

**FINDING OF NO SIGNIFICANT IMPACT**

**PHASE IV AND PHASE V MILITARY FAMILY HOUSING  
PUBLIC PRIVATE VENTURE  
MARINE CORPS BASE, CAMP LEJEUNE  
ONslow COUNTY, NORTH CAROLINA**

**Responsible Officer:**

**Commanding Officer  
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Camp Lejeune, North Carolina 28542-0004**

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**August 2008**

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Pursuant to the Council on Environmental Quality regulations (40 Code of Federal Regulations Parts 1500-1508) implementing the 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 Phase IV and Phase V of the military family housing public private venture at MCB Camp Lejeune, Onslow County, North Carolina.

The United States Marine Corps (USMC) proposes to lease Base property to a public private venture (PPV) partner to construct and maintain for a 50-year lease period approximately 850 family housing units for enlisted military personnel at MCB Camp Lejeune and demolishing and constructing replacements for approximately 110 family housing units for officers at Marine Corps Air Station (MCAS) New River, North Carolina. The partner will also construct two Department of Defense Education schools at MCB Camp Lejeune. The construction of family housing units addresses an existing housing deficit. The proposed action represents Phases IV and V of the PPV Initiative at MCB Camp Lejeune and the continuation of Phase II of the PPV Initiative at MCAS New River. This is the proposed action and the preferred alternative.

Activities related to the construction and renovation of homes under Phases I, II, and III of the family housing PPV were initiated or completed in fiscal years 2005, 2006, and 2007, respectively. As part of the proposed action, MCB Camp Lejeune will execute military construction project P-1220B Electrical Modification to Substation #2. This project will install additional bays at existing Substation #2 to increase transformer capacity and will provide a new overhead primary transmission line to Berkeley Manor and Paradise Point. The existing right-of-way located along the eastern boundary of Site 5 will be widened approximately 12 meters (40 feet) to allow for placement of the new overhead line.

The land selected for evaluation in consideration of the Phase IV and Phase V Family Housing PPV proposed action (i.e., the study area) consists of five parcels at MCB Camp Lejeune and one parcel at MCAS New River. The total area of these parcels is approximately 419 ha (1035 ac). Sites 1, 2, and 3 at MCB Camp Lejeune comprise approximately 283 hectares (ha) (700 acres [ac]) of contiguous, largely undeveloped, land. This portion of the study area is bounded to the north by Brewster Boulevard, to the west by the Paradise Point Officer housing area along Seth Williams Boulevard, and to the east by Stone Street. The two additional MCB Camp Lejeune study area parcels are identified as Site 5, consisting of approximately 50 ha (123 ac), and Site 8, consisting of approximately 41 ha (102 ac). Site 5 is located adjacent to and east of the Naval Hospital on the north side of Brewster Boulevard and is primarily undeveloped. Site 8 is located along the north shoreline of Northeast Creek to the west Tarawa Terrace enlisted housing area and comprises the wooded land surrounding the area formerly occupied by the Knox Trailer

Park. MCB Camp Lejeune conveyed the area of the previous trailer park to the Phase I PPV partner. The MCAS New River parcel, identified as the Wilson Boulevard Site, comprises approximately 45 ha (110 ac) east of the installation boundary adjacent to United States Route 17, north of Douglass Road, and south of Curtis Road. Wilson Boulevard roughly bisects the site.

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, the proposed homes and schools will not be constructed and no impacts to the physical environment will occur. Without the homes, the housing deficit for military personnel and their families will continue to be a serious concern for MCB Camp Lejeune and MCAS New River.

The EA acknowledges that the proposed action will have some adverse environmental impacts, but they are not considered significant. Specifically, MCB Camp Lejeune has determined that the proposed action will result in the following:

- Increased demands on the providers of law enforcement and fire/emergency services at the two installations,
- Loss or re-routing of the equestrian trail located almost entirely within Site 1, and to a lesser extent, Sites 2 and 3,
- Temporary, short-term impacts to installation traffic due to increased activity from construction vehicles,
- Temporary increase in air emissions due to operation of construction vehicles during construction,
- Temporary increases in noise due to standard construction activities, typically occurring only during normal working hours in the vicinity of the proposed construction sites,
- Impacts to existing topography and soils during clearing and grading, and
- Impacts to wildlife from proposed construction activities which will disturb an estimated maximum of 180 ha (446 ac) of forest habitat.

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

- Low income and minority populations and children,
- Land use and coastal zone management,
- Threatened and endangered species, archaeological sites and historic properties (none occur within the project areas), and
- Surface water quality (construction activities will comply with MCB Camp Lejeune's 2002 Stormwater Pollution Prevention Plan and Stormwater Management National Pollution Discharge Elimination System Phase II requirements).

MCB Camp Lejeune will implement the following mitigation and minimization measures:

- Use best management practices to avoid and minimize the release of sediments into surface waters.

- Avoid and minimize impacts to wetlands and waters of the United States.
- Landscape and revegetate disturbed areas with native plants to the extent practicable.
- Halt construction if archaeological sites are encountered, and notify the Director, Environmental Management.
- Develop an appropriate course of action in the unanticipated event that construction impacts soil or groundwater contaminated sites.
- Use standard construction site safety precautions (e.g., fencing and patrolling) to minimize safety risks.
- Incorporate noise attenuation features into housing construction where appropriate.

MCB Camp Lejeune also analyzed the potential for cumulative effects resulting from the proposed action and other actions in the past, present, and reasonably foreseeable future. The Marine Corps Grow the Force initiative will create additional demand for on-base housing, necessitating construction of approximately 1,350 housing units. It is expected that these housing units will be constructed on MCB Camp Lejeune Sites 1, 2, 3, 5, and 8, resulting in the loss of additional forest habitat within the boundaries of these sites. The USMC is preparing an EIS to address the proposed permanent influx of personnel, including approximately 9,900 Marine Corps and civilian personnel in North Carolina, of which approximately 7,700 will be assigned to MCB Camp Lejeune.

Implementation of the proposed action in conjunction with upcoming housing to accommodate Grow the Force is expected to cumulatively impact several resource areas. The proposed action addressed in this EA will alleviate strains on existing housing and schools associated with increased population through the addition of new on-base housing and two new schools constructed on MCB Camp Lejeune, as will the housing and schools that will be constructed in support of the Grow the Force. These are positive cumulative impacts. However, these positive impacts will be realized at the expense of forested habitat that will be lost due to the construction. These losses are not significant in quantity or function given the extent and quality of remaining forestlands on MCB Camp Lejeune, surrounding federal properties and areas preserved through regional land conservation partnering efforts.

Based on information gathered during preparation of the EA, the USMC finds that implementing the proposed action will not significantly impact the human environment. Therefore the USMC will not prepare an Environmental Impact Statement for this action. The EA is on file and interested parties may review it by contacting the Commanding Officer, Base Public Affairs Office, MCB Camp Lejeune, North Carolina 28542-0004, telephone (910) 451-7440.

20 Aug 08  
Date

  
R. P. FLATAU, JR.

Colonel, U.S. Marine Corps  
Commanding Officer  
Marine Corps Base, Camp Lejeune

**ENVIRONMENTAL ASSESSMENT  
FOR  
PHASE IV AND PHASE V MILITARY FAMILY HOUSING  
PUBLIC PRIVATE VENTURE  
MARINE CORPS BASE CAMP LEJEUNE  
NORTH CAROLINA**

**Responsible Officer:**

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

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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, *Environmental Compliance and Protection Manual*, dated 22 January 2008, which establishes procedures for implementing NEPA.

### **ES.1 Description of the Proposed Action**

The USMC proposes to lease Base property to a Public Private Venture (PPV) partner to construct and maintain for a 50-year lease period approximately 850 family housing units for enlisted military personnel, and two Department of Defense Education Activity (DoDEA) Schools at Marine Corps Base (MCB) Camp Lejeune, North Carolina, and approximately 110 family housing units for officers, at Marine Corps Air Station (MCAS) New River, North Carolina. The construction of family housing units would address the existing housing deficit as documented in the 2007 Housing Market Analysis Update (Robert D. Niehaus, Inc., 2007). The proposed action represents Phases IV and V of the PPV Initiative at MCB Camp Lejeune and the continuation of Phase II of the PPV Initiative at MCAS New River. Activities related to the construction and renovation of homes under Phases I, II, and III of the family housing PPV were initiated or completed in fiscal years (FY) 2005, 2006, and 2007, respectively. The houses and the schools, along with the supporting infrastructure (e.g., roads, utilities) would be constructed over a period of several years, with Phase IV construction expected to begin in 2008.

The land selected for evaluation in consideration of the Phase IV and Phase V Family Housing PPV proposed action (i.e., the study area) consists of five parcels at MCB Camp Lejeune and one parcel at MCAS New River. The roughly contiguous area identified as Sites 1, 2, and 3 at MCB Camp Lejeune comprises approximately 283 hectares (ha) (700 acres [ac]) of largely undeveloped land. This portion of the study area is bounded to the north by Brewster Boulevard, to the west by the Paradise Point Officer housing area along Seth Williams Boulevard, and to the east by Berkeley Manor and Watkins Village housing areas along Stone Street. The two additional MCB Camp Lejeune study area parcels are identified as Site 5, consisting of approximately 50 ha (123 ac), and Site 8, consisting of approximately 41 ha (102 ac). Site 5 is located adjacent and to the east of the Naval Hospital on the north side of Brewster Boulevard and remains primarily undeveloped. Site 8 is located along the north shoreline of Northeast Creek to the west of the Tarawa Terrace enlisted housing area and comprises the wooded land surrounding the area formerly occupied by the Knox Trailer Park. The MCAS New River parcel, identified as the Wilson Boulevard Site, comprises approximately 45 ha (110 ac) east of the installation boundary adjacent to United States Route 17, north of Douglass Road, and south of Curtis Road. Wilson Boulevard roughly bisects the site.

## **ES.2 Environmental Impact of the Proposed Action**

Implementation of the proposed action would result in some minor adverse environmental impacts. Following is a brief summary of the anticipated impacts on each resource area analyzed in the EA. For a detailed description and analysis, refer to Section 4 of this EA, Environmental Consequences.

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

Implementation of the proposed action would not change the overall land use at the installation and the proposed action would generally be compatible with existing and surrounding land use designations. Only a small percentage (0.5%) of forested land on MCB Camp Lejeune would be lost.

The USMC, through the Coastal Consistency Determination process, has determined that implementing the proposed action would be fully consistent with the enforceable policies of North Carolina's approved Coastal Management program.

### **Socioeconomics and Environmental Justice**

The proposed action would likely result in some very minor population shifts as military families located in the private sector within the region (i.e., adjacent counties) relocate to on-base family housing.

The proposed action would result in a net increase of 850 single family homes phased in over a time period of 5 years. Despite this increase in additional housing, it is not anticipated that the private housing market would be negatively impacted due to a potential short-term increase in vacant housing units. Implementation of the proposed action would have a short-term positive effect on the local economy. The extent to which the economy benefits from construction activities would be dependent upon the amount of project planning, design, materials purchasing, and construction activities contracted with local businesses.

The 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, MCAS New River, or in Onslow County. Because the proposed action would take place entirely within the boundaries of MCB Camp Lejeune and MCAS New River and there would be no change to the demographics outside the installation, and implementation of the proposed action would not adversely impact minority and low income populations on or off the Base.

Although children are not likely to be present within the proposed project areas, several facilities that support children are located nearby, including a community center and riding club and several youth centers, schools, and housing areas. During construction there could be increased risks to the safety of children, due to the proximity of facilities where children are present. However, the construction activities would be short-term in duration and increased risks would be mitigated through the use of standard construction site safety precautions (e.g., fencing and patrolling). Construction-related noise would be introduced to the environment but could be mitigated by restricting the hours of construction. Generation of fugitive dusts associated with construction would be minimized through implementation of best management practices such as watering of exposed soils, soil stockpiling, and soil stabilization.

## **Community Facilities and Services**

Under the proposed action, the demands on the providers of law enforcement and fire/emergency services at the two installations would increase. If needed to accommodate any increase in demand for services resulting from the proposed action, the installation and the PPV partner would work together to modify fire/emergency services mutual aid agreements with the local community or increase the size of the MCB Camp Lejeune and MCAS New River law enforcement and emergency services. Details concerning the provision of law enforcement and fire/emergency services would be determined through negotiations between the PPV entity and the Marine Corps.

There would be no adverse impacts to the Camp Lejeune Dependent Schools (CLDS) or off-base schools from implementation of the proposed action. Through the establishment of two new DoDEA Schools, the proposed action would help to alleviate overcrowding in Onslow County Schools. The CLDS could realize a benefit from the new DoDEA Schools constructed under the proposed action through a decrease in the teacher-to-student ratio in certain classes. Lastly, the additional schools would provide needed infrastructure for any potential future population increase at MCB Camp Lejeune or MCAS New River. Moving military students from Onslow County public schools to CLDS would result in a decrease of impact aid paid to the non-DoD schools proportional to the reduction of students attending non-DoD schools.

MCB Camp Lejeune offers numerous recreational facilities, including a paved, multi-use Greenway Trail that borders Sites 2 and 3 on their northern boundaries along Brewster Boulevard. The proposed action could require one or more road crossings along the trail. Implementation of the proposed action could result in the loss or re-routing of the equestrian trail located almost entirely within Site 1, and to a lesser extent, Sites 2 and 3. However, the Greenway Trail, as well as numerous other recreation facilities that exist at the Base, would remain intact and would be available to existing and future residents.

The proposed action would reduce the land area available for hunting as well as the opportunities to maintain permanent forest openings for wildlife.

## **Transportation and Traffic**

The proposed action would result in temporary, short-term impacts to installation traffic due to increased activity from construction vehicles. The impacts would be minor, as construction traffic would constitute a small portion of the total existing traffic volume at MCB Camp Lejeune and MCAS New River and the majority of vehicles used for construction activities would be kept onsite for the duration of construction. Traffic may need to be temporarily rerouted around some of the proposed construction sites resulting in some temporary congestion.

