deciduous forest, tropical dry forests, scrubland, citrus groves, and second growth.
157	BELT. KINGFISHER ( <i>Megaceryle alcyon</i> ) Status: Family: Alcedinidae	Breeds along streams, rivers, lakes, estuaries, and coastal bays with banks for nest holes. Winters along coast, streams, and lakes.
158	RED-HEAD. WOODPKR ( <i>Melanerpes erythrocephalus</i> ) Status: Family: Picidae	Breeds in deciduous woodlands, especially beech or oak, river bottoms, open woods, groves of dead and dying trees, farmlands, orchards, parks, open country with scattered trees, forest edges, and open wooded swamps with dead trees and stumps. Attracted to burns and recent clearings. Winters in mature stands of forest, especially those with oaks.
159	RED-BELL. WOODPKR ( <i>Melanerpes carolinus</i> ) Status: Family: Picidae	Lives in a variety of dry or damp forests (deciduous or pine) and in suburban areas.
160	DOWNY WOODPKR ( <i>Picoides pubescens</i> ) Status: Family: Picidae	Open deciduous woodlands, especially in riparian areas. Common in human-modified habitats, such as orchards, farmland, parks, and residential areas.
161	HAIRY WOODPECKER ( <i>Picoides villosus</i> ) Status: Family: Picidae	Found in mature woods, small woodlots, wooded parks, and residential areas with large trees.

## Migratory Birds Potentially Occurring In Proposed Project Areas

162	RED-COCKAD.WOOD ( <i>Picoides borealis</i> ) Status: NCWRC-E, PIF Family: Picidae	Open pine forest maintained by frequent fires, especially longleaf pine forests.
163	NORTHERN FLICKER ( <i>Colaptes auratus</i> ) Status: Family: Picidae	Found in open woodlands and forest edge, including cities, parks, suburbs, and farmlands.
164	YEL-BELL. SAPSUCKER ( <i>Sphyrapicus varius</i> ) Status: NCWRC-SC, FSC Family: Picidae	Breeds in young forests and along streams, especially in aspen and birch; also in orchards. Winters in variety of forests, especially semiopen woods.
165	LA.WATERTHRUSH ( <i>Seiurus motacilla</i> ) Status: Family: Parulidae	Breeds along wooded ravines near mountain, gravel-bottomed brooks and streams flowing through hilly, deciduous forest. Winters in similar habitat.
166	N. WATERTHRUSH ( <i>Seiurus noveboracensis</i> ) Status: Family: Parulidae	Breeds in willow thickets near slow-moving streams or rivers, lake shores, wooded ponds, swamps, and bogs; in migration and winter, uses a variety of wooded habitats, generally near water, often in mangroves.
167	KENTUCKY WARBLER ( <i>Oporornis formosus</i> ) Status: Family: Parulidae	Ravines and bottomlands of moist deciduous or mixed woodlands.
168	COM. YEL-THROAT ( <i>Geothlypis trichas</i> ) Status: Family: Parulidae	Common in thick vegetation from wetlands to prairies to pine forests with dense understory.
169	HOODED WARBLER ( <i>Wilsonia citrina</i> ) Status: PIF Family: Parulidae	Dense shrubbery in mature deciduous woodlands, especially near streams.
170	YEL-BRSTED CHAT ( <i>Icteria virens</i> ) Status: Family: Parulidae	Dense second-growth, riparian thickets, and brushy edges in dry or moist areasj.
171	SUMMER TANAGER ( <i>Piranga rubra</i> ) Status: Family: Thraupidae	Breeds in deciduous forests in eastern part of range, especially open woods and near gaps. In Southeast, breeds in pine-oak forests, willows, and cottonwoods along streams. In West, uses riparian woodlands. Winters in wide range of open and second-growth habitats.



## Migratory Birds Potentially Occurring In Proposed Project Areas

172	SCARLET TANAGER ( <i>Piranga olivacea</i> ) Status: Family: Thraupidae	Breeds in deciduous and mixed deciduous/coniferous woodlands, especially mature forests. Occasionally in suburban areas with large trees. Winters in montane evergreen forests.
173	N. CARDINAL ( <i>Cardinalis cardinalis</i> ) Status: Family: Cardinalidae	Areas with shrubs and small trees, including forest edges, hedgerows, and suburbs.
174	ROS-BRSTD GRSEB ( <i>Peucaea ludoviciana</i> ) Status: Family: Cardinalidae	Breeds in deciduous and mixed woodlands, especially at the edges, mixed shrubs and trees, second-growth woodlands, orchards, suburban parks and gardens. Winters in open tropical forest.
175	BLUE GROSBK ( <i>Passerina caerulea</i> ) Status: Family: Cardinalidae	Forest edge, fields, roadsides, power-line cuts, riparian areas, hedgerows, prairies, and other areas with medium-sized trees and low shrub density.
176	INDIGO BUNTING ( <i>Passerina cyanea</i> ) Status: Family: Cardinalidae	Breeds in brushy and weedy areas along edges of cultivated land, woods, roads, power line rights-of-way, and in open deciduous woods and old fields. Winters in weedy fields, citrus orchards, and weedy cropland.
177	PAINTED BUNTING ( <i>Passerina ciris</i> ) Status: BCC, PIF Family: Cardinalidae	Open brushlands, thickets, and scattered woodlands. Along Atlantic coast, also in hedges and yards.
178	EASTERN (RUF-SIDE) TOWHEE ( <i>Pipilo erythrophthalmus</i> ) Status: Family: Emberizidae	Breeds in shrub habitats or open woods with a shrub understory, often in dry environments and open ground. Old fields and forest edges, dune scrub, oak scrub, riparian thickets, and pine flatwoods with saw palmetto. Winters in similar areas and in residential areas.
179	BACHMAN'S SPAR. ( <i>Aimophila aestivalis</i> ) Status: NCWRC--SC and FSC; BCC, PIF Family: Emberizidae	Open pine or oak woods, brushy fields. Found primarily in open pine woods with understory of wiregrass, palmettos, and weeds, and in oak-palmetto scrub, grasslands.
180	CHIPPING SPAR. ( <i>Spizella passerina</i> ) Status: Family: Emberizidae	Breeds in open woodlands with grass, along river and lake shorelines, orchards, farms, and in urban and suburban parks. Winters in similar areas.

## Migratory Birds Potentially Occurring In Proposed Project Areas

181	FIELD SPARROW ( <i>Spizella pusilla</i> ) Status: Family: Emberizidae	Breeds in old fields, woodland openings, open areas with scattered shrubs and small trees, and edges. Winters in fields and forest edges.
182	SAVANNAH SPARROW ( <i>Passerculus sandwichensis</i> ) Status: Family: Emberizidae	Inhabits a wide range of open country or moist tallgrass areas, including meadows, agricultural fields, pastures, salt marshes, beaches, lake and river edges, and tundra. Varied habitats in winter.
183	FOX SPARROW ( <i>Passerella iliaca</i> ) Status: Family: Emberizidae	Deciduous for coniferous woods, brushy areas, woods edges or second-growth forests or chaparral.
184	GRASSHOPPER SPAR ( <i>Ammodramus savannarum</i> ) Status: Family: Emberizidae	Open grasslands, prairies, dry weedy fields, old pastures, hayfields with patches of bare ground.
185	SLTMRSH SHARP-TAIL SPAR. ( <i>Ammodramus caudacutus</i> ) Status: BCC Family: Emberizidae	Salt and fresh-water marshes, wet meadows, lakeshores.
186	NELSON'S SHARP-TAIL SPAR. ( <i>Ammodramus nelsoni</i> ) Status: BCC Family: Emberizidae	Freshwater marshes, lakeshores, and wet meadows in interior and brackish marshes along coast; in winter in salt and brackish marshes.
187	SEASIDE SPARROW ( <i>Ammodramus maritimus</i> ) Status: BCC Family: Emberizidae	Salt marshes, especially spartina grass, rushes, and tidal reeds; "Cape Sable" Seaside Sparrow in marsh prairie.
188	WHT-CRWN SPARROW ( <i>Zonotrichia leucophrys</i> ) Status: Family: Emberizidae	Breeds in tundra, boreal forest, and alpine meadows over most of range. On West Coast is found in suburban areas and near the ocean in areas with bare ground and shrubs, woods, gardens, and parks.
189	SWAMP SPARROW ( <i>Melospiza georgiana</i> ) Status: Family: Emberizidae	Various wetlands, including freshwater and tidal marshes, bogs, meadows, and swamps. Winters also in damp fields with tall grass.