Once the housing units and schools are constructed, traffic volumes on adjacent roads would increase. There are no known traffic issues in the vicinity of the proposed action, but implementation of some of the recommendations from recent traffic studies could help minimize any minor issues that could occur from the proposed action.

## **Air Quality**

The proposed action includes several actions that would increase air emissions: operation of construction vehicles, facility construction, and operation and maintenance of facilities. Even with these increased emissions, the region would remain in attainment for all criteria pollutants under the proposed action. Air quality is not expected to deteriorate as a result of implementing the proposed action.

## **Noise**

Under the proposed action, minor, temporary impacts to the noise environment in the vicinity of the proposed construction sites 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 typically would only occur during normal working hours (i.e., between 7:00 am and 5:00 pm, Monday through Friday). The new housing areas and schools, once populated, would not generate noise levels above average ambient noise levels and would be consistent with noise levels of the surrounding area.

## **Infrastructure and Utilities**

The demand for water from family housing areas would increase over current conditions. Each of the Water Treatment Plants serving the proposed project sites has sufficient capacity to support this increase in demand for potable water. Existing water lines are present in the vicinity of each of the proposed project areas and have sufficient capacity to serve the new homes, schools, and associated facilities. The potable water demands generated by the additional 850 families living on MCB Camp Lejeune would be minor compared to the overall demand for potable water on Base and in the region.

Existing wastewater treatment capacity is adequate to accommodate the wastewater produced by the additional 850 families occupying the housing to be built under the proposed action. The proposed housing units and schools would require connections to the existing force main that transports wastewater to the wastewater treatment plant in French Creek. Utility projects that would be initiated under the proposed action to serve the new housing areas and schools would include installation of an additional sewage trunk main connecting the new homes and schools constructed at Sites 1, 2, and 3 to Pump Station 745 (formerly 47/47A) near the Marston Pavilion. All required utilities connections for the proposed new housing areas and schools would be engineered to ensure that the capacity of the existing sewer mains is supplemented to accommodate wastewater generated from the new homes and schools.

The proposed new homes, schools, and associated facilities would require connections to the electricity and telecommunications lines in the vicinity of the proposed project areas. As part of the proposed action, electrical and telecommunications utilities would be installed on both installations at the proposed new housing areas and schools to provide for daily residential needs as well as street and facility lighting. As part of the proposed action, MCB Camp Lejeune would execute military construction project P-1220B Electrical Modification to Substation #2. This project would install additional bays at existing Substation #2 to increase transformer capacity and would provide a new overhead primary transmission line to

Berkeley Manor and Paradise Point. The existing right-of-way located along the eastern boundary of MCB Camp Lejeune Site 5 would be widened approximately 12 meters (40 feet) to allow for placement of the new overhead line (Sides, 2008).

Additional telephone service distribution lines would be installed (typically underground) to serve the new enlisted housing areas and schools at MCB Camp Lejeune and the officer housing area at MCAS New River.

Solid waste generated during construction and operation of the proposed homes, schools, and associated facilities would be disposed of at the Base Landfill on Piney Green Road. To the extent practicable, construction debris would be recycled at the construction and demolition debris facility or the wood waste recycling facility on Base. The Base Landfill is estimated to have sufficient capacity to support the additional solid waste produced as a result of implementing the proposed action.

Stormwater runoff would increase as a result of the proposed action. Runoff would be managed and controlled in accordance with the MCB Camp Lejeune 2002 Stormwater Pollution Prevention Plan and the Stormwater Management National Pollutant Discharge Elimination System Phase II requirements. Long-term strategies to control stormwater, as needed, would be developed as part of the site design process. Impervious surfaces included in the proposed action would be included in an outfall management plan that would be developed as part of MCB Camp Lejeune's 5-year Stormwater Phase I permit renewal.

### **Cultural Resources**

No National Register of Historic Places potentially eligible sites have been identified within the proposed project sites. No cultural resources would 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 project areas. Soils would be disturbed during clearing and grading activities associated with the proposed action. Prior to construction, approval would be obtained by the North Carolina Department of Environmental and Natural Resources (NCDENR) on all Erosion and Sediment Control Plans for the proposed activities. Construction activities would have no direct impact on geological formations at MCB Camp Lejeune and no adverse impact to groundwater.

A net increase in impervious surface would result from the construction of the facilities and associated infrastructure under the proposed action. Implementation of State-approved erosion and sedimentation control plans and stormwater management facilities would minimize impacts to surface water resources located within the proposed action areas. Compliance with all necessary permit conditions and implementation of best management practices and mitigation measures would ensure that stormwater is adequately controlled. Thus, implementing the proposed action would not result in adverse impacts to water quality.

The results of Wetlands Studies conducted in 2004 by ARCADIS and in 2008 by Geo-Marine, Inc. would be consulted by MCB Camp Lejeune in the design phase of the proposed action projects in order to

ensure that wetlands and waters of the US are avoided to the maximum extent practicable during construction. The proposed action would not build houses or schools in the 100-year floodplain.

The proposed action would result in minor adverse impacts to wildlife. The proposed construction activities would disturb an estimated maximum of 180 ha (446 ac) of forest habitat. Within the proposed neighborhoods some existing trees and native vegetation would remain and additional landscaping using native vegetation would be incorporated. The adverse impacts to wildlife would not be expected to affect the stability of wildlife populations on Base or migratory bird populations. MCB Camp Lejeune has determined that the proposed action is not likely to adversely affect any federally-listed threatened or endangered species.

### **Hazardous Material and Waste**

Several contaminated sites and historical ranges are located on or near the proposed project areas. MCB Camp Lejeune would 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 sites could be affected. MCB Camp Lejeune would obtain necessary approvals from the US Environmental Protection Agency and the NCDENR with regard to any proposed development within a contaminated site.

### **ES.3 Alternatives Considered**

Several alternative sites for fulfilling the purpose and need of the proposed action were considered but dismissed from further study. For Phases IV and V of the Family Housing Privatization Initiative, MCB Camp Lejeune considered nine (six primary and three secondary) sites. MCB Camp Lejeune utilities and environmental management staff evaluated each of the nine sites in reference to established land use and infrastructure criteria, including but not limited to: proximity to areas of potential environmental concern (e.g., contaminated sites, restoration sites), availability of electricity and natural gas, capacity for provision of drinking water and treatment of wastewater, and potential impacts to wetlands, cultural resources, and threatened and endangered species.

In addition, the completion in 2007 of an evaluation of risk and other environmental studies in 2008 provided sufficient data to conclude that several sites under consideration were suitable for the construction of housing. The end result of this planning evaluation was the selection of five of the nine sites as preferred sites for the construction of homes for enlisted personnel and two schools at MCB Camp Lejeune and one preferred site for the construction of officer housing at MCAS New River. The current boundaries of the Wilson Boulevard Site reflect the decision to evaluate the northwest portion of the former Site 1: Douglass Road (considered as part of the Supplemental EA as described in Section 1.3) with additional land located east of US 17 and south of Curtis Road in order to optimize the development of land unconstrained by established land use controls. The sites comprising the study area for this EA are identified as MCB Camp Lejeune Sites 1, 2, 3, 5 and 8 and the MCAS New River Wilson Boulevard Site.

The remaining alternative sites, for which insufficient data exist at this time to determine their suitability for residential development, will not be considered further in this EA. If MCB Camp Lejeune considers the development of these or other sites for future phases of housing privatization, additional environmental analysis will be conducted.

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 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 Section 5.7 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.

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 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. If needed, wetland and stream mitigation would be conducted to fulfill all permit condition requirements. However, construction within wetlands or streams is not expected.

All projects would be designed to avoid impacting or being impacted by any known contaminated sites to the extent practicable. Any contamination would be remediated prior to construction. MCB Camp Lejeune would 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.

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## ACRONYMS AND ABBREVIATIONS

ac	Acre(s)	NAAQS	National Ambient Air Quality Standards
AEC	Area of Environmental Concern	NC 24	North Carolina Route 24
CAMA	Coastal Area Management Act	NCAC	North Carolina Administrative Code
CCD	Coastal Consistency Determination	NCDENR	North Carolina Department of Environment and Natural Resources
CEQ	Council on Environmental Quality	NEPA	National Environmental Policy Act
CFR	Code of Federal Regulations	NO <sub>2</sub>	Nitrogen Dioxide
CLDS	Camp Lejeune Dependent Schools	NPDES	National Pollutant Discharge Elimination System
CO	Carbon Monoxide	O <sub>3</sub>	Ozone
dBA	A-weighted decibel	PK	Pre-Kindergarten
dBC	C-weighted decibel	PM <sub>2.5</sub>	Particulate Matter 2.5 Microns or Less in Diameter
DoD	Department of Defense	PM <sub>10</sub>	Particulate Matter 10 Microns or Less in Diameter
DoDEA	Department of Defense Education Activity	ppm	Parts per Million
DoN	Department of the Navy	RCW	red-cockaded woodpecker
EA	Environmental Assessment	SO <sub>2</sub>	Sulfur Dioxide
EIS	Environmental Impact Statement	TSP	Total Suspended Particulates
EMD	Environmental Management Division	US	United States
FONSI	Finding of No Significant Impact	US 17	United States Route 17
ft	Feet	US 172	United States Route 172
FY	Fiscal Year	USACE	U.S. Army Corps of Engineers
ha	Hectare	USACHPPM	United States Army Center for Health Promotion and Preventative Medicine
km	Kilometers	USEPA	United States Environmental Protection Agency
m	Meters	USFWS	United States Fish and Wildlife Service
MCAS	Marine Corps Air Station	USMC	United States Marine Corps
MCB	Marine Corps Base		
mgd	Million Gallons per Day		
µg/m <sup>3</sup>	Micrograms per Cubic Meter		
mi	Mile		
mld	Million Liters per Day		

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## **1.0 PURPOSE AND NEED**

### **1.1 Introduction**

The United States Marine Corps (USMC) proposes to lease Base property to a Public Private Venture (PPV) partner to construct and maintain for a 50-year lease period approximately 850 family housing units for enlisted military personnel and two Department of Defense Education Activity (DoDEA) Schools at Marine Corps Base (MCB) Camp Lejeune, North Carolina, and approximately 110 family housing units for officers, at Marine Corps Air Station (MCAS) New River, North Carolina (Figure 1-1). The construction of family housing units would address the existing housing deficit as documented in the 2007 Housing Market Analysis Update (Robert D. Niehaus, Inc., 2007). The proposed construction projects (i.e., enlisted and officer housing units and two schools) collectively comprise the proposed action, which is described in detail in Chapter 2.

The proposed action represents Phases IV and V of the PPV Initiative at MCB Camp Lejeune and the continuation of Phase II of the PPV Initiative at MCAS New River. Activities related to the construction and renovation of homes under Phases I, II, and III of the family housing PPV were initiated or completed in fiscal years (FY) 2005, 2006, and 2007, respectively.

These activities included the preparation of a 2005 Environmental Assessment (EA), which considered the environmental effects associated with proposed changes to more than 6,500 housing units at MCB Camp Lejeune, MCAS New River, and MCAS Cherry Point, North Carolina (DoN, 2005), and a Supplemental EA addressing changes to the proposed actions under Phase II (DoN, 2006). Each of these previous EAs evaluated the potential impacts associated with the Marine Corps forming of a PPV to improve the quality, quantity, and availability of military family housing and concluded with the signing of a Finding of No Significant Impact (FONSI).

The land selected for evaluation in consideration of the Phase IV and Phase V Family Housing PPV proposed action (i.e., the study area) consists of five parcels at MCB Camp Lejeune. This EA also evaluates one parcel at MCAS New River as an additional land area for conveyance for the construction and maintenance of officer housing proposed under Phase II Family Housing PPV. The roughly contiguous area identified as Sites 1, 2, and 3 at MCB Camp Lejeune comprises approximately 283 hectares (ha) (700 acres [ac]) of largely undeveloped land. This portion of the study area is bounded to north by Brewster Boulevard; the area is bounded to the west by the Paradise Point Officer housing area along Seth Williams Boulevard and to the east by Berkeley Manor and Watkins Village housing areas along Stone Street. The two additional MCB Camp Lejeune parcels are identified as Site 5, consisting of approximately 50 ha (123 ac), and Site 8, consisting of approximately 41 ha (102 ac). Site 5 is located adjacent and to the east of the Naval Hospital on the north side of Brewster Boulevard and remains primarily undeveloped. Site 8 is located along the north shoreline of Northeast Creek to the west of the Tarawa Terrace enlisted housing area and surrounds the land formerly occupied by the Knox Trailer Park, which has already been conveyed to the PPV partner.

# Location of MCB Camp Lejeune and MCAS New River

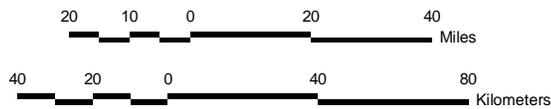
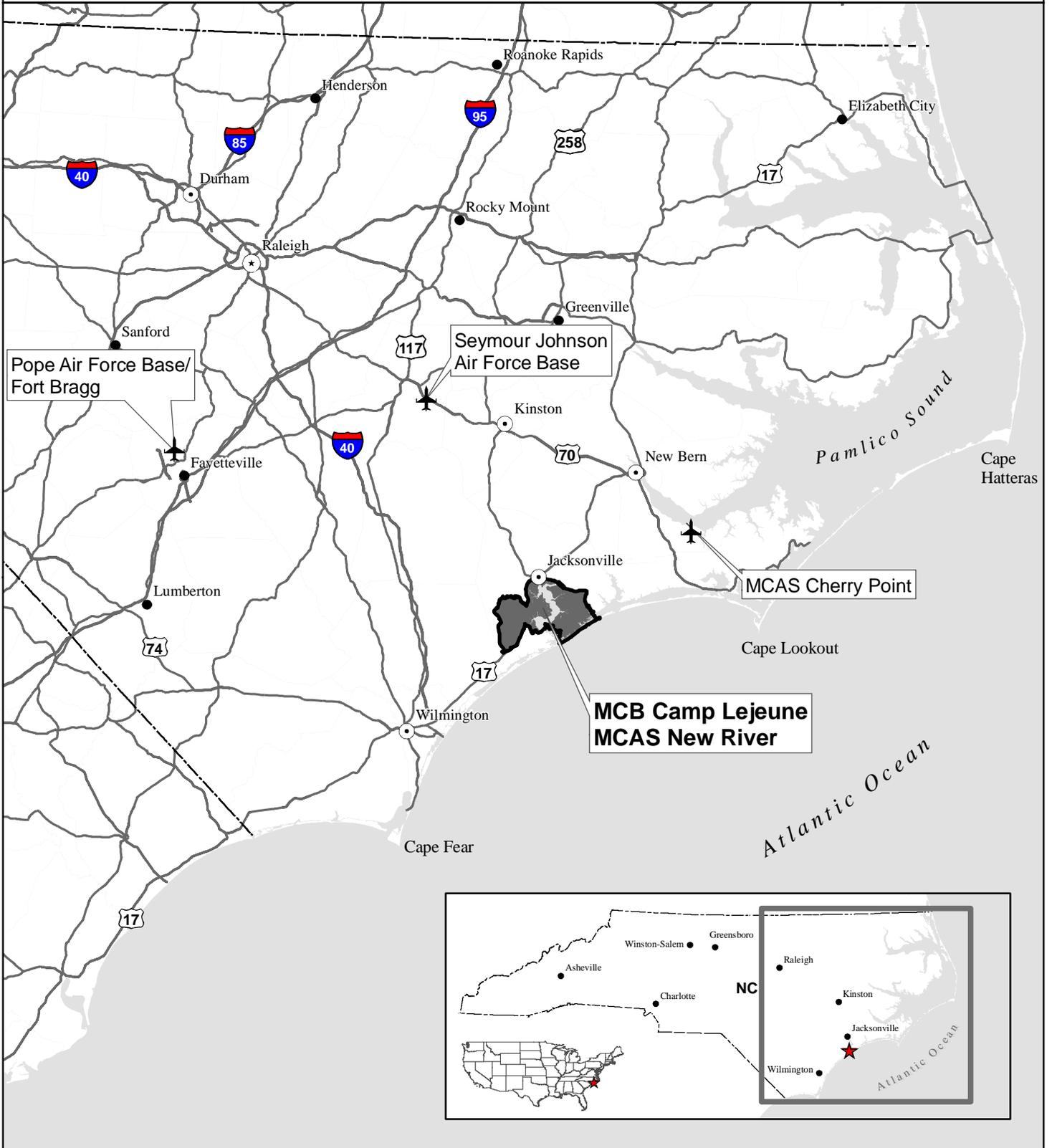


Figure 1-1

The MCAS New River parcel, identified as the Wilson Boulevard Site, comprises approximately 45 ha (110 ac) east of the installation boundary adjacent to United States Route 17, north of Douglass Road, and south of Curtis Road. Wilson Boulevard roughly bisects the site.

The proposed action considered in this EA is intended to support the existing housing and education infrastructure on Base/Station as well as the future needs of associated military personnel and their dependents.

## **1.2 Background**

MCB Camp Lejeune is located on the Atlantic coast in Onslow County, in southeastern North Carolina, approximately halfway between the cities of Wilmington and New Bern (Figure 1-1). MCB Camp Lejeune encompasses an estimated 58,000 ha (143,000 ac), including the onshore, near shore, and surf area in and adjacent to the Atlantic Ocean and the New River (MCB Camp Lejeune, 2007b). The northern boundary of MCB Camp Lejeune adjoins the City of Jacksonville, North Carolina. The southern boundary extends to the Atlantic Ocean. MCB Camp Lejeune is home to units of the Marine Expeditionary Force and hosts six major Marine Corps commands, two Navy commands, one Coast Guard command, and several Marine Corps Formal schools.

MCAS New River is located adjacent to the northwest boundary of MCB Camp Lejeune and is considered part of the MCB Camp Lejeune Military Complex (Figure 1-1). MCAS New River hosts the 2d Marine Aircraft Wing and Marine Air Groups 26 and 29.

MCB Camp Lejeune and the surrounding community collectively house an active duty, family member, retiree, and civilian employee population of nearly 150,000 people (MCB Camp Lejeune, 2007c). The Base population is expected to increase in the future as MCB Camp Lejeune continues to expand to meet the operational requirements of the Marine Corps mission. The proposed action would facilitate the ability of MCB Camp Lejeune to reduce the existing housing deficit and provide needed capacity in the DoDEA School system to accommodate the new housing area residents. The intent of this EA is to assess the potential environmental effects of constructing approximately 850 new enlisted family housing units and two DoDEA Schools (one elementary and one middle school) at MCB Camp Lejeune and approximately 110 officer family housing units at MCAS New River.

The Military Housing Privatization Initiative was enacted on February 10, 1996 as part of the National Defense Authorization Act of 1996, Public Law 104-106, Section 2801, 110 Stat. 186 (1996). It provides for the Department of Defense (DoD) to work with the private sector to build and renovate military family housing in key areas of need. The Military Housing Privatization Initiative program was created to address two significant problems concerning housing for military service members and their families: the poor condition of DoD-owned housing, and a shortage of the affordable private housing of adequate quality. Under the Military Housing Privatization Initiative, the DoD can work with the private sector to build and renovate family housing in key areas of need by employing a variety of financial tools, including direct loans, loan guarantees, equity investments, leasing of property or facilities, and rental guarantees (DoN, 2007a). DoD's goal is to partner private investment with DoD participation and to use a

variety of private sector approaches to build and renovate military family housing and ancillary supporting facilities. In the case of the Marine Corps, this would be accomplished through the formation of a PPV partnership between the Marine Corps and a private entity selected by the Marine Corps through a competitive bid process.

At MCB Camp Lejeune and MCAS New River, the private entities, each acting on behalf of the partnership, would lease, operate, manage, and maintain the inventory of new military family housing units constructed, including site infrastructure and ancillary facilities for a term of 50 years. After the 50-year lease period ends, all land, improvements and infrastructure would transfer to federal control.

In summary, the responsibilities of the PPV partner(s) would be defined in a business agreement to include the following.

- Undertake and complete the construction of approximately 850 enlisted housing units at MCB Camp Lejeune and approximately 110 officer housing units at MCAS New River
- Undertake and complete the construction of two DoDEA Schools (i.e., one elementary school and one middle school) at MCB Camp Lejeune
- Lease, operate, manage, and maintain an end state inventory of approximately 850 military family housing units at MCB Camp Lejeune and approximately 110 military family housing units at MCAS New River, as well as the associated site infrastructure and ancillary facilities, for a term of 50 years

For the purpose of this EA, it is assumed that any part of the nearly 400-ha (1,000-acre), multiple-parcel study area may be subject to development. However, MCB Camp Lejeune would determine the total developable area based on land use constraints identified during the course of this EA project (e.g., through wetlands and wildlife surveys). The houses and the schools, along with the supporting infrastructure (e.g., roads, utilities) would be constructed over a period of several years, with Phase IV construction at MCB Camp Lejeune expected to begin in 2008 and officer housing construction at MCAS New River expected to begin in 2009.

### **1.3 Purpose and Need for the Proposed Action**

The readiness of American forces depends on retaining the high-quality experienced personnel now in the military. One of the most important factors in retention of personnel is the ability of these personnel to provide affordable, quality housing for their families. Current DoD and DoN housing policy as stated in memoranda issued by the Deputy Secretary of Defense on January 8, 2003 and the Assistant Secretary of the Navy (Installations and Environment) on February 25, 2002 underscore the DoD's longstanding reliance on the private sector for housing of military families based on the following: 1) housing is not a core defense function; and 2) adequate housing exists in the private sector to perform the function. Only when the private sector is not capable of providing adequate military family housing will DoD consider the construction, operation, and maintenance of government housing.

The DoD directed that a housing requirement determination process be implemented to establish the appropriate level of housing to be maintained in the DoD's inventory (DoD, 2003). Based on this directive, the Marine Corps prepared a Family Housing Master Plan Requirements Analysis (USMC, 2004) and a 2007 Housing Market Analysis Update, which determined that a deficit of 3,303 military family housing units existed at MCB Camp Lejeune in 2007. The reported deficit reflects a total permanent-party personnel figure of 43,261, of which 17,200 require family housing (Robert D. Niehaus, Inc., 2007). This analysis incorporates the 2006 Marine Corps Facilities Support Requirements Planning Documents for MCB Camp Lejeune and the results of the 2006 military personnel survey for the Base, the 2007 Basic Allowance for Housing rates, and market area conditions as of 2007. The construction of approximately 850 homes at MCB Camp Lejeune is proposed to address the existing military family housing deficit.

The construction of approximately 110 new homes at MCAS New River is proposed to replace 110 officer housing units. The demolition of housing units at MCAS New River was evaluated under the Supplemental EA for Phase II Privatization of Family Housing (DoN, 2006a), and therefore the demolition is not being evaluated in this EA. The Supplemental EA evaluated the 50-ha (124-ac) land parcel identified as Site 1: Douglass Road at MCAS New River. Although the majority of Site 1: Douglass Road is no longer considered as a preferred site for construction of housing units, the 6-ha (15-ac) parcel comprising the northwest portion of Site 1: Douglass Road, is evaluated in this EA as part of the Wilson Boulevard Site.

Finally, MCB Camp Lejeune intends to exercise the option to construct two DoDEA Schools in conjunction with the proposed new homes in accordance with the Findings of Congress under 118 Stat., 2156 Public Law 108-375, October 28, 2004, the National Defense Authorization Act for Fiscal Year 2005. The Congress specified that the Secretaries of the military departments may include the construction of school facilities as one of the ancillary supporting facilities authorized as part of a privatization initiative. The proposed elementary school and middle school would accommodate the dependents of the military personnel who move into the newly constructed homes, as well as some dependents of military personnel already residing in other housing areas on Base.

## **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 Environmental Impact Statement (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 FONSI. An EIS is prepared for those federal actions that may significantly affect the quality of the natural or human environment. Thus, if the USMC

were to determine that the proposed action would have a significant impact on the quality of the natural or human environment, an EIS would be prepared.

The Commanding Officer, MCB Camp Lejeune will review this EA to determine whether a FONSI or an EIS is the appropriate outcome. Should the Commanding Officer conclude that a FONSI is appropriate he will sign the FONSI and a Notice of Availability will be published in local newspapers.

This EA has been prepared pursuant to NEPA and the following NEPA implementation regulations and guidelines:

- The Council on Environmental Quality (CEQ) regulations, as contained in 40 Code of Federal Regulations (CFR) Parts 1500 to 1508, which direct federal agencies on how to implement the provisions of NEPA
- Marine Corps Order P5090.2A, Change 1, Environmental Compliance and Protection Manual, 22 January 2008, which documents the USMC internal operating instructions on how it implements the provisions of NEPA

#### **1.4.2 Scoping and Alternatives Development**

MCB Camp Lejeune reviews all proposals at the Base to determine the requirements for NEPA documentation, in accordance with Base Order 11000.1D (MCB Camp Lejeune, 2000). MCB Camp Lejeune reviewed the proposal for construction of the military family housing units and two DoDEA Schools under the PPV Phases IV and V and determined that the proposed action required the preparation of an EA.

A project kickoff meeting was held on 5 November 2007. At this meeting, consisting of representatives from the MCB Camp Lejeune Environmental Management Division (EMD), Installation Development Division, Family Housing, Naval Facilities Engineering Command – Mid-Atlantic Division, and the EA preparer, there was discussion regarding the scope of environmental issues to be addressed in the EA, along with alternatives to the proposed action. The team decided that the environmental resource categories and issues to be addressed in the EA should include, but are not limited to, land use, soils, wetlands, threatened and endangered species, coastal zone, water quality, infrastructure, environmental justice, noise, and air quality.

The Navy modified the contract to prepare the EA to include the evaluation of Phase V of the Family Housing Privatization Initiative, which consists of construction of one DoDEA school at MCB Camp Lejeune and construction of housing units on Sites 5 and 8 at MCB Camp Lejeune (see Figure 2-1) and the Wilson Boulevard Site at MCAS New River (see Figure 2-2). A meeting was held with representatives from the MCB Camp Lejeune EMD and the EA preparer on 21 February 2008 to gather information about the three additional sites in reference to the resources to be addressed in the EA.

#### **1.4.3 Related Environmental Documents**

- An EA for Privatization of Family Housing at MCB Camp Lejeune, MCAS New River, and MCAS Cherry Point (August 2005) was prepared to evaluate the potential impacts associated with the proposed improvements to the quality, quantity and availability of military housing at the three installations through the formation of a PPV.

- A Supplemental Environmental Assessment for Phase II Privatization of Family Housing at MCB Camp Lejeune, MCAS New River, and MCAS Cherry Point (August 2006) was prepared to evaluate the potential impacts associated with changes to Phase II of the Marine Corps PPV initiative at the three installations.
- An EIS for the Proposed USMC Grow the Force initiative is being prepared to assess the potential environmental impacts associated with accommodating additional Marines and their families at MCB Camp Lejeune between 2008 and 2020.
- The study area is currently being surveyed to identify threatened and endangered species and their habitat, to evaluate archaeological resources, and to delineate wetlands. The results of these studies will be incorporated into this EA as they become available.