## Migratory Birds Potentially Occurring In Proposed Project Areas

190	SONG SPARROW ( <i>Melospiza melodia</i> ) Status: Family: Emberizidae	Dense shrubs at the edge of open areas such as fields, lawns, or streams. Especially near water in arid regions
191	WHT-THROAT SPAR. ( <i>Zonotrichia albicollis</i> ) Status: Family: Emberizidae	Breeds in coniferous and mixed forests with numerous openings and low, dense vegetation. In winter and in migration found in dense cover, along woodlots, in fence rows, swamps, weedy fields, parks, and in urban areas.
192	BOBOLINK ( <i>Dolichonyx oryzivorus</i> ) Status: Family: Icteridae	Breeds in open grasslands and hay fields. In migration and in winter uses freshwater marshes, grasslands, rice and sorghum fields.
193	RED-WING BLKBIRD ( <i>Agelaius phoeniceus</i> ) Status: Family: Icteridae	Breeds in a variety of wetland and grassy areas, including marshes, meadows, alfalfa fields, and open patches in woodlands.
194	RUSTY BLKBIRD ( <i>Euphagus carolinus</i> ) Status: Family: Icteridae	Breeds in wet forests, including areas with fens, bogs, muskeg, and beaver ponds. Winters in swamps, wet woodlands, pond edges, and woods or fields near water.
195	EAST.MEADOWLARK ( <i>Sturnella magna</i> ) Status: Family: Icteridae	Grasslands, meadows, pastures, and hayfields, as well as croplands, golf courses, and other open habitat.
196	BOAT-TAIL GRACKLE ( <i>Quiscalus major</i> ) Status: Family: Icteridae	Found in freshwater and salt marshes, open upland habitats, parks, lakes, cities, and agricultural fields, usually near the coast. Nests in marshes.
197	COMMON GRACKLE ( <i>Quiscalus quiscula</i> ) Status: Family: Icteridae	Found in a variety of open areas with scattered trees, including open woodland, boreal forest, swamps, marshes, agricultural areas, urban residential areas, and parks.
198	BRN-HEAD COWBIRD ( <i>Molothrus ater</i> ) Status: Family: Icteridae	Breeds in areas with grassland and low or scattered trees, such as woodland edges, brushy thickets, fields, prairies, pastures, orchards, and residential areas.
199	ORCHARD ORIOLE ( <i>Icterus spurius</i> ) Status: BCC Family: Icteridae	Nests in gardens, orchards, open woods, wetlands, suburban areas, parks, along streams and lakes, and in large planted trees near houses. In winter found in tropical forests.

## Migratory Birds Potentially Occurring In Proposed Project Areas

200	HOUSE FINCH ( <i>Carpodacus mexicanus</i> ) Status: Family: Fringillidae	In the East, found almost exclusively in urban and suburban habitats, especially in areas with buildings, lawn, and small conifers. In West, found around people, but also in desert, chaparral, oak savanna, riparian areas, and open coniferous forests.
201	PINE SISKIN ( <i>Carduelis pinus</i> ) Status: Family: Fringillidae	Breeds in open coniferous forests. Also in shrub thickets, suburban yards, parks, cemeteries, and in mixed coniferous-deciduous tree associations. Prefers conifers in migration and winter.
202	AM. GOLDFINCH ( <i>Carduelis tristis</i> ) Status: Family: Fringillidae	Breeds in weedy fields, roadsides, orchards, farms, and gardens. Winters in weedy, open areas with some shrubs and trees, and moves into urban and suburban areas to eat at feeders.
203	HOUSE SPARROW ( <i>Passer domesticus</i> ) Status: Family: Passeridae	Found in human modified habitats: parks, farms, residential, and urban areas.

NAWMP: North American Waterfowl Management Plan

GBBDC: Game Birds Below Desired Condition (MBTA: Migratory Bird Treaty Act)

NCWRC: NC Wildlife Resources Commiss.

(FSC-Fed Sp Concern, SC-St Sp Concern, E-endangered, or T-threatened)

BCC: Birds of Conserv Concern

PIF: Partners in Flight

USSCP: U.S. Shorebird Conserv Plan

NAWCP: North American Waterbird Conserv Plan

## **APPENDIX B NEGATIVE DETERMINATION FOR COASTAL ZONES**

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## UNITED STATES MARINE CORPS

MARINE CORPS BASE  
PSC BOX 20004  
CAMP LEJEUNE, NORTH CAROLINA 28542-0004

IN REPLY REFER TO:  
5090.11.2

BEMD

**JUN 02 2008**

Mr. Stephen Rynas, Consistency Program Coordinator  
North Carolina Department of Environment  
and Natural Resources  
Division of Coastal Management  
151-B Hwy 24, Hestron Plaza II  
Morehead City, North Carolina 28557-2518

Dear Mr. Rynas:

The United States Marine Corps proposes to construct temporary facilities to accommodate the immediate increases in Marine forces in support of the Marine Corps Grow the Force initiative.

In accordance with Section 307 (c) (1) of the Federal Coastal Zone Management Act of 1972 as amended, MCB Camp Lejeune has determined that the proposed action is consistent with North Carolina's Coastal Management Program. The proposed activity on MCB Camp Lejeune complies with the relevant enforceable policies of North Carolina's approved Coastal Management Program and will be conducted in a manner consistent with the program.

A Negative Determination is enclosed for your review. If you have any questions or require additional information please contact Mr. Martin Korenek, Environmental Conservation Branch, (910) 451-7235 or martin.korenek@usmc.mil

Sincerely,

A handwritten signature in black ink, appearing to read "John R. Townson".

JOHN R. TOWNSON  
Director, Environmental Management  
By direction of  
the Commanding Officer

Enclosure:

1. Negative Determination for Construction of Temporary Facilities at Marine Corps Base Camp Lejeune, North Carolina

**RECORD OF NEGATIVE DETERMINATION  
FOR CONSTRUCTION OF TEMPORARY FACILITIES  
AT MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA**

May 2008

The United States Marine Corps (USMC) has determined that implementing the proposed action would not result in any impacts to North Carolina's coastal zone.

**1.0 FEDERAL AGENCY PURPOSE AND ACTION**

The USMC proposes to accommodate immediate increases in Marine forces at Marine Corps Base (MCB) Camp Lejeune, Onslow County, North Carolina, in a combination of existing and newly constructed temporary facilities until the decision to construct permanent facilities for these Marines is made. Use of existing and newly constructed temporary facilities would expedite the placement and accommodation of incoming new Marines in support of the Marine Corps Grow the Force initiative and would satisfy the immediate requirements to place incoming forces per the Presidential proposal authorized by Congress.

All of the proposed temporary facilities would be constructed within the Base's boundaries, and most construction would occur on developed areas, on or near previously disturbed sites, or in locations with similar missions with respect to operations, training, administration, warehousing, storage, and maintenance activities (See Figure 1). The proposed facilities would eventually be removed once permanent facilities are constructed, with the exception of paved areas. Pre-engineered buildings (PEBs), although considered temporary structures, are more durable than other types of temporary facilities and may be utilized for a longer duration. Under the proposed action, construction would occur at four different project areas. The facilities would be built over a 3-year period beginning in 2008.

MCB Camp Lejeune proposes to build temporary facilities for the following units: 4<sup>th</sup> Reconnaissance Platoon; Company E, 2<sup>d</sup> Amphibious Assault Battalion; Consolidated Base Military Police (MP)/Military Headquarters Group MP Logistics Command Element; Counter-Battery Radar Platoon; Battery F, 2<sup>d</sup> Artillery Battalion; Battery G, 2<sup>d</sup> Artillery Battalion; and Civil Affairs. The Counter-Battery Radar Platoon; Battery F, 2<sup>d</sup> Artillery Battalion; Battery G, 2<sup>d</sup> Artillery Battalion; and Civil Affairs facilities are located in the same project area.

Project area boundaries were identified for each of the proposed temporary facilities to show the geographical area of consideration. Within the proposed project areas, probable locations for facility types were identified based on conceptual designs. The actual locations for the temporary facilities are subject to change as the design process continues, but the overall proposed project area would not change. The total area associated with the proposed project areas for all of the temporary facilities is approximately 72 hectares (ha) (177 acres [ac]) which allows for minor adjustments in facility layout. The total maximum area required for facility layout is approximately 21 ha (52 ac).