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

In addition to NEPA, other laws, regulations, permits, and licenses may be applicable to the proposed new construction of homes and a school at MCB Camp Lejeune. Specifically, the proposed action may require:

- Federal Coastal Consistency Determination (CCD) concurrence by the North Carolina Department of Environment and Natural Resources (NCDENR), Division of Coastal Management
- Clean Water Act, Section 401 Water Quality Certification, NCDENR, Division of Water Quality
- Compliance with the 2006 revision of *MCB Camp Lejeune's Recovery Plan for the Red-cockaded Woodpecker*
- Concurrence from the United States Fish and Wildlife Service (USFWS) on informal consultation regarding red-cockaded woodpecker (RCW) and rough-leaved loosestrife
- 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
- Water Connection Permit from the NCDENR, Public Water Supply Section
- Clean Air Act, Title V Construction and Operation Permit from the NCDENR, Division of Air Quality
- Concurrence from the North Carolina State Historic Preservation Officer on cultural resource effects findings
- Anti-Terrorism/Force Protection security requirements in accordance with Marine Corps Order P5530.14, Marine Corps Physical Security Program Manual, 21 December 2000

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## **2.0 PROPOSED ACTION AND ALTERNATIVES**

The CEQ'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 would avoid or minimize adverse effects of these actions on the quality of the human environment" (40 CFR 1500.2 (e)). This chapter provides a detailed description of the proposed action and a description of project alternatives, including alternatives eliminated from detailed analysis.

### **2.1 Description of the Proposed Action**

The USMC proposes as Phase IV and Phase V of the Family Housing Privatization Initiative to lease Base property to a Public Private Venture (PPV) partner to construct and maintain for a 50-year lease period approximately 850 family housing units for enlisted military personnel, and two Department of Defense Education Activity (DoDEA) Schools at Marine Corps Base (MCB) Camp Lejeune, North Carolina. The construction of family housing units would address the existing housing deficit as documented in the 2007 Housing Market Analysis Update (Robert D. Niehaus, Inc., 2007). The proposed action represents Phases IV and V of the PPV Initiative at MCB Camp Lejeune. The new homes, schools, and associated infrastructure and facilities would be constructed on any portions of Sites 1, 2, 3, 5, and 8 at MCB Camp Lejeune that are determined to be suitable for development (Figure 2-1). In the context of this EA, land suitable for development is land that is not encumbered by land use constraints (e.g., wetlands, threatened and endangered species habitat, other natural and cultural resources) as described and evaluated in this EA. In addition, the USMC proposes to lease Base property to a PPV partner to construct and maintain, as a continuation of Phase II of the PPV Initiative, approximately 110 units of family housing for officers, and associated infrastructure and facilities, on any portions of the Wilson Boulevard Site at MCAS New River that are determined to be suitable for development (Figure 2-2).

The proposed PPV neighborhood concept would include high density housing (i.e., approximately 4-6 units per acre), a percentage of which would be two-story townhomes (i.e., duplex or triplex), and a smaller percentage would be single-story homes with handicap-accessible design features.

The multiple-parcel study area is primarily surrounded by existing housing areas, specifically the Paradise Point housing area along Seth Williams Boulevard to the west of Sites 1 and 3, the Watkins Village and Berkeley Manor enlisted housing areas to the south of Site 5 and to the east of Sites 1 and 2, and the Tarawa Terrace enlisted housing areas to the east of Site 8. The construction of the proposed homes, schools, and associated infrastructure and facilities would require site preparation. At Site 8, preparation would include the demolition of the concrete pads that formerly supported trailer homes (including the adjacent land already conveyed to the PPV partner and formerly occupied Knox Trailer Park); at the Wilson Boulevard Site, preparation would include demolition of a concrete pad that formerly supported a building and removal of the entrance driveway and former parking area.

# Military Family Housing PPV EA Project Location - MCB Camp Lejeune



-  PPV Housing Project Area
-  Existing Housing Area
-  Existing Roads
-  Existing Streams and Ponds
-  MCB Camp Lejeune - Installation Boundary

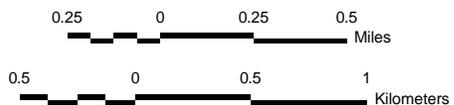
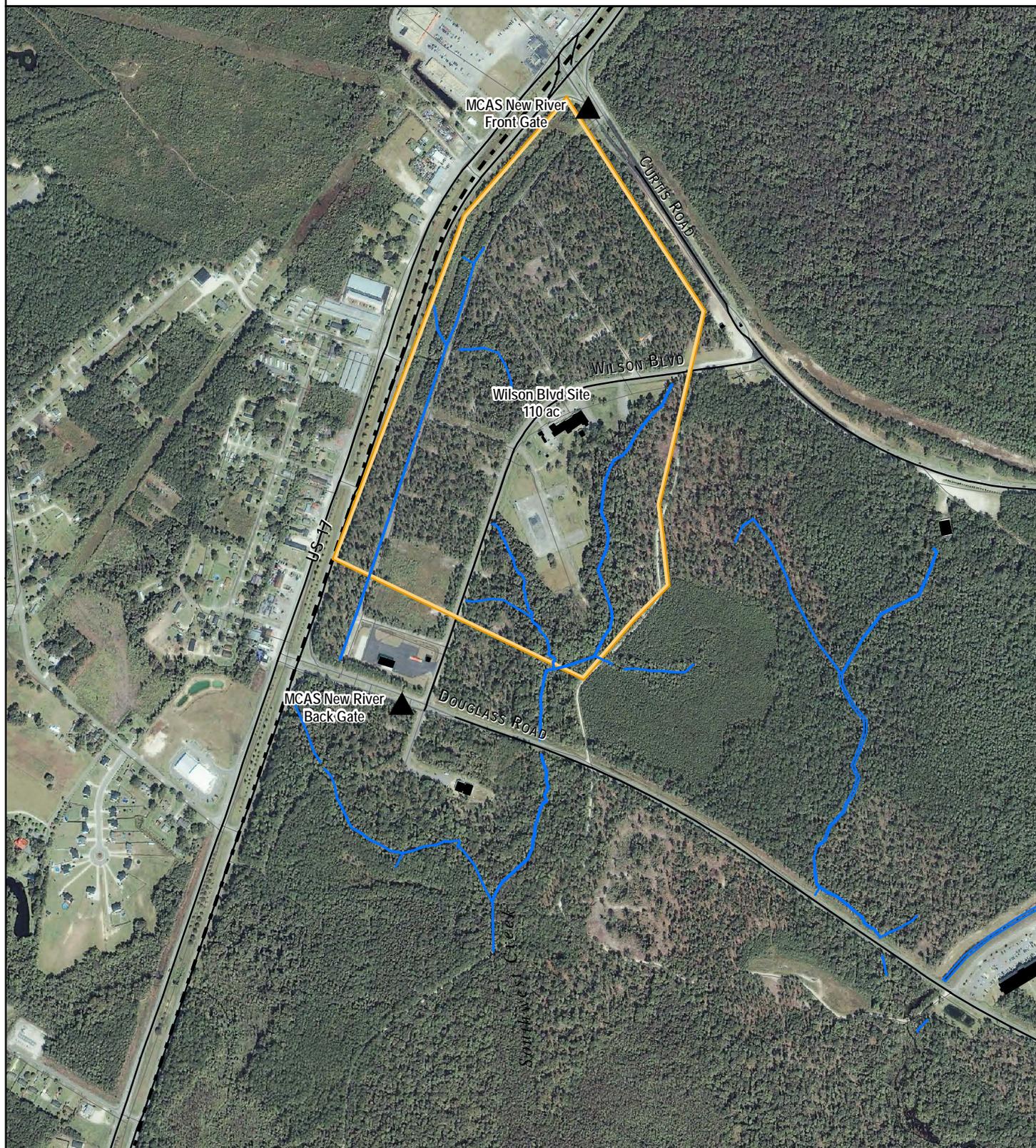


Figure 2-1

Note: 2006 Aerial Photography

# Military Family Housing PPV EA Project Location - MCAS New River



- PPV Housing Project Area
- Existing Gate
- Existing Roads
- Existing Streams and Ponds
- MCAS New River Installation Boundary

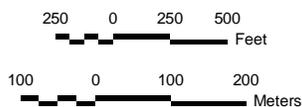


Figure 2-2

Note: 2006 Aerial Photography

Figures 2-1 and 2-2 show the location of the six sites comprising the study area. MCB Camp Lejeune would determine the exact acreage/areas that would be developed and establish the property boundaries, roads, and utility line locations that would also be required as part of the construction activities associated with the proposed PPV housing and DoDEA School construction components of the proposed action. Upon completion of construction, the PPV would transfer the two new schools to the DoDEA.

## **2.2 Alternatives Considered But Dismissed**

Several alternative sites for fulfilling the purpose and need of the proposed action were considered but dismissed from further study. For Phases IV and V of the Family Housing Privatization Initiative, MCB Camp Lejeune considered nine (six primary and three secondary) sites. MCB Camp Lejeune utilities and environmental management staff evaluated each of the nine sites in reference to established land use and infrastructure criteria, including but not limited to: proximity to areas of potential environmental concern (e.g., contaminated sites, restoration sites), availability of electricity and natural gas, capacity for provision of drinking water and treatment of wastewater, and potential impacts to wetlands, cultural resources, and threatened and endangered species.

In addition, the completion of an evaluation of risk in 2007 and other environmental studies in 2008 provided sufficient data to conclude that several sites under consideration were suitable for the construction of housing. The end result of this planning evaluation was the selection of five of the nine sites as preferred sites for the construction of homes for enlisted personnel and two schools at MCB Camp Lejeune and one preferred site for the construction of officer housing at MCAS New River. The current boundaries of the Wilson Boulevard Site reflect the decision to evaluate the northwest portion of the former Site 1: Douglass Road (considered as part of the Supplemental EA as described in Section 1.3) with additional land located on the west side of Wilson Boulevard in order to optimize the development of land unconstrained by established land use controls. The sites comprising the study area for this EA are identified as MCB Camp Lejeune Sites 1, 2, 3, 5 and 8 on Figure 2-1 and the MCAS New River Wilson Boulevard Site on Figure 2-2.

The remaining MCB Camp Lejeune alternative sites, for which insufficient data exist at this time to determine their suitability for residential development, will not be considered further in this EA. If MCB Camp Lejeune considers the development of these or other sites for future phases of housing privatization, additional environmental analysis will be conducted.

## **2.3 No Action Alternative**

Under the No Action Alternative, the proposed homes and schools would not be constructed. Without the homes, the housing deficit for military personnel and their families would continue to be a serious concern for MCB Camp Lejeune and MCAS New River.

For this reason, the No Action Alternative is not considered a reasonable alternative. However, CEQ guidelines stipulate that the No Action Alternative be analyzed to assess any environmental consequences

that may occur if the proposed action is not implemented. Therefore, this alternative is carried forward for analysis in this EA.

**Table 2.3-1 Evaluation of Alternatives**

<b>Impact</b>	<b>No Action Alternative</b>	<b>Proposed Action</b>
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.	A small percentage of forested land would be lost, but the overall land use would not change, and the proposed action would generally be compatible with existing and surrounding land use classifications.  Implementation of the proposed action would be consistent with the enforceable policies of North Carolina's approved Coastal Management program.
Socioeconomics and Environmental Justice	No construction would occur and a deficit in suitable housing would still exist. There would be no socioeconomic impacts, including impacts to minority populations, low-income populations, or children.	Minor population shifts would occur as military families located in the private sector would relocate to 850 new on-base family housing units. Short-term positive effects to the local economy would occur during the construction phase. No disproportionately adverse impacts to minorities, low-income populations, or children would occur.
Community Facilities and Services	There would be no change in existing demands on community facilities and services.	Demands on law enforcement and fire/emergency services would increase. No adverse impacts to on-base schools would occur. Establishment of two new on-base schools would help alleviate overcrowding in Onslow County Schools and would result in a decrease of impact aid to off-base schools. There would be one or more road crossings along a multi-use Greenway Trail that borders Sites 2 and 3. An equestrian trail mostly within Site 1 would be lost or re-routed. The land area available for hunting would be reduced.
Transportation and Traffic	Traffic levels in the vicinity of the project areas would remain unchanged.	There would be temporary short-term impacts to installation traffic from increased construction activity vehicles. Once housing units and schools are constructed, traffic volumes on adjacent roads would increase.
Air Quality	No construction-related emissions would occur and emissions would be identical to the existing baseline conditions.	Increased air emissions would be generated from operation of construction vehicles, facility construction, and operation and maintenance of facilities. Air quality is not expected to deteriorate.

<b>Impact</b>	<b>No Action Alternative</b>	<b>Proposed Action</b>
Noise	Existing on-base noise conditions would remain relatively unchanged.	Minor, temporary construction-related noise impacts would occur in the vicinity of proposed construction sites.
Infrastructure and Utilities	The demands on infrastructure and utilities would remain unchanged.  The military construction project P-1220B to increase transformer capacity at Substation #2 would not occur.	The demand for potable water, wastewater treatment, electricity and telecommunications services, solid waste collection and disposal, and stormwater management would increase commensurate with the number of new houses constructed and the number of military personnel and dependents living on Base.
Cultural Resources	Historic and archaeological resources would not be affected because there would be no site development or ground disturbing activities.	There are no cultural resources eligible for listing on the National Register of Historic Places located within the proposed project areas. Therefore, cultural resources would not be affected by the proposed action.
Natural Resources	No construction of homes or schools would occur; natural resources would not be impacted within the proposed project areas.	Geology would not be affected. A net increase in impervious surface would result. Minor impacts to topography, soils, and water resources would be minimized through implementation of best management practices and erosion and sedimentation control plans. Wetlands and waters of the US would be avoided to the maximum extent feasible during design and construction. No houses or schools would be built in the 100-year floodplain. Minor adverse impacts to wildlife would not be expected to affect the stability of wildlife populations on Base or migratory bird populations. Construction activities would disturb an estimated 165 ha (407 ac) of forest habitat. The proposed action is not likely to adversely affect any federally-listed threatened or endangered species.
Hazardous Materials and Hazardous Waste	Existing conditions related to hazardous materials and waste management and contaminated sites would not change.	Several contaminated sites and historical ranges are located on or near the proposed project areas. Appropriate courses of action would be established 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 sites could be affected. Any contamination would be remediated prior to construction.