The proposed project area for the 4<sup>th</sup> Reconnaissance Platoon would be located just south and west of Sneads Ferry Road (NC 172) and Courthouse Road (see Figures 2 and 4). The proposed area of consideration is approximately 8 ha (20 ac). The estimated maximum area required for the facilities is approximately 2.4 ha (6 ac). Within the proposed project area, MCB Camp Lejeune would construct facilities to support supply and operational functions. These facilities would likely include a pre-engineered supply warehouse, portable armory for weapons storage, and parking areas.



The proposed project area for the Company E, 2<sup>d</sup> Amphibious Assault Battalion facilities would be located across from the 4<sup>th</sup> Reconnaissance Platoon on the east side of Courthouse Road and south of Sneads Ferry Road (NC 172) (see Figures 2 and 5). The area of consideration is approximately 15 ha (36 ac) but the estimated maximum area required for the facilities is approximately 1.8 ha (4.4 ac). Within the proposed project area, MCB Camp Lejeune would construct facilities to support administrative, supply and operational functions. The facilities would likely include portable trailers for administrative and classroom functions, a pre-engineered supply warehouse, hazardous materials storage units, portable armories in the vicinity of Building A73, and parking areas.

The Consolidated Base MP/Military Headquarters Group MP Logistics Command Element facilities include two projects that would be co-located within the same proposed project area in an isolated parcel off Old Sawmill Road (see Figures 3 and 6). The proposed project area is approximately 29 ha (72 ac) but the estimated maximum area required for the facilities is approximately 12 ha (30 ac). The dominant forest community type at this site is loblolly pine. The two MP group projects would include facilities such as dog kennels and dog runs, a dog cemetery, portable trailers for administrative functions, portable armories, pre-engineered buildings for storage and supplies, and parking areas.

The proposed project area for the Counter-Battery Radar Platoon; Battery F, 2<sup>d</sup> Artillery Battalion; Battery G, 2<sup>d</sup> Artillery Battalion; and Civil Affairs facilities would be located near the Hadnot Point area of the Base, west of Sneads Ferry Road (NC 172) and transected by Louis Road, Franklin Street, and O Street (see Figures 3 and 7). The proposed project area is approximately 20 ha (49 ac) but the estimated required area for facility layout is approximately 5 ha (12 ac). The temporary facilities would support administrative, operations, and supply functions. These facilities would likely include portable trailers for administrative functions, pre-engineered supply warehouse and survey/metro facility, portable armories, hazardous materials storage locker, and parking areas.

Site work at all of the proposed temporary facilities would include clearing/grubbing, grading, asphalt paving, storm water management, security lighting, and security fencing. The necessary utility connections would include electricity, water, sewer, and telecommunication capabilities.

## **2.0 NORTH CAROLINA COASTAL AREA MANAGEMENT ACT**

In 1972, Congress passed the Coastal Zone Management Act, which encouraged states to keep the coasts healthy by establishing programs to manage, protect, and promote the country's fragile coastal resources. Two years later, the North Carolina General Assembly passed the landmark Coastal Area Management Act (CAMA). CAMA established the Coastal Resources Commission, required local land use planning in 20 coastal counties, and provided for a program for regulating development. The North Carolina Coastal Management Program was federally approved in 1978 by the National Oceanic and Atmospheric Administration.

### **2.1 AREAS OF ENVIRONMENTAL CONCERN**

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 Onslow County. There are two tiers within this boundary. The first tier is comprised of Areas of Environmental Concern (AECs) designated by the state. AECs have more thorough regulatory controls and include coastal wetlands, coastal estuarine waters, public trust areas, coastal estuarine shorelines, ocean beaches, frontal dunes, ocean erosion areas, inlet lands, small surface water supply watersheds, public water supply well fields, and

fragile natural resource areas. The second tier includes land uses with the potential to affect coastal waters, even though they are not defined as AECs. The coastal zone extends seaward to the three nautical mile territorial sea.

An AEC is an area of natural importance and its classification protects the area from uncontrolled development. AECs include almost all coastal waters and about three percent of the land in the 20 coastal counties. The four categories of AECs 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.

MCB Camp Lejeune includes coastal resources designated as AECs, including estuarine coastal waters, coastal shorelines, and coastal wetlands of the Estuarine and Ocean System AEC, as well as habitat for federal or state designated species and archaeological or historic resources of the Natural and Cultural Resource Area AEC (See Figures 1, 2, and 3). The New River is designated as coastal estuarine water. Furthermore, all land located within 23 meters (75 feet) of the normal high water level of coastal waters and within 9 meters (30 feet) of the normal high water level of inland water is also considered to be coastal shoreline within the Estuarine and Ocean System AEC. Coastal wetlands are located along much of MCB Camp Lejeune's estuarine waters including the vicinity of the 4<sup>th</sup> Reconnaissance Platoon and Company E, 2<sup>d</sup> Amphibious Assault Battalion project areas; however, no estuarine wetlands are present within the proposed project areas. The proposed project areas are all outside of these AECs. Habitat that supports threatened and endangered species are considered a coastal resource under the Natural and Cultural Resource Area AEC. The proposed project area for the Consolidated Base MP/Military Headquarters Group MP Logistics Command Element is located entirely within an area designated by MCB Camp Lejeune as future habitat for the red-cockaded woodpecker, but the area currently does not support any red-cockaded woodpeckers.

Other coastal resources not designated as AECs in the vicinity of the project area include primary nursery areas and special secondary nursery areas. A portion of the proposed project area for the 4<sup>th</sup> Reconnaissance Platoon facilities is located adjacent to an area designated as a primary nursery area; however, this designation was based on Geographic Information System data that is not currently up to date. Site reconnaissance demonstrates that the area is highly disturbed and characterized primarily by uplands; thus the quality of the habitat is likely not as high as other areas (See Figure 2). The primary nursery area and wetlands are located outside of the proposed construction area.

Following is an analysis of the applicability of policies designed to protect AECs and the USMC's determination of no impact to North Carolina's coastal zone.

### **2.1.1 15A NCAC 07H .0200 (Estuarine and Ocean Systems)**

15A NCAC 07H .0205 defines and establishes management objectives for coastal wetlands "to conserve and manage coastal wetlands so as to safeguard and perpetuate their biological, social, and economic and aesthetic values; to coordinate and establish a management system capable of conserving and utilizing

coastal wetlands as a natural resource essential to the functioning of the entire estuarine system.” There are no estuarine wetlands located within the proposed project areas. Palustrine wetlands are located in each of the four project areas and would be avoided by proper site planning. Also, the overall function of the wetlands in the vicinity of the proposed project areas would not be affected; therefore there would be no impact to the coastal wetlands.

15A NCAC 07H .0206 defines and establishes management objectives for estuarine waters in order “to conserve and manage the important features of estuarine waters so as to safeguard and perpetuate their biological, social, aesthetic, and economic values; to coordinate and establish a management system capable of conserving and utilizing estuarine waters so as to maximize their benefits to man and the estuarine and ocean system.” The proposed project areas are not located directly within any estuarine or ocean systems. The proposed action would not impact coastal water quality and is further discussed in Section 2.2.7. Stormwater management plans, including the use of best management practices during construction, would control surface water runoff from entering into the adjacent waterways; therefore, no impact would occur as the proposed action is not expected to cause any runoff that might enter estuarine waters.

15A NCAC 07H .0207 defines and establishes management objectives for public trust areas, in order “to protect public rights for navigation, recreation, and to conserve and manage public trust areas in a manner that safeguards and perpetuates their biological, economic, and aesthetic values.” Public rights for navigation and recreation of public trust waters would be protected as no loss of public trust waters would result from the proposed action. Construction of these projects would not impact coastal resources or prohibit access to coastal resources by the public.

#### **2.1.2 15A NCAC 07H .0300 (Ocean Hazard Areas)**

15A NCAC 07H .0303 defines and establishes management objectives for ocean hazard areas “to eliminate unreasonable danger to life and property and achieve a balance between the financial, safety, and social factors that are involved in hazard area development.” The proposed project areas are not within an ocean hazard area; therefore, policies on ocean hazard areas are not applicable.

#### **2.1.3 15A NCAC 07H .0400 (Public Water Supplies)**

15A NCAC 07H .0403 defines and establishes management objectives for public water supplies. The objective in regulating development within critical water supply areas is the “protection and preservation of public water supply well fields and A-II streams and to coordinate and establish a management system capable of maintaining public water supplies so as to perpetuate their values to the public health, safety, and welfare.” There are no public water supply wells, well fields or small surface water supply watersheds within the project area; therefore, policies on protecting public water supplies are not applicable.