**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 CEQ regulations for implementing NEPA (40 CFR 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 and MCAS New River, North Carolina. The proposed action includes: construction of military family housing units for enlisted personnel and officers, two DoDEA schools, and associated infrastructure and facilities.

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

Land use and coastal zone management are included in this EA because construction of the proposed houses, schools, infrastructure (roads, utilities), and associated facilities would result in some land use changes at MCB Camp Lejeune and MCAS New River, which are located within Onslow County, one of the state's 20 coastal counties.

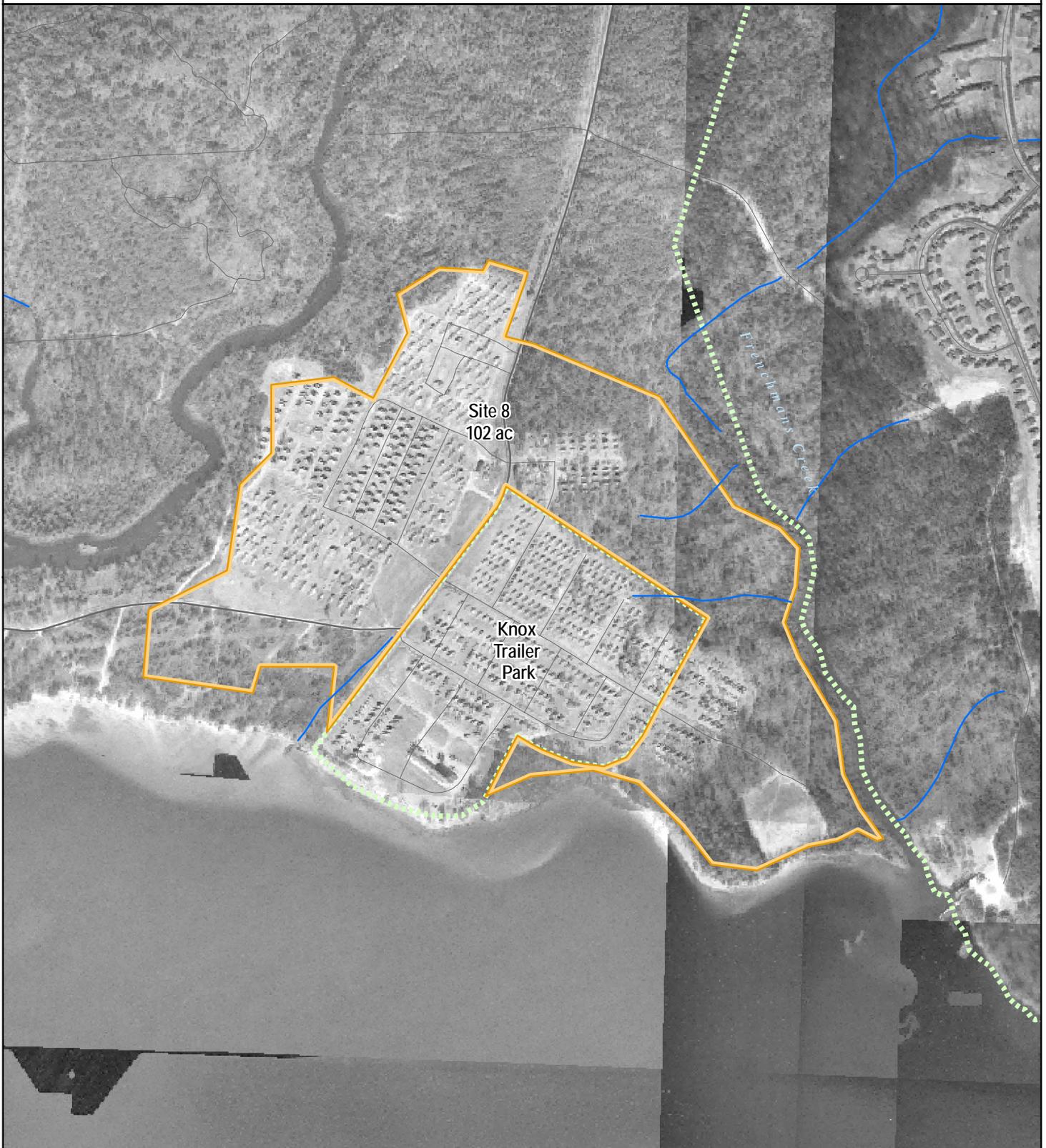
##### **3.1.1 Land Use**

Land use at MCB Camp Lejeune and MCAS New River is predominantly for operational and training purposes, including land and water training ranges, impact areas, and maneuver and training areas. This land use reflects the primary mission of MCB Camp Lejeune, which is to maintain combat ready units for expeditionary deployment. Other land uses at the installations include cantonment areas, designed to support administrative and industrial nature activities.

Much of the land area of MCB Camp Lejeune and MCAS New River is forested. The quality of this forest habitat varies according to its location, for example, in cantonment areas as compared to areas primarily classified as Operational and Training lands. Forested areas near the cantonment portions of the Base are subject to frequent disturbance and may have previously supported facilities. As the needs of the Base change, facilities are occasionally demolished and the sites are sometimes left vacant, allowing native vegetation to reestablish on the site. These reestablished forested sites however, are not intensively managed under the Base forest management program. Conversely, forested areas in the Operational and Training areas are intensively managed, in a manner consistent with safety requirements associated with range activities, for natural resources values and commodity production. These forested areas, therefore, typically support higher quality habitat with a predominance of natural communities as compared to the reforested lands in cantonment areas. Both types of forestlands, as described here, are used for recreational activities such as hunting.

MCB Camp Lejeune Sites 1, 2, 3, and 5 were not previously developed, but Site 8 contained part of a former trailer park (Figure 3-1a). The Wilson Boulevard site is a good example of an area that previously supported intense development, and subsequently was unused or subjected to less intense use, allowing vegetation to reestablish. As depicted in Figure 3-1b, the site supported a dense layout of trailer homes during the 1950s. Evidence of this previous land use is still present on the site in the form of concrete rubble and foundations.

# Historic Land Use - MCB Camp Lejeune Site 8



-  PPV Housing Project Area
-  Existing Roads
-  Existing Streams and Ponds

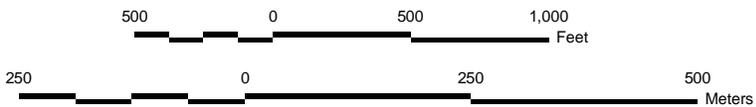


Figure 3-1a

Note: 1956 Aerial Photography

# Historic Land Use - MCAS New River, Wilson Boulevard Site



-  PPV Housing Project Area
-  Existing Roads
-  Existing Streams and Ponds
-  MCAS New River Installation Boundary



Figure 3-1b

Note: 1956 Aerial Photography

Figures 3-2a and 3-2b depict current land use designations on and in the vicinity of the proposed project sites. The proposed project sites are located in areas largely categorized as Undeveloped, with the exception of MCB Camp Lejeune Site 8, which is designated as Housing and Community facilities on its eastern half and Operational and Training Facilities on its western half. The Wilson Boulevard Site at MCAS New River is also presently designated as Operational and Training Facilities on one half of the site and Supply and Facilities on the other half (MCB Camp Lejeune, 2008b). Each of the land parcels that comprise the proposed project sites is forested, with the exceptions of Site 8 and the Wilson Boulevard Site, which are both already partially cleared.

MCB Camp Lejeune Sites 1, 2, and 3 are bordered on the west by the Paradise Point housing area. Nearby facilities include schools on Stone Street and the Berkeley Manor and Watkins Village housing areas. Site 5 is bordered on the west by the Camp Lejeune Naval Hospital and on the south by Brewster Boulevard. Site 8 encompasses the footprint of the former Knox Trailer Park, located west of the Tarawa Terrace housing area (Figure 3-1a). The proposed project sites on MCB Camp Lejeune contain other features such as unpaved roads, unpaved riding trails, overhead power lines, and at least five unnamed streams.

Site 1 is located immediately north of Stone Street between Paradise Point and Watkins Village housing areas. Site 1 is comprised of approximately 97 ha (241 ac) of predominantly forested uplands made up of oak, sweetgum, poplar, beech, and loblolly pine, with clearings in the northern and southern portions of the parcel (MCB Camp Lejeune, 2007b).

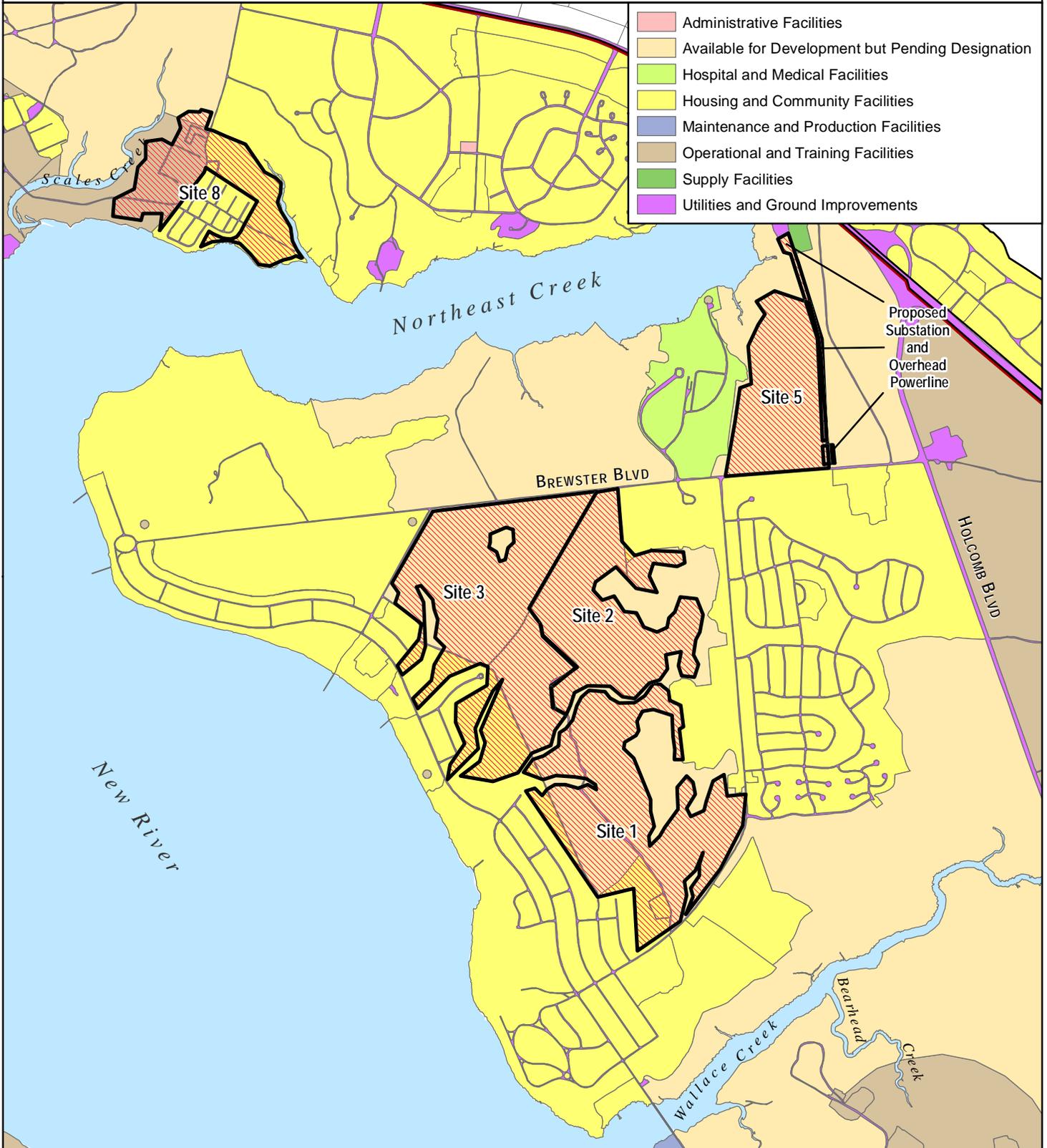
Site 2 encompasses approximately 70 ha (172 ac) located west of Berkeley Manor, immediately north of Site 1 with an unnamed tributary to the New River separating the two parcels, immediately east of Site 3 and immediately south of Brewster Boulevard. The forests of Site 2 are comprised of oak, sweetgum, poplar, beech, and loblolly pine, with two clearings in the northwest portion of the site (MCB Camp Lejeune, 2007b).

Site 3 is located immediately north of Site 1, separated only by an unnamed tributary to the New River, immediately west of Site 2, and is comprised of 293 ac. Site 3 is bordered on the western side by the Paradise Point housing area and wetlands and waters which drain into the New River, and the northern boundary is comprised of Brewster Boulevard. With the exception of an easement that crosses the western side of the parcel in the southern portion of the subject site, the parcel is completely forested. The forests of Site 3 are comprised of oak, sweetgum, poplar, beech, and loblolly pine.

Together Sites 1, 2, and 3 comprise approximately 280 ha (700 ac) of contiguous and predominantly undeveloped land (MCB Camp Lejeune, 2007b).

Site 5 is comprised of approximately 50 ha (123 ac) and is located south of Northeast Creek, immediately north of Brewster Boulevard, and immediately east of the Naval Hospital. Site 5 is bisected north to south by an unnamed tributary that feeds Northeast Creek. There is a clearing in the southern portion of the parcel, and a road that bisects the southeastern corner of the property. The forests of Site 5 are comprised of oak, sweetgum, poplar, beech, and loblolly pine (MCB Camp Lejeune, 2007b).