#### **2.1.4 15A NCAC 07H .0500 (Natural and Cultural Resource Areas)**

15A NCAC 07H .0501 defines fragile coastal natural and cultural resource areas as “areas containing environmental, natural, or cultural resources of more than local significance in which uncontrolled or incompatible development could result in major or irreversible damage to natural systems or cultural resources, scientific, educational, or associative values, or aesthetic qualities.” The AECs within this

## Record of Negative Determination

category are coastal complex natural areas, coastal areas that sustain remnant species, unique coastal geologic formations, significant coastal architectural resources, and significant coastal historic architectural resources.

NCAC 07H .0505 defines and establishes management objectives “to protect unique habitat conditions that are necessary to the continued survival of threatened and endangered native plants and animals and to minimize land use impacts that might jeopardize these conditions.” The proposed project area for the Consolidated Base MP/Military Headquarters Group MP Logistics Command Element facilities is located within areas designated by MCB Camp Lejeune as future habitat for red-cockaded woodpeckers; however, this area is currently not suitable for red-cockaded woodpeckers as it is a young loblolly pine plantation in a previously disturbed area. The nearest red-cockaded woodpecker cluster is located approximately 2.6 kilometers (1.6 miles) east of the project area (See Figure 3). The adverse impacts to wildlife would not be expected to affect the stability of wildlife populations on Base or migratory bird populations and coordination with United States Fish and Wildlife Service would take place prior to implementing the proposed action; therefore, there would be no impact to these coastal resources.

15A NCAC 07H .0506 defines and establishes management objectives “to protect the features of a designated coastal complex natural area in order to safeguard its biological relationships, educational and scientific values, and aesthetic qualities.” MCB Camp Lejeune has two designated natural areas that have been registered by the North Carolina Natural Heritage Program: the CF Russell Longleaf Pine Natural Area and the Wallace Creek Natural Area. Both natural areas are located well beyond the proposed project area boundaries; therefore, this policy is not applicable.

15A NCAC 07H .0507 defines and establishes management objectives “to preserve unique resources of more than local significance that function as key physical components of natural systems, as important scientific and educational sites, or as valuable scenic resource.” This policy is not applicable as no unique geological formations are designated on MCB Camp Lejeune.

15A NCAC 07H .0508 defines and establishes use standards for development in designated fragile coastal natural or cultural areas. The proposed project areas are not within a designated fragile coastal natural or cultural resource area. Implementing the proposed action would not cause irreversible damage to natural systems or cultural resources, scientific, educational, or associative values, or aesthetic qualities; therefore, this policy is not applicable.

15A NCAC 07H .0509 defines and establishes management objectives “to conserve coastal archaeological resources of more than local significance to history or prehistory that constitute important scientific sites, or are valuable educational, associative, or aesthetic resources.” Based on predictive models and previous field surveys, MCB Camp Lejeune, in consultation with the North Carolina State Historic Preservation Office, has identified all the areas within the installation boundary with high probability archaeologically sensitive soils. Archaeological surveys of all high probability soils within the project areas have been conducted. Based on these surveys and various project specific surveys, no archaeological sites have been identified as occurring within the project area; therefore, this policy is not applicable.

15A NCAC 07H .0510 defines and establishes management objectives “to conserve coastal historic architectural resources of more than local significance which are valuable educational, scientific, associative or aesthetic resources.” No significant coastal historic architectural resources are located within the project areas; therefore, this policy is not applicable.

## **2.2 GENERAL POLICY GUIDELINES**

The North Carolina CAMA sets forth 11 General Policy Guidelines, addressing:

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

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. Following is an analysis of the applicability of these policies to the proposed action and the project's lack of impact on North Carolina's coastal zone.

### **2.2.1 15A NCAC 7M .0200 (Shoreline Erosion Policies)**

No shorelines are included in the project area for the proposed action; therefore, these policies are not applicable (See Figure 1).

### **2.2.2 15A NCAC 7M .0300 (Shorefront Access Policies)**

MCB Camp Lejeune is a military base where the public has not had historic beach access or uncontrolled water access (boat launches). Additionally the proposed action does not involve any activities which would change the public's ability to access the beach or water; therefore, these policies are not applicable.

### **2.2.3 15A NCAC 7M .0400 (Coastal Energy Policies)**

The proposed action does not involve the development of any major energy facilities; therefore, these policies are not applicable.

### **2.2.4 15A NCAC 7M .0500 (Post-disaster Policies)**

These policies require that all state agencies prepare for disasters and to coordinate their activities in the event of a coastal disaster. MCB Camp Lejeune Base Order P3440.6E Destructive Weather Manual addresses how MCB Camp Lejeune would prepare for and respond to a potential disaster which includes: assigning responsibilities, and providing guidance by which the Department of Defense responds to all hazards in accordance with 42 United States Code (U.S.C.) 5121, the Civil Defense Act of 1950 50

U.S.C., National civil defense policy, and federal and state civil defense programs in cooperation with the Federal Emergency Management Agency; prescribing the basic warnings and conditions of readiness for destructive weather, and providing the capstone doctrine for United States Army and USMC domestic support operations, and provides general information for planning and conducting such operations, and identifies relationships between federal, state, and local organizations, and military services. However, these policies are not applicable as no pre-disaster planning or post-disaster recovery would be needed for the proposed action.

#### **2.2.5 15A NCAC 7M .0600 (Floating Structure Policies)**

No floating structures are included in the proposed action; therefore, these policies are not applicable.

#### **2.2.6 15A NCAC 7M .0700 (Mitigation Policy)**

North Carolina's mitigation policy states that "Coastal ecosystems shall be protected and maintained as complete and functional systems by mitigating the adverse impacts of development as much as feasible, by enhancing, creating, or restoring areas with the goal of improving or maintaining ecosystem function and areal proportion." Impacts would be minimized through 1) proper site planning, 2) site selection, and 3) compliance with development standards.

There would be no specific mitigation for upland forest habitat and wildlife losses due to development of the temporary facilities. Of the 21 ha (52 ac) required for facility layout, the amount of new disturbance (forest clearing) could range from approximately 8 ha (20 ac) to 15 ha (38 ac), depending upon final design layout. The loss of upland forest habitat is recognized as a locally important impact; however, in an ecosystem context MCB Camp Lejeune is actively working to maintain complete and functional ecosystems within the state's coastal zone. MCB Camp Lejeune's participation with the state of North Carolina and other conservation partners in a long-term encroachment partnering strategy has resulted in preservation of 1,546 ha (3,820 ac) of coastal lands identified by federal, state, and non-governmental partners as having significant or unique natural resources. The USMC has contributed over \$10 million to restrict development and conserve wildlife habitat on large land tracts adjacent to and in the vicinity of MCB Camp Lejeune in support of regional conservation initiatives.

The proposed construction activities for the Consolidated Base MP/Military Headquarters Group MP Logistics Command Element facilities would impact, at the maximum, 4 ha (10 ac) of forested area designated by MCB Camp Lejeune as future habitat for the red-cockaded woodpecker; however, this area does not currently support any red-cockaded woodpeckers. As stated in Section 2.1.4, the adverse impacts to wildlife would not be expected to affect the stability of wildlife populations on Base or migratory bird populations. Any fencing that would be constructed around the facilities would be designed so as to not impede wildlife movement. MCB Camp Lejeune would coordinate with the United States Fish and Wildlife Service prior to implementing the proposed action to obtain concurrence that the proposed action is not likely to adversely affect any threatened and endangered species. State protected species may also occur in the proposed project areas and less mobile species would experience direct mortality.

Although palustrine wetlands are present within each of the four proposed project areas, conceptual designs for the actual facility layouts would avoid these wetlands. Wetlands outside the project areas would be protected from direct and indirect impacts. These areas would remain undeveloped and be managed in accordance with the installation's state and federal agency approved Integrated Natural

Resources Management Plan. As stated in Section 2.2.7, stormwater runoff would be managed and controlled, thereby preventing siltation of nearby wetlands.

If during construction and site grading any site of potential historical or archaeological significance is encountered, the Director, Environmental Management would be notified. The Director, Environmental Management would order actions in the vicinity halted and the area marked. The Director, Environmental Management would immediately notify the Base archaeologist.

Best management practices would be used to avoid and minimize the release of sediments into stormwater. Mitigation plans would include both short-term (construction phase) and long-term (project life) features. MCB Camp Lejeune, Base Order P5090.2A, Chapter 11, requires the use of native plants in landscaping. Native plant species would be used for landscaping to the extent practicable. No non-native, invasive vegetation would be used in any temporary or permanent landscaping.

Permits and approvals for the proposed action include:

- Erosion and Sedimentation Control Plan approval by North Carolina Department of the Environment and Natural Resources, Division of Land Resources, Land Quality Section; and
- Stormwater Management Permit from the North Carolina Department of Environment and Natural Resources, Division of Water Quality.

With the above mitigation and minimization measures in place, there would be no impact to the coastal zone.

### **2.2.7 15A NCAC 7M .0800 (Coastal Water Quality Policies)**

The proposed construction activities would not result in impacts to coastal water quality. Stormwater runoff would be managed and controlled in accordance with the proposed action's state approved Erosion and Sedimentation Control Plan, state issued Stormwater Management Permit for Construction, and effective MCB Camp Lejeune's National Pollutant Discharge Elimination System permit requirements. MCB Camp Lejeune is currently operating under a National Pollutant Discharge Elimination Phase I permit. A National Pollutant Discharge Elimination System Phase II permit is anticipated to be issued within 2008.

Best management practices would be used to avoid contamination of stormwater and mitigate for both short-term (construction phase) and long-term (project life) impacts. Short-term practices would include erosion and sedimentation controls. Prior to construction, approval would be obtained from the North Carolina Department of Environment and Natural Resources on all plans. Erosion and sedimentation control devices could include sediment fences, dust suppressors, and temporary seeding and matting. Long-term measures would include planting grass on bare areas, landscaping in select areas with native species to the maximum extent practicable, and building stormwater retention ponds. This vegetation and structural stormwater control devices would aid in the control of stormwater runoff and ensure effective and continuous control of erosion and pollution. Impacts to water quality would be further avoided by adherence to standard procedures governing hazardous materials during the construction phase and for the duration of the project.

The New River (Courthouse Bay) is considered a coastal water and is located to the south of the proposed project area for the Company E, 2<sup>d</sup> Amphibious Assault Battalion facilities. All waters draining to the New River north of Grey Point are considered nutrient sensitive waters. The New River and most tributary streams of the New River south of the city of Jacksonville have the additional designation of

high quality water (15A NCAC 3N.0002) and primary nursery areas (15A NCAC 3N.0002); however, the section of the New River nearest to the proposed project area is not designated as any type of nursery area.

A designated primary nursery area is located within a palustrine wetland that is adjacent to the proposed project area for the 4<sup>th</sup> Reconnaissance Platoon facilities; however, this designation was based on Geographic Information System data that is not currently up to date. Site reconnaissance demonstrates that the area is highly disturbed and characterized primarily by uplands; thus the quality of the habitat is likely not as high as other areas. The primary nursery area would not be affected by adjacent construction as proper erosion and sedimentation control devices would be implemented.

As a result, the proposed action would not impact coastal water quality.

#### **2.2.8 15A NCAC 7M .0900 (Policies on Use of Coastal Airspace)**

No use of coastal airspace would be part of the proposed action; therefore, these policies are not applicable.

#### **2.2.9 15A NCAC 7M .1000 (Policies on Water- and Wetland-Based Target Areas for Military Training Areas)**

No water-based or wetland-based target areas or military training areas would be part of the proposed action; therefore, these policies are not applicable.

#### **2.2.10 15A NCAC 7M .1100 (Policies on Beneficial Use and Availability of Materials Resulting From the Excavation or Maintenance of Navigational Channels)**

No excavation or maintenance of navigational channels would be required for the proposed action; therefore, these policies are not applicable.

#### **2.2.11 15A NCAC 7M.1200 (Policies on Ocean Mining)**

No ocean mining would be part of the proposed action; therefore, these policies are not applicable.

### **3.0 ONSLOW COUNTY COASTAL MANAGEMENT POLICIES**

The CAMA required local governments in each of the 20 coastal counties in the state to prepare and implement a land use plan and ordinances for its enforcement consistent with established federal and state policies. Specifically, policy statements are required on resource protection; resource production and management; economic and community development; continuing public participation; and storm hazard mitigation, post-disaster recovery, and evacuation plans. Upon approval by the North Carolina Coastal Resources Commission, the plan becomes part of the *North Carolina Coastal Management Plan*.

Onslow County's *Citizens' Comprehensive Plan for Onslow County*, adopted in 2003, addresses land use planning in relation to the CAMA. Table 1 contains a list of Onslow County's comprehensive plan



policies and their applicability to this project. The proposed action at MCB Camp Lejeune would have no impact on the coastal resources protected by the applicable policies of the North Carolina Coastal Management Program and Onslow County's comprehensive plan policies for the reasons described throughout this Record of Negative Determination.

**Table 1: Onslow County Comprehensive Plan Policies**

Land Use and Development Policies	Applicability
Preferred Development Pattern	Not Applicable
Housing and Neighborhood Development	Not Applicable
Commercial and Office Development	Not Applicable
Industrial Development	Not Applicable
Agricultural and Rural Area Preservation	Not Applicable
Waterfront and Waterborne Development	Not Applicable
Infrastructure and Service Policies	Applicability
Transportation	No Impact
Water and Sewer Services	No Impact
Stormwater Management, Drainage and Flooding	No Impact
Solid Waste Management	No Impact
Natural Resources Management and Use Policies	Applicability
Areas of Environmental Concern	No Impact
Estuarine and Ocean Resources	No Impact
Ocean Hazard System Areas of Environmental Concern	Not Applicable
Public Water Supply Areas of Environmental Concern	Not Applicable
Natural and Cultural Resource Areas	No Impact
Other Important Natural Resource Areas	No Impact
Water Resources, Surface and Ground	No Impact
Wetlands and Hydric Soils	No Impact
Economy and Culture Policies	Applicability
Economic Development	Not Applicable
The Military and the Community	No Impact
Educational Facilities	Not Applicable
Parks and Recreation Facilities	Not Applicable
Cultural History, Historic Preservation/Revitalization	Not Applicable
Community Appearance	Not Applicable

#### 4.0 CONCLUSION

In conclusion, after careful consideration of the proposed action, the USMC has determined that the proposed temporary beddown facilities would not impact North Carolina's coastal zone. This was based on the review of the proposed projects against the relevant National Oceanographic Atmospheric Administration-approved enforceable policies of the North Carolina's Coastal Management Program and Onslow County's comprehensive plan policies.