# Land Use for MCB Camp Lejeune Sites



- Administrative Facilities
- Available for Development but Pending Designation
- Hospital and Medical Facilities
- Housing and Community Facilities
- Maintenance and Production Facilities
- Operational and Training Facilities
- Supply Facilities
- Utilities and Ground Improvements

- PPV Housing Project Area
- MCB Lejeune
- Primary Roads
- Streets

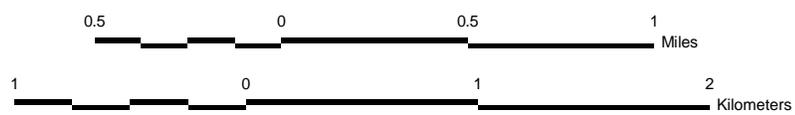
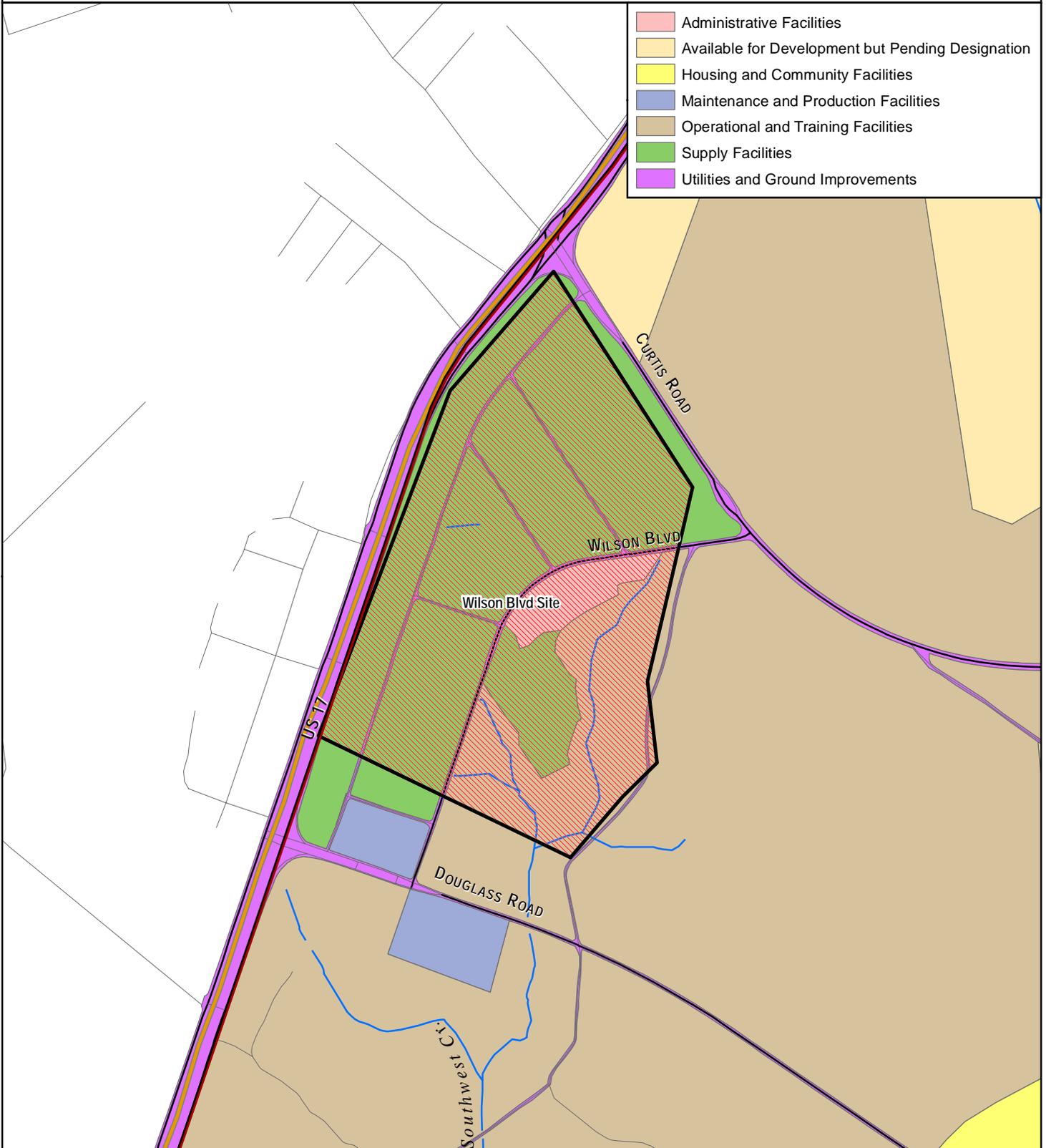


Figure 3-2a

# Land Use for the Wilson Boulevard Site



- Administrative Facilities
- Available for Development but Pending Designation
- Housing and Community Facilities
- Maintenance and Production Facilities
- Operational and Training Facilities
- Supply Facilities
- Utilities and Ground Improvements

- PPV Housing Project Area
- MCB Lejeune
- Primary Roads
- Streets
- Existing Streams and Ponds

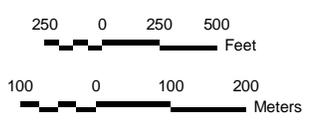


Figure 3-2b

Site 8 is comprised of approximately 41 ha (102 ac) located immediately north of Northeast Creek, west of Frenchmans Creek, and immediately east of Scales Creek. The site surrounds the area known as the former Knox Trailer Park, an existing housing area that is now vacant (i.e., the trailer units have been removed, but the pads and utility hookups remain). Three unnamed tributaries originate onsite; two flow into Frenchmans Creek and one flows directly into Northeast Creek. Much of the parcel was cleared in the past and is being reforested (Figure 3-1a). The forests of Site 8 are comprised of oak, sweetgum, poplar, beech, and loblolly pine (MCB Camp Lejeune, 2007b).

According to Base personnel, Site 8 has been vacant and out of operational use for approximately 2 years. The site formerly contained a clam shell-type facility that was used by the Marine Aviation Logistics Squadron 29 for storage and repair of Mobile Maintenance Facilities and a car garage that was used by the Vehicle Inspections Activity and by several different military units and organizations for storage. Both the clam shell and car garage structures were demolished within the past 2 years. The Base also used part of Site 8 in the past to store traffic barriers that were not in use (Turner, 2008). Surrounding land uses include those designated for Housing and Community Facilities, Utilities, and Hospital and Medical Facilities.

The Wilson Boulevard Site at MCAS New River is bisected by Robert L. Wilson Boulevard and is situated east of Wilmington Highway (United States Route 17 [US 17]), north of Douglass Road, and south of Curtis Road (Figure 3-1b). However, the site is partially cleared and contains the foundation of a building that was previously demolished.

The Wilson Boulevard Site is composed of approximately 45 ha (110 ac), which contain an abandoned building site, including concrete foundation, and a field that is transitioning back to a hardwood forest. MCAS New River forests are comprised largely of loblolly pine, which accounts for 75 percent of all timber species present. Black gum is the most common hardwood (MCB Camp Lejeune, 2007b). The headwaters of Southwest Creek originate in the southern portion of the parcel (MCB Camp Lejeune, 2008b).

The dominant land cover across the region including MCB Camp Lejeune and MCAS New River is loblolly pine in the uplands; pure hardwood occupies bottomlands and drainages; and a mixture of pine and hardwood exists on the mid-slopes. Dominant hardwood species include blackgum on the lowlands and oak, sweetgum and tulip poplar on the uplands (MCB Camp Lejeune, 2007b).

The management of forestland located in cantonment areas presents unique opportunities. Generally, prescribed burning is a key management tool used in the forests of MCB Camp Lejeune for maintaining ecosystem health and promoting longleaf pine. Because of concerns about smoke management, MCB Camp Lejeune is unable to execute prescribed burning of timber stands that are intermingled with urban areas such as busy highways, schools, housing, and industrial complexes. As a result, in the cantonment areas MCB Camp Lejeune forestry managers emphasize the management of loblolly pine. Much of land in these areas is expected to be developed in the future, which would further increase fragmentation of

forest habitat. Timber compartments that are considered to be in cantonment areas are 1, 2, 3, 4, 10, 11, 12, 17, 31, and 54.

The proposed project sites are located in forest Compartments 1, 3, 4, and 11. Compartment 1 comprises 800 ha (1,970 ac); Compartment 3 comprises 770 ha (1,900 ac); Compartment 4 comprises 760 ha (1,875 ac); and Compartment 11 comprises approximately 400 ha (1,000 ac). Each of these compartments contains managed forestland, and each is located within the cantonment areas of MCB Camp Lejeune (MCB Camp Lejeune, 2007b). This designation allows for the management of loblolly pine rather than longleaf pine, which thrives in an environment associated with frequent prescribed fire. Prescribed fire is not an option in Compartments 1, 3, 4, and 11 due to urban interface concerns. The dominant land cover is loblolly pine, which occupies over 215 ha (532 ac) of upland area. Pure hardwood occupies approximately 120 ha (300 ac) of bottomlands and drainages, and a mixture of pine and hardwood exists on the mid-slopes. Compartment 11 has historically been an area of low intensity forest management with priority placed on forest health and aesthetic value (Marshburn, 2008).

### **3.1.2 Coastal Zone Management**

Coastal Zone Management is included in this EA because the proposed action would occur within Onslow County, a coastal county. The coastal zone is rich in natural, commercial, recreational, ecological, industrial, and aesthetic resources, and therefore, it is protected by legislation for the effective management of its resources. The Coastal Zone Management Act of 1972 (16 United States Code [USC] § 1451, et seq.) provides assistance to states, in cooperation with federal and local agencies, for developing land and water use programs in the coastal zone.

The Coastal Zone Management Act is implemented through state coastal zone management programs. Federal lands are excluded from the jurisdiction of these state programs. However, activities on federal lands are subject to Coastal Zone Management Act federal consistency requirements if the federal activities would have an effect, including a reasonably foreseeable effect, on any land or water or natural resource of the coastal zone.

The North Carolina Coastal Area Management Act (CAMA) of 1974 was passed in accordance with the federal Coastal Zone Management Act. It established a cooperative program of coastal area management between local and state governments. CAMA established the Coastal Resources Commission, required local land use planning in the coastal counties and provided for a program for regulating development. The North Carolina Coastal Management Program was federally approved in 1978. North Carolina's coastal zone includes the 20 counties that are adjacent to, adjoining, intersected by, or bounded by the Atlantic Ocean or any coastal sound, including Onslow County. The coastal zone extends seaward to the 6 km (3 nautical miles) territorial sea limit.

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

defined as AECs. These projects are reviewed under the CAMA General Policy Guidelines. Both of these are explained in more detail below.

### **Areas of Environmental Concern**

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

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 Area, which include coastal complex natural areas; areas providing habitat for federal or state designated rare, threatened or endangered species; unique coastal geologic formations; or significant coastal archaeological or historic resources.

### **General Policy Guidelines**

Projects that are located outside of an AEC are reviewed under the 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 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
- 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.

While local governments have the initiative for planning under the CAMA, the state has designated areas of environmental concern in the following four broad categories: estuarine and ocean systems, ocean hazard areas, public water supplies, and natural and cultural resource areas.

The North Carolina Coastal Area Management Act 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. Upon approval by the North Carolina Coastal Resources Commission, each plan becomes part of the North Carolina Coastal Management Plan. Coastal zone management policies adopted in each plan must be consistent with established state and federal policies. Onslow County's Citizen's Comprehensive Plan for Onslow County addresses land use planning in relation to the North Carolina Coastal Area Management Act (Onslow County Planning and Development Department, 2003).

None of the proposed project sites is currently known to contain a designated Area of Environmental Concern, with the exception of MCB Camp Lejeune Site 8 (Figure 3-3). Approximately 2.75 acres of Site 8 are located within the Coastal Shoreline Area of Environmental Concern. The area of overlap occurs on the eastern and southern edges of Site 8 along Northeast Creek and Frenchmans Creek.

Other coastal resources not designated as AECs in the vicinity of the proposed project sites include primary nursery areas. The eastern portion of MCB Camp Lejeune Site 8 (along Frenchmans Creek) is considered a primary nursery area.

### **3.2 Socioeconomics**

An assessment of socioeconomic impacts is included in this EA because the proposed action addresses the current deficit in existing military housing. Environmental justice and impacts to children are also included to determine if the proposed action would affect low-income populations, minorities, and/or children in the vicinity of MCB Camp Lejeune and MCAS New River. For the purpose of analyzing impacts related to environmental justice, the topics of race, ethnicity, income, and employment are briefly discussed. The region of influence for socioeconomic impacts is defined as Onslow County and the City of Jacksonville. The City of Jacksonville is entirely located within the boundaries of Onslow County.