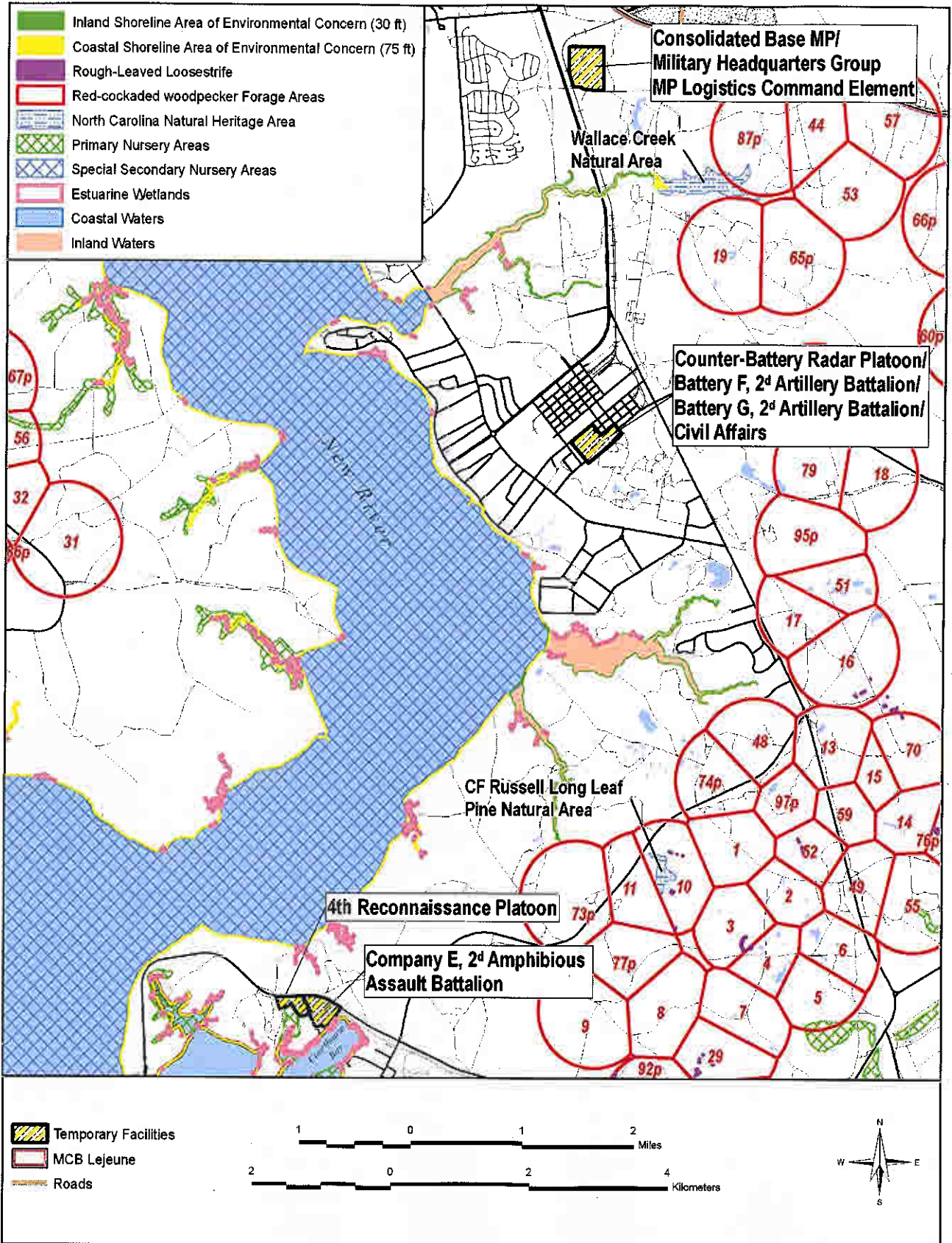
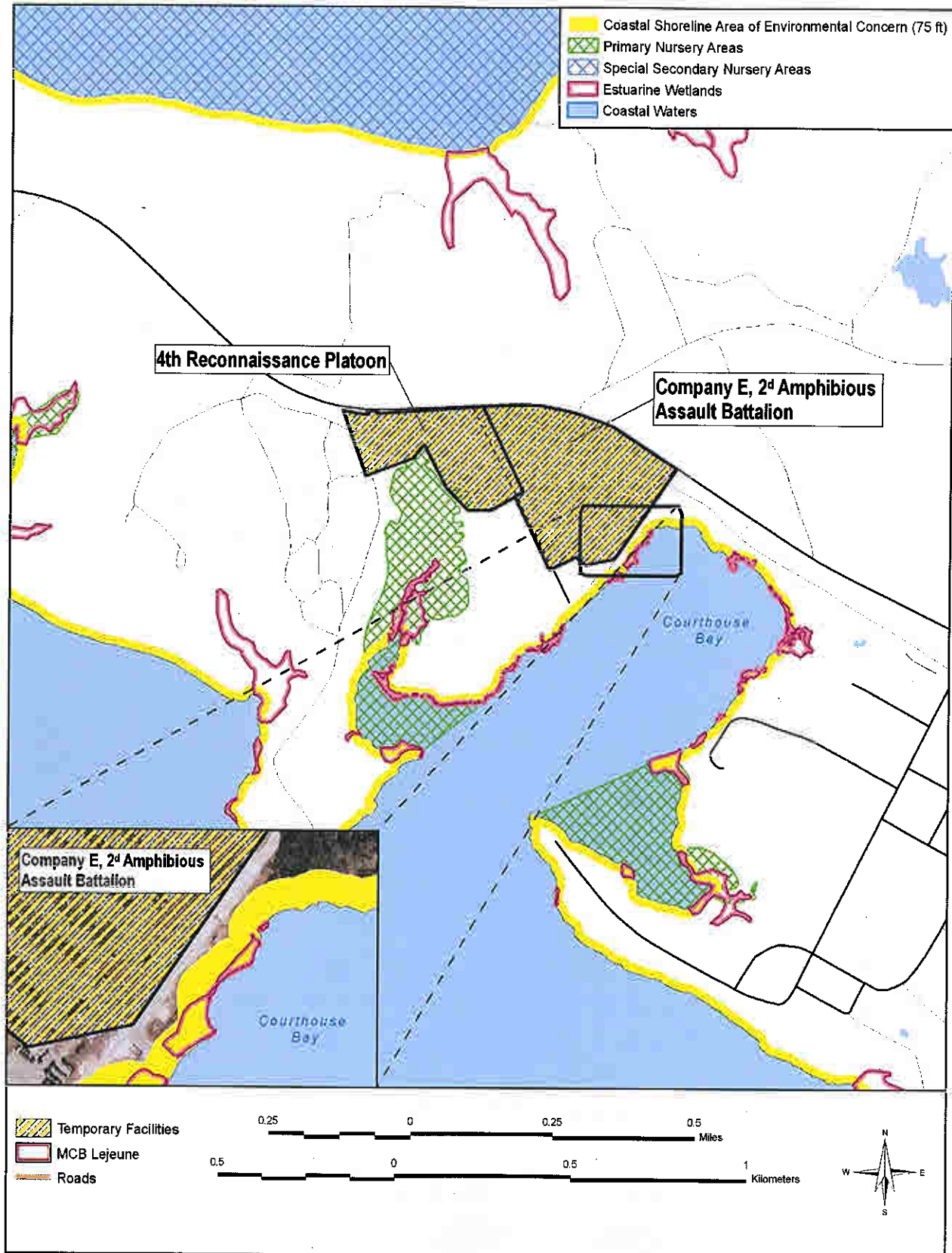
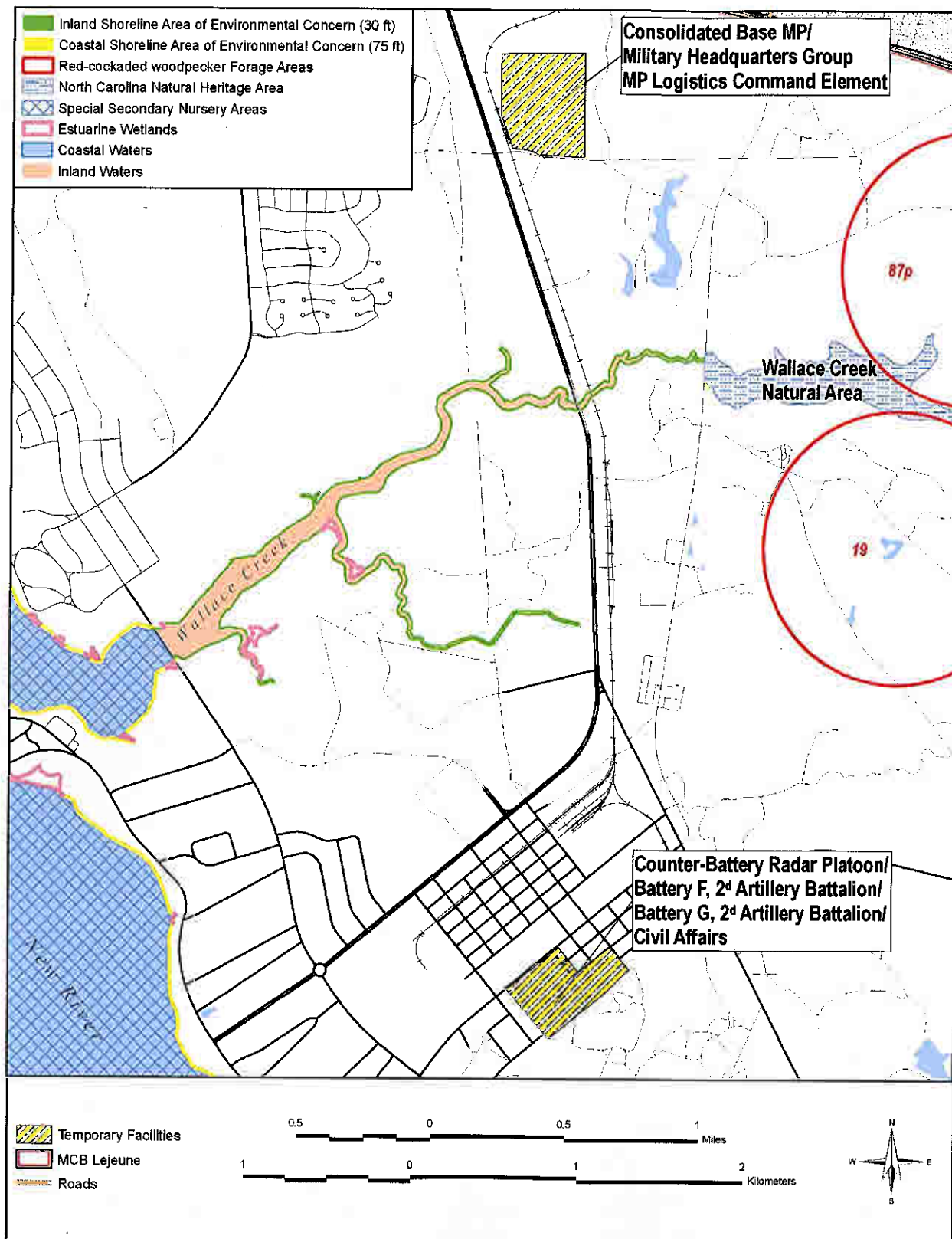