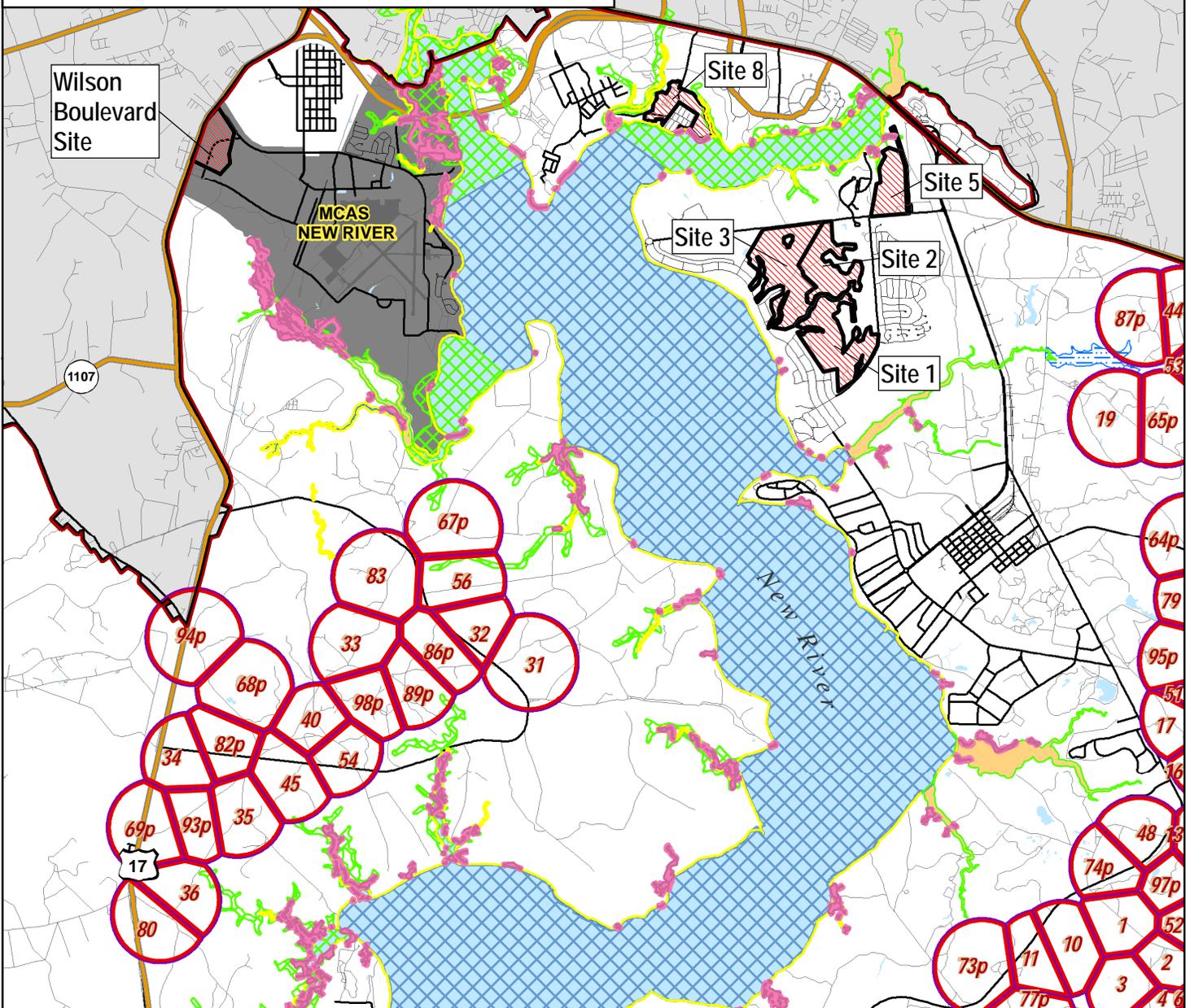
It is expected that the proposed housing units would be occupied in the future by personnel currently residing within the region of influence. Because the proposed action would neither increase nor decrease the number of families living within the region of influence, the topic of demographics is not analyzed. It should be noted that the number of families residing at MCB Camp Lejeune in the future would increase by approximately 850, commensurate with the number of new housing units, under the proposed action.

#### **3.2.1 Housing**

The two installations, MCB Camp Lejeune and MCAS New River, have a combined inventory of approximately 4,450 family housing units distributed across 10 military housing areas (Robert D. Niehaus, Inc., 2007). As indicated in Section 1.3, the proposed action would reduce the existing deficit in military housing at MCB Camp Lejeune by increasing the number of homes available for enlisted military personnel (rank E-5 and below) and their families. The proposed action would not increase the number of homes at MCAS New River, because the homes proposed for construction there would replace existing homes that are scheduled for demolition.

# Coastal Waters and Primary Nursery Areas

- Coastal Shoreline Area of Environmental Concern (75 ft)
- Inland Shoreline Area of Environmental Concern (30 ft)
- RCW Forage Areas
- North Carolina Natural Heritage Area
- Primary Nursery Areas
- Special Secondary Nursery Areas
- Estuarine Wetlands
- Coastal Waters
- Inland Waters



- PPV Housing Project Area
- MCB Lejeune
- Streets
- Primary Roads
- MCAS New River

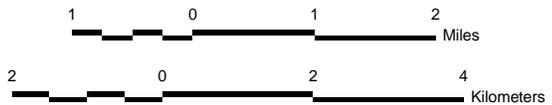


Figure 3-3

Approximately 77 percent of the MCB Camp Lejeune military personnel with families live off-base (MCB Camp Lejeune, 2005a). Currently, 3,369 military families reside in Base housing on MCB Camp Lejeune, and 358 military families reside in Base housing on MCAS New River. Families of active duty military members with the rank of E-5 and below account for 68 percent of the total housing demand (MCB Camp Lejeune, 2005a).

A 2007 Housing Market Analysis conducted for MCB Camp Lejeune (which included the MCAS New River area) assessed the capacity of the area housing market to provide military personnel with housing meeting USMC and DoD criteria for acceptability to include location, affordability, quality, and number of bedrooms. Table 3.2-1 summarizes the statistics relevant to the current (2007) shortfall. The community housing shortfall represents the number of military families (in this case they are assumed to be renters) who were determined to be “unacceptably housed” (i.e., they were not successful in finding community housing that meets all Marine Corps standards for affordability, location, quality, and number of bedrooms).

**Table 3.2-1 Military Housing Requirements, MCB Camp Lejeune, 2007**

<b>Indicator</b>	<b>2007</b>
<b>Total Military Families</b>	<b>17,200</b>
Families Living in Community Housing	13,550
Families Living in Base Housing	3,650
Community Housing Shortfall	3,975
<b>Total On-Base Military Family Housing Requirement</b>	<b>7,625</b>
Public Private Venture (On-Base) Housing Inventory	4,322
Deficit of Military Family Housing	3,303

*Source: Robert D. Niehaus, Inc., 2007*

After taking into account suitable existing family housing and the availability of adequate private sector housing necessary to meet military family needs, the study determined that a shortfall of community housing existed in the market area. Specifically, the analysis determined that there is a shortfall of 3,975 community housing units based on actual occupancy in 2007 and projected a shortfall of 5,846 units in 2012. In addition, the study determined that there is a deficit of 3,303 military family housing units in 2007.

### **3.2.2 Environmental Justice**

Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,” 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.

Table 3.2-2 presents census data on the 2000 racial and ethnic make-up of the ROI where it can be seen that the minority populations represent a relatively small proportion of the total population. Compared to the state of North Carolina as a whole, Onslow County has similar racial and ethnicity population characteristics. The relative proportions of blacks or African Americans, and American Indians and Alaska natives are higher in the City of Jacksonville than in the state.

**Table 3.2-2 Race and Ethnicity 2000 (percent)**

Jurisdiction	White	Black <sup>1</sup>	Other Non-White <sup>2</sup>	Hispanic or Latino <sup>3</sup>
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

<sup>1</sup> Having origins in any of the black racial groups of Africa.

<sup>2</sup> Includes individuals of two or more races.

<sup>3</sup> Hispanic origin, may be of any race.

Source: United States Census Bureau, 2007

Median household and family incomes, as well as percentages of persons living below the poverty level, as reported in the 2000 Census, are shown in Table 3.2-3. Compared to the State of North Carolina, both Onslow County and the City of Jacksonville had lower median incomes in 2000. The percentage of persons below poverty level was higher in Jacksonville compared to the state, and the percentage in Onslow County was slightly higher compared to the state in 2000.

**Table 3.2-3 Income and Poverty**

Jurisdiction	2000			2000 Per Capita Income
	Median Household Income	Median Family Income	Percent of Persons Below Poverty	
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

Source: United States Census Bureau, 2007

Executive Order 13045, “Protection of Children from Environmental Health Risks and Safety Risks,” requires each federal agency to identify and assess environmental health and safety risks to children. “Environmental health and safety risks” are defined as “risks to health or to safety that are attributable to products or substances that the child is likely to come in contact with or ingest.”

Children who are dependents of military personnel are authorized to access MCB Camp Lejeune and MCAS New River. Children are not likely to be present within the proposed project areas during construction activities. However, the new housing units and schools would be co-located in areas with similar infrastructure. Therefore, children are likely to be present in surrounding areas. The closest

facilities (e.g., schools, housing areas) are located less than 0.8 km (0.5 mile) from the proposed project areas.

### **3.3 Community Facilities and Services**

Community facilities and services, such as emergency services, hospitals, schools, and recreational facilities are included in this EA because the proposed action would increase the number of Base residents, which would result in an increased demand related to these facilities and services. This section provides a description of community facilities and services primarily within the boundaries of MCB Camp Lejeune and MCAS New River.

#### **3.3.1 Emergency Services**

The MCB Camp Lejeune Fire Protection Division maintains adequate staff and equipment to provide response to fire, hazardous material, emergency medical incidents to the installations, and to provide initial response to fuel or oil spills.

The Provost Marshal's office, located on McHugh Boulevard, is the primary station for the Military Police force (MCB Camp Lejeune, 2005a). The Military Police maintain adequate staff and vehicles to patrol the installations and to maintain control over gate access on a daily basis.

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).

#### **3.3.2 Hospitals**

The Naval Hospital Camp Lejeune, activated in 1943, is presently a fully accredited hospital that maintains four inpatient areas, an Ambulatory Procedures Unit, six off-site medical support facilities (or branch clinics), and a number of specialized clinics located throughout the Base for convenient access (Naval Hospital Camp Lejeune, 2008). MCB Camp Lejeune maintains a cooperative agreement with the Onslow Memorial Hospital, located in the City of Jacksonville, to serve as a local alternative site for provision of medical care for the Base population (DoN, 2005).

#### **3.3.3 Schools**

School-age children of military families residing at MCB Camp Lejeune and MCAS New River attend the MCB Camp Lejeune Dependents Schools (CLDS) system, which operates five elementary schools, one middle school, and one high school. Total enrollment in CLDS is approximately 3,200, and total capacity is approximately 4,300 (Dargan, 2006).

The CLDS receives 100 percent of its funding from the Federal government through a direct DoD appropriation. Camp Lejeune Dependents Schools 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 the CLDS in FY06 was \$3,234,868 for an enrollment of 3,217 students (Humphrey, 2008).

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. Onslow County’s public schools currently include 18 elementary schools, 8 middle schools, 7 high schools, one early childhood development center, and one alternative school, the Onslow County Learning Center. For the 2007-2008 school year the total enrollment was approximately 24,500 students (Onslow County Schools, 2008).

During the 2006-2007 school year, 12 private and religious schools were operating in Onslow County serving students from kindergarten to twelfth grade. Nine of the schools were of various Christian denominations, while the remaining three were listed as independent. Total enrollment for the 12 non-public schools was 1,217 students (North Carolina Department of Administration, 2008).

Table 3.3-1 provides the student membership and school capacity for the elementary, middle, and high schools in the Onslow County public school system.

**Table 3.3-1 Onslow County Public School Membership and Capacity – 2006-2007 School Year**

Schools	Capacity	Membership	
	Students	Students <sup>1</sup>	Percent of Capacity
Elementary	9,795	10,988	112.2
Middle	5,338	5,244	98.2
High	6,315	6,229	98.6
Total	21,448	22,461	104.7

<sup>1</sup> Average Daily Membership for June 2007

Source: Grantham, 2008 and Hudson, 2008 in MCB Camp Lejeune, 2008a

The data in Table 3.3-1 indicate that membership in Onslow County elementary schools exceeds capacity by 13 percent, while the middle schools 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 effect of MCB Camp Lejeune military families on the Onslow County schools’ population is recognized as a significant factor in exceeding capacity, since approximately one-third of the students in the Onslow County public school system are military-connected (MCB Camp Lejeune, 2005a).

Onslow County approved a county budget of approximately \$35 million for the public school system during the 2007-2008 school year. The total per student expenditure is \$7,206 for the 2007-2008 school year, including the child nutrition program (Onslow County Schools, 2008).

### **3.3.4 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 determine the amount of federal impact aid the school district should receive, each student is represented by a numeric value according to a weighted scale. The higher the weighted value, the higher the impact these students have on a particular school district. Weighted values for students associated with MCB Camp Lejeune are as follows (MCB Camp Lejeune, 2005):

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

The Onslow County school district reported 8,664 federally connected students for the 2006-2007 school year (Hollamon, 2008 in MCB Camp Lejeune, 2008a). 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. Approximately 29 percent of the children of active duty personnel and 38 percent of children of civilian personnel reported for the 2005-2006 school year were associated with MCB Camp Lejeune (Ottaway, 2006 in MCB Camp Lejeune, 2007d). The remaining children were associated with MCAS Cherry Point and Seymour Johnson Air Force Base. Onslow County Schools received \$2.8 million in federal impact aid in FY 2007 (Hollamon, 2008 in MCB Camp Lejeune, 2008a).

### **3.3.5 Recreational Facilities**

Currently The Marine Corps Community Services (MCCS) offices for MCB Camp Lejeune provide a full range of recreational services and on-base facilities to military personnel and their dependents. The MCCS 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

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, 2008). Facilities at the district parks include tennis courts, basketball courts, playing fields, volleyball courts, picnic areas, hiking and jogging trails, and an arena used for rodeos, horse shows, dog shows, and special events. Facilities available at the beach access sites include restrooms, showers, elevated pavilions and observation decks, parking, and access ramps for the handicapped. The 27-km (17-mile) 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, 2008).

Hofmann Forest is located in Onslow County, north of Jacksonville, and Hammocks Beach State Park is located on Bear Island on the Atlantic coast, northeast of MCB Camp Lejeune. The City of Jacksonville operates parks, playgrounds, recreational centers, a skate park, and a system of trails and greenways (Figure 3-4).

MCB Camp Lejeune offers numerous recreational facilities, including a paved, multi-use (jogging, walking, cycling) Greenway Trail that borders Sites 2 and 3 on their northern boundaries along Brewster Boulevard. Hunting is permitted on most forested land on both installations. The forested land on each of the proposed action sites at MCB Camp Lejeune and MCAS New River is designated and managed for archery-only hunting. An equestrian trail is located almost entirely within Site 1, and to a lesser extent, Sites 2 and 3.