Figure 1 Coastal Resources



**Figure 2 Coastal Resources Surrounding the 4<sup>th</sup> Reconnaissance Platoon and Company E, 2<sup>d</sup> Amphibious Assault Battalion Facilities**



**Figure 3 Coastal Resources Surrounding Consolidated Base Military Police/Military Headquarters Group MP Logistics Command Element; Counter-Battery Radar Platoon; Battery F, 2<sup>d</sup> Artillery Battalion; Battery G, 2<sup>d</sup> Artillery Battalion; and Civil Affairs Facilities**

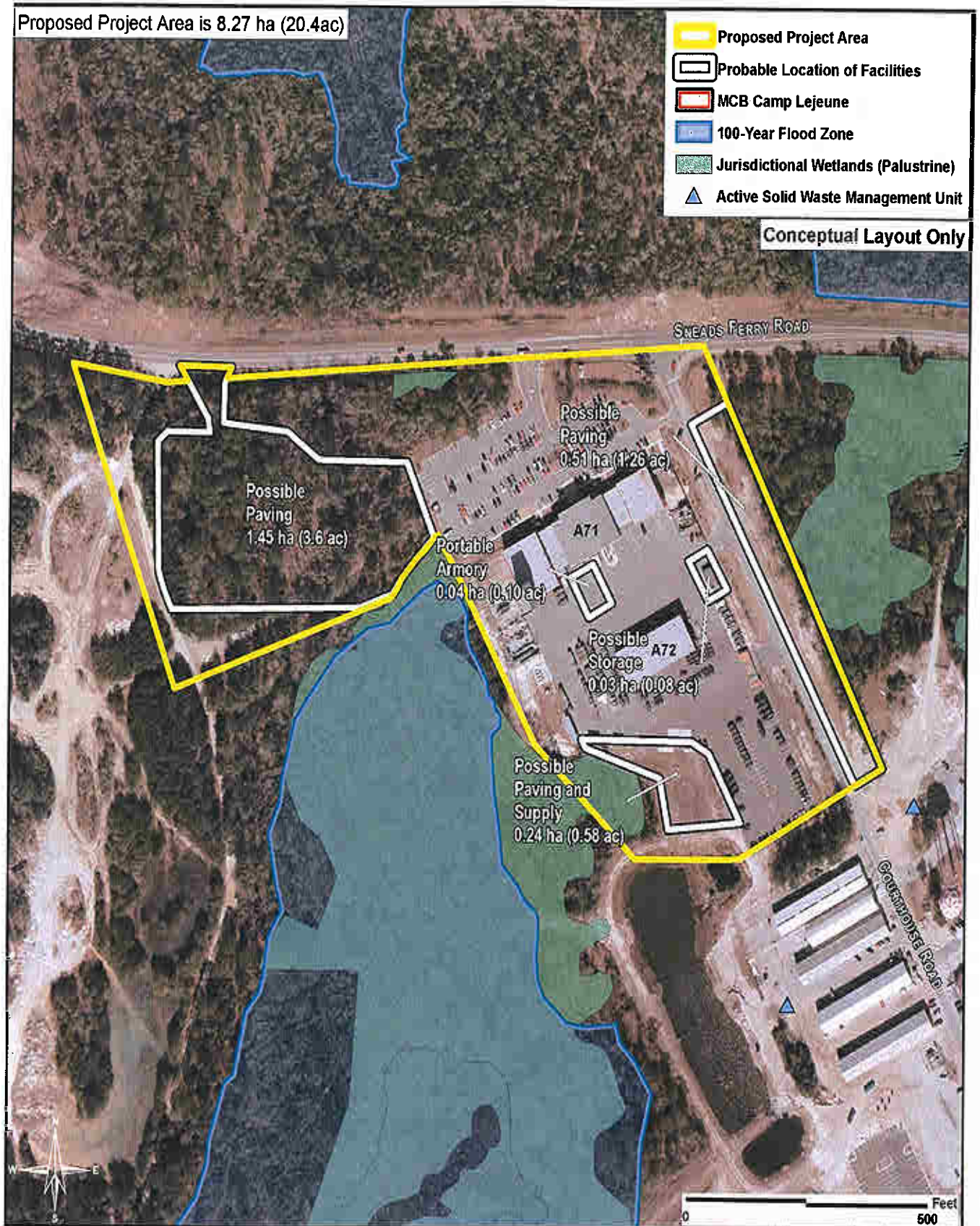


Figure 4 Proposed Project Area for the 4<sup>th</sup> Reconnaissance Platoon Facilities

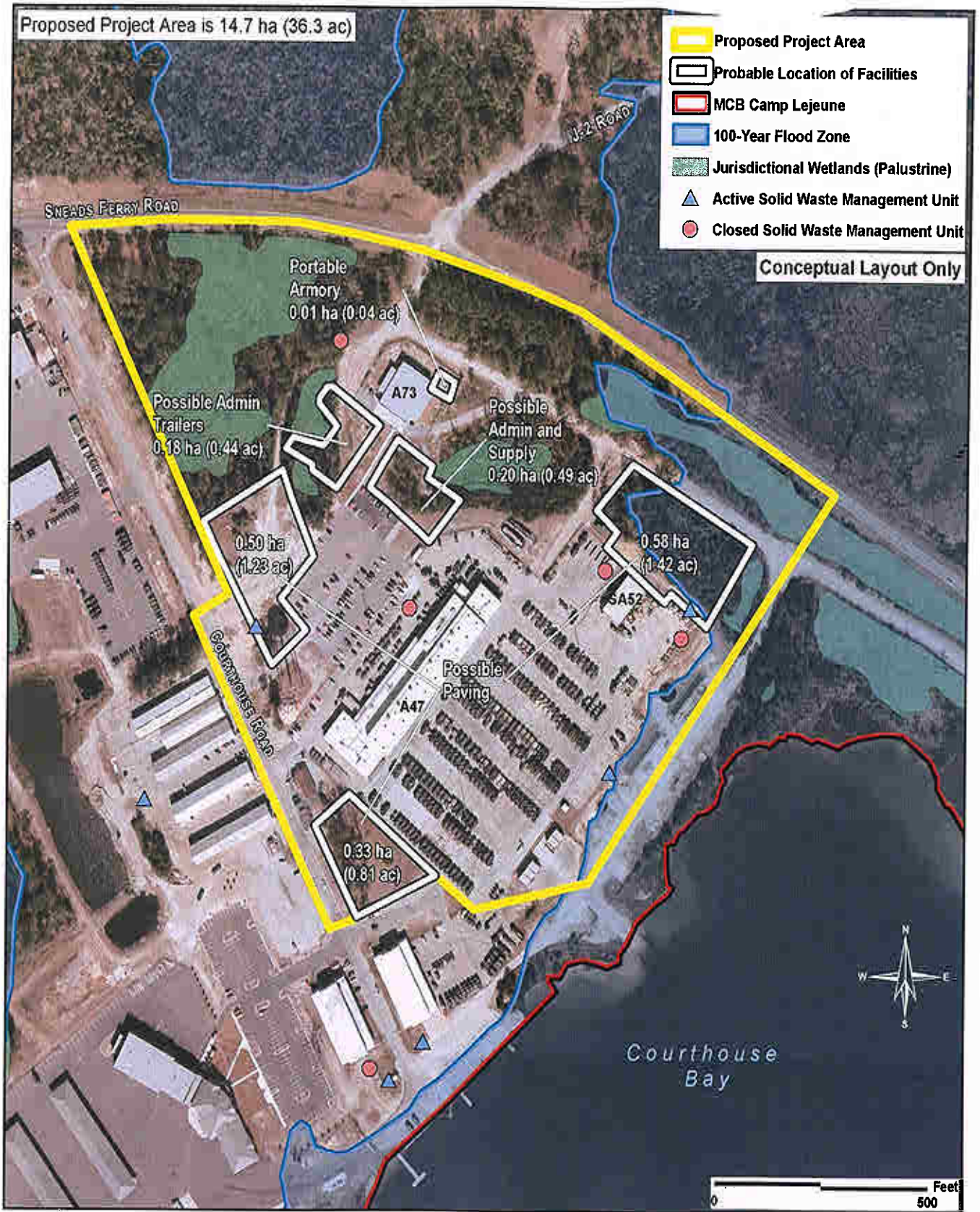
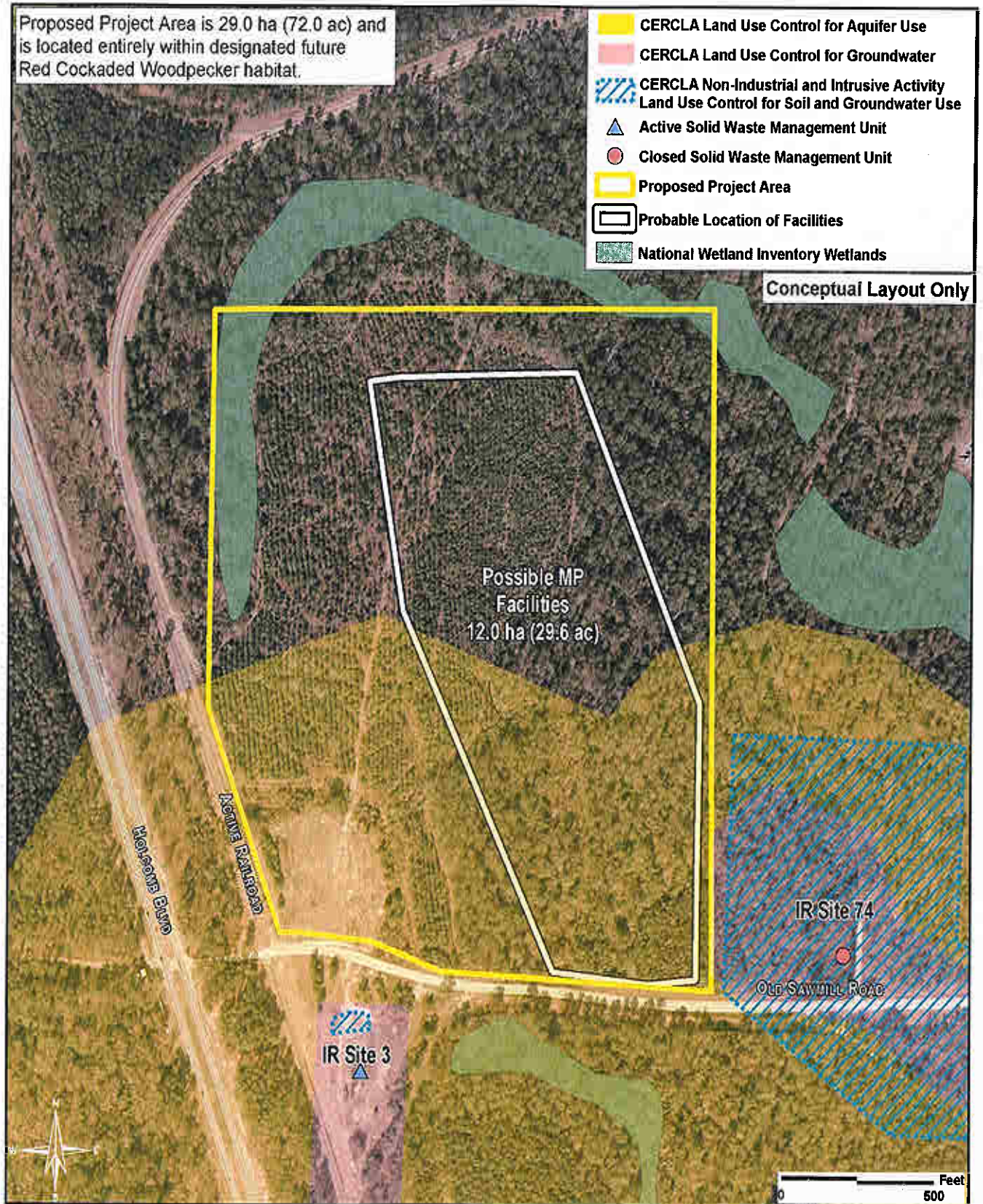
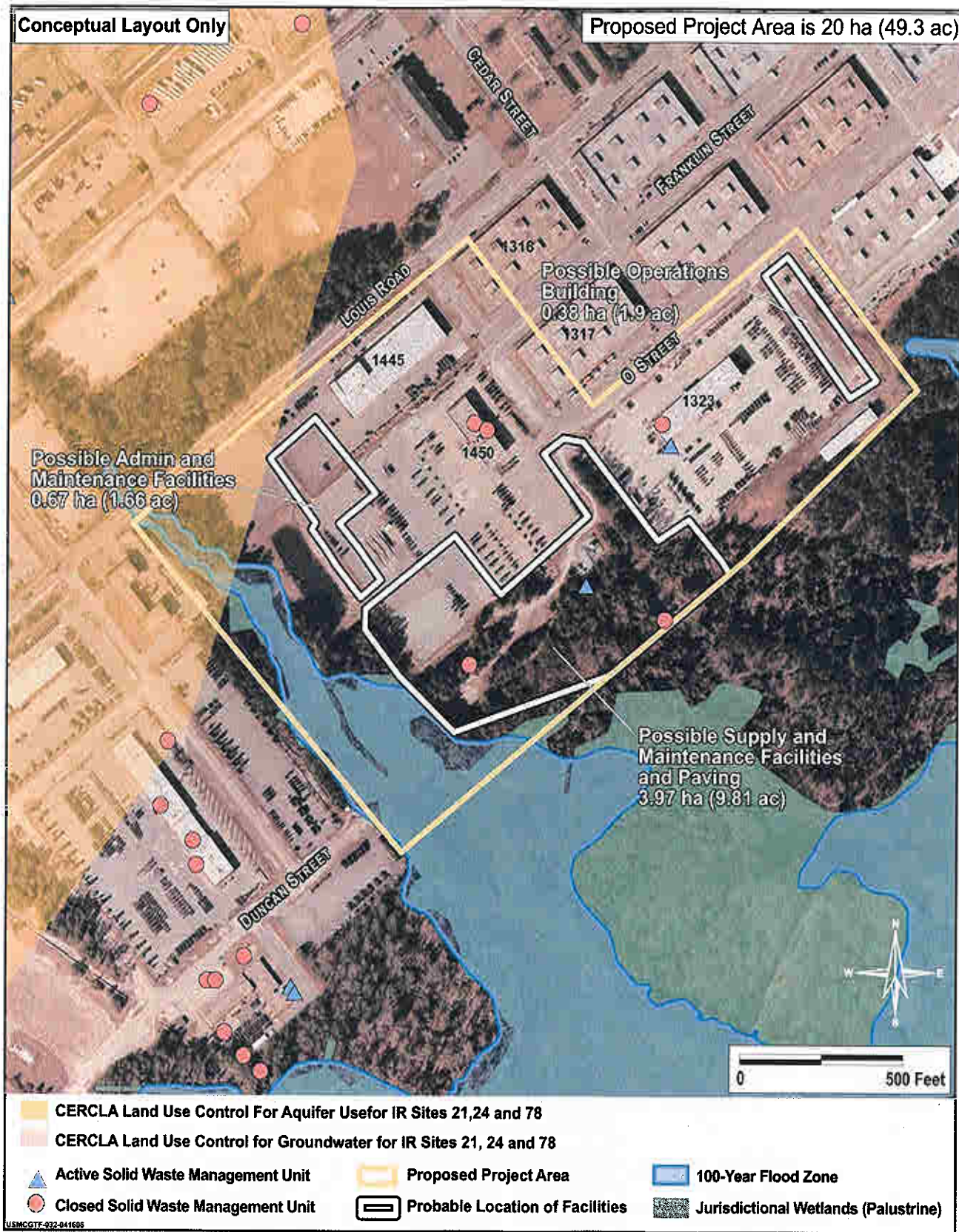


Figure 5 Proposed Project Area for the Company E, 2<sup>d</sup> Amphibious Assault Battalion Facilities



**Figure 6 Proposed Project Area for the Consolidated Base Military Police/Military Headquarters Group Military Police Logistics Command Element Facilities**



**Figure 7 Proposed Project Area for the Counter-Battery Radar Platoon; Battery F, 2<sup>d</sup> Artillery Battalion; Battery G, 2<sup>d</sup> Artillery Battalion; and Civil Affairs Facilities**