### **3.4 Transportation and Traffic**

Transportation and traffic are discussed in this EA because traffic in the vicinity of MCB Camp Lejeune and MCAS New River is a primary concern not only for personnel and others waiting to gain access to the installations, but for the general public traveling in the vicinity of the installations. The increase in personnel and their dependents traveling to the proposed housing areas could affect existing traffic conditions on and off the installations.

The main public roads in the vicinity of both installations are US 17, US 172, and North Carolina Route 24 (NC 24). US 17 runs roughly north-south, connecting Jacksonville with Wilmington, North Carolina, 51 mi (82 km) to the south, and with New Bern, North Carolina, 36 mi (58 km) to the north. US 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, 43 mi (69 km) to the east and Fayetteville, North Carolina, 105 mi (169 km) to the west. Military bus routes are established between the bus terminal at MCB Camp Lejeune and the Post Exchange, Commissary, Courthouse Bay, Camp Geiger, Camp Johnson, Onslow Beach, and the Naval Hospital. No formal bus, rail, bicycle, or pedestrian walkway networks exist to serve the existing housing areas at either installation.

# Recreational Trails in the Vicinity of MCB Camp Lejeune Sites 1, 2 and 3



Figure 3-4

Note: 2006 Aerial Photography

The Camp Lejeune complex can be accessed via nine gates located throughout the installation. Sites 1, 2, 3, and 5 would most likely be accessed from NC 24 via the Main Gate at Holcomb Boulevard and via the Piney Green Gate at Piney Green Road. The Main Gate operates 24 hours a day, 7 days a week but, from 10 PM to 5 AM, one of three incoming traffic lanes is closed. All commercial traffic is restricted to the Piney Green Gate. The Piney Green Gate operates Monday through Friday from 5 am to 7 pm (MCB Camp Lejeune 2007c). Site 8 would most likely be accessed by NC 24 via the Tarawa Terrace Gate which is open 24 hours a day, 7 days a week (MCB Camp Lejeune, 2007c).

At MCAS New River, the Wilson Boulevard Site would be accessed from the US 17 via gate entrances at Curtis Road and Douglass Road. The Curtis Road Gate operates 24 hours a day, 7 days a week while the Douglass Road gate operates Monday through Friday from 6 am to 6 am (MCAS New River, 2008).

Primary roads in the vicinity of Sites 1, 2, 3, and 5 include Brewster Boulevard, Stone Street, and Seth Williams Boulevard. For Site 8, primary roads include Camp Knox Road and Boy Scout Camp Road. At MCAS New River, primary roads in the vicinity of the Wilson Boulevard Site include Douglass Road and Robert L. Wilson Boulevard.

For MCB Camp Lejeune, 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. Of the 19 existing intersections analyzed as part of the study (including intersections at Brewster Boulevard and Camp Knox Road), only intersections at Holcomb Boulevard/Sneads Ferry Road and Holcomb Boulevard/Parachute Tower Road were operating at a negative level of service (i.e., volumes at or near capacity level, or stoppages for long periods of time because of traffic congestion) (HNTB, 2007).

The proposed construction of a new segment of Old Saw Mill Road under a separate action would extend the road to the Watkins Village and Berkeley Manor housing areas, which are located adjacent to Sites 1, 2, 3, and 5. The proposed project would include paving the existing segment of Old Saw Mill Road and extending the road across Holcomb Boulevard to the housing areas. The Environmental Assessment conducted to evaluate potential impacts associated with the construction of the new road segment addresses the need to reduce traffic congestion (MCB Camp Lejeune, 2007c).

### **3.5 Air Quality**

Air quality is of concern relative to the proposed action because its implementation has the potential to introduce air pollutants to the atmosphere.

#### **3.5.1 National Ambient Air Quality Standards and Attainment Status**

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,
- carbon monoxide,
- sulfur oxides,
- nitrogen oxides, and
- lead.

These pollutants can harm human health and the environment, and cause property damage. PM<sub>10</sub>, PM<sub>2.5</sub> and ground-level ozone 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 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 ozone is a primary component of smog. Ground-level ozone 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 ozone are called volatile organic compounds (VOCs) and nitrogen oxides (NO<sub>x</sub>). VOCs 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 VOCs. Nitrogen oxides (NO<sub>x</sub>) 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 sometimes seen when it is smoggy comes from the nitrogen oxides.

EPA 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 (NAAQS). The NAAQS sets 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 3.5-1. The North

Carolina Department of Environment and Natural Resources has an additional standard for total suspended particulates (TSP), which is also included in Table 3.5-1.

**Table 3.5-1 National Ambient Air Quality Standards**

Pollutant <sup>a</sup>	Averaging Time	Primary	Secondary
Ozone (O <sub>3</sub> )	8 Hours	0.075 ppm <sup>b</sup>	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> <sup>b</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	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>	--

<sup>a</sup> These standards, other than for ozone and those based on annual averages, must not be exceeded more than once per year. The ozone standard is attained when the expected number of days per calendar year with a maximum hourly average concentration above the standard is equal to or less than one.

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

Source: USEPA, 2007a.

Marine Corps Base Camp Lejeune and 13 surrounding counties are in an attainment area (for the criteria pollutants) identified as the Southern Coastal Plain Intrastate Air Quality Control Region (defined in 40 CFR Part 81.152). However, under Title V of the Clean Air Act, MCB Camp Lejeune is required to obtain a construction and operation permit from the North Carolina Division of Air Quality for certain emission sources and their associated air pollution control equipment. This permit requires MCB Camp Lejeune to perform intensive monitoring, record keeping, and reporting for over one hundred different emission sources, such as boilers, generators, surface coating operations, and engine testing operations.

### 3.6 Noise

Noise is analyzed in this EA because the proposed construction activities would produce temporary and intermittent increases in noise in the vicinity of the proposed action sites. In addition, noise resulting from vehicle traffic along the existing Base roads would increase in proportion to the increase in the number of

trips to and from the new housing areas and schools when the residents occupy the new homes and the schools open.

Noise may be defined as unwanted sound, and noise is usually objectionable because it causes disturbance or annoyance to the noise receptors. Typically, levels of noise are measured in units called decibels. The zero on the decibel scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. 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. Because the human ear cannot perceive all pitches or frequencies equally well, noise measurements are adjusted or weighted to compensate for the human lack of sensitivity to low-pitched and high-pitched sounds. The A-weighting scale closely resembles the frequency response of the human ear and, therefore, the adjusted unit of measurement, the A-weighted decibel, or dBA, is used to characterize noise, and to quantify the impact of noise, produced by transportation (e.g., vehicle traffic and aircraft operations) and construction activities.

### **3.6.1 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 Preventive Medicine [USACHPPM], 2005).

Noise sensitive land uses typically include areas where development consists of homes, schools, hospitals, and places of worship (i.e., noise sensitive receptors).

### **3.6.2 Noise Data for MCB Camp Lejeune and MCAS New River**

The most recent noise study completed for MCB Camp Lejeune is a June 2007 study prepared by the USACHPPM that included existing and future installation-wide large caliber weapons noise contours (USACHPPM, 2007). The June 2007 noise study did not evaluate small arms firing, aircraft, or transportation noise because large caliber arms are the predominant noise source and would mask any other sources. According to the contours presented in the June 2007 noise study, the proposed project areas, Sites 1, 2, 3, 5, and 8 at MCB Camp Lejeune, are situated in Noise Zones I and II.

The most recent noise study completed for MCAS New River is a February 2001 Air Installations Compatible Use Zone Study prepared by the Onyx Group to guide compatible land use development by mitigating the effects of aircraft noise and accident potential (Onyx Group, 2001). According to the contours presented in the February 2001 noise study, the entire project area at MCAS New River is situated in Noise Zone I.

There are no sensitive noise receptors located directly in the proposed project areas; however, there are several in the vicinity. As discussed in Section 3.2, Environmental Justice, the new housing units and

schools would be constructed in areas with similar infrastructure; therefore, sensitive noise receptors are present in surrounding areas. The closest sensitive noise receptors are located less than 0.8 km (0.5 mile) from the proposed project areas.

### **3.7 Infrastructure and Utilities**

For the purposes of this EA, infrastructure includes utilities such as electrical distribution, natural gas service, telecommunications, potable water supply, conveyance of wastewater for treatment, solid waste collection, and stormwater management.

#### **3.7.1 Potable Water**

The availability of potable water is of concern from two perspectives: the capacity of the aquifer to supply water and the capacity of the system to treat and distribute 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. In addition, purchased water from the Onslow Water and Sewer Authority supplies remote areas of the Base as well as the Rifle Ranges distribution system.

The Holcomb Boulevard Water Treatment Plant supplies water to the northern-central area of MCB Camp Lejeune, including portions of the proposed project area (i.e., Sites 1, 2, 3, 5, and 8). Approximately 20 wells supplying water to the Holcomb Plant are located in the northeastern quadrant of the installation and range in depth from 30 to 81 m (100 to 265 ft). Untreated water from the wells is treated in the plant and pumped to the Holcomb Boulevard distribution system. The treatment processes include chlorine disinfection and lime softening, followed by filtration and fluoridation. The Holcomb Boulevard Water Treatment Plant serves approximately 17,000 people and 1,500 service connections. The estimated annual demand on the Holcomb Boulevard Water Treatment Plant is approximately 5.7 million liters per day (mld) (1.5 million gallons per day [mgd]) (Whited, 2008).

Water distribution lines exist in the vicinity of the proposed project areas, specifically the lines located to the east of Sites 1, 2, and 3 that supply the Berkeley Manor and Watkins Village housing areas and the lines located to the west of Sites 1, 2, and 3 that supply the Paradise Point housing area. Water mains to which these lines are connected run parallel to Brewster Boulevard (i.e., north of Sites 2 and 3, south of Site 5).

The MCAS New River WTP provides potable water to the Wilson Boulevard Site. The MCAS New River WTP serves approximately 11,500 people and 2,200 service connections. The WTP has a treatment capacity of 13.2 mld (3.5 mgd) and currently treats an average of 3.8 mld (1.0 mgd), which represents less than half its treatment capacity (Whited, 2008).

#### **3.7.2 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), but are currently processing approximately 15 mld (4 mgd),

representing a baseline demand of 26 percent of design capacity (Whited, 2008). MCB Camp Lejeune's National Pollutant Discharge Elimination System (NPDES) permit allows the discharge of up to 56.8 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, EMD, 2006a).

Most of the sewer rights-of-way are located along the sides of MCB Camp Lejeune's roadways. Several sewer lines are present in the vicinity of the proposed project areas.

### **3.7.3 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 serving as an additional provider. Electrical supply and/or capacity issues have been identified for MCB Camp Lejeune (Sides, 2008). Overhead power lines exist in and around the proposed project sites. Land-based telephone service at MCB Camp Lejeune is provided by Sprint and AT&T (Raker, 2004 and Scott, 2004 in DoN, 2005).

### **3.7.4 Solid Waste**

Solid waste that is generated on the Base but 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 segregated at the point of generation and 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, 2007). The rate of solid waste disposal at MCB Camp Lejeune varies, but averages approximately 3,583 metric tons per month (3,950 tons per month) (MCB Camp Lejeune, Public Works Division, 2006).

The Base Landfill is divided into five phases, with each phase expected to provide the capacity for 5 years of waste. Phase I of this landfill was used from 1998 to 2004. Phase II has been in operation since 2004. The permitted capacity of Phase II is 480,905 m<sup>3</sup> (629,000 yd<sup>3</sup>) and covers 4.4 ha (11 ac) in surface area. Phase II is expected to reach capacity in January 2010 (MCB Camp Lejeune, Public Works Division, 2006). The construction of Phase III of the landfill is part of proposed action currently undergoing analysis in a separate EA. Phase III would provide capacity to accommodate another 5 to 6 years of solid waste disposal. The Base Landfill is expected to remain open until approximately 2030 (MCB Camp Lejeune, Environmental Management Division, 2007).

### **3.7.5 Stormwater**

The stormwater infrastructure at MCB Camp Lejeune includes drainage ditches and swales, piping networks, curb and gutter conveyance features, and stormwater retention ponds. Additional stormwater conveyances and related infrastructure would be installed as part of the development of the proposed residential areas and schools.

The NCDENR Division of Water Quality is the NPDES permitting authority for MCB Camp Lejeune. The Base received its NPDES Phase I Stormwater permit in August 2004. The Base developed a Stormwater Pollution Prevention Plan and a Stormwater Outfall Monitoring Plan for NPDES Phase I, which is a comprehensive program to control stormwater discharges associated with industrial activities. The application for a stormwater permit under NPDES Phase II has been submitted; approval is expected sometime in 2009 (Whited, 2008). To comply with the NCDENR NPDES Phase II Program, MCB Camp Lejeune developed a Stormwater Management Plan that serves as a planning tool (DoN, 2003).

### **3.8 Cultural Resources**

Cultural resources are subject to review under both federal and state 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. Base Archaeologists at MCB Camp Lejeune are also responsible for managing cultural resources at MCAS New River. 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 and MCAS New River were 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 EMD, 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 installations boundaries with high probability of archaeologically sensitive soils. Archaeological surveys of all high-probability soils within the project areas were undertaken by TRC Garrow as part of the Fiscal Years 2001, 2002, 2003, and 2005 Silvicultural Prescription surveys (Richardson, 2008). In addition, project-specific archaeological surveys have also been conducted. Surveys conducted within the Site 2 project area include a survey for the construction of an Interim Child Development Center adjacent to Brewster Boulevard conducted by Base Archaeologists in 2006 and for Wastewater Treatment upgrades conducted by Outlaw, et al in 1993 and 1994 (Richardson, 2008). In addition, MCAS New River and MCB Camp Lejeune consulted with the State Historic Preservation Office on Phase II of the PPV, which included a large portion of the Wilson Boulevard Site (formerly Site 1: Douglass Road) (Richardson, 2008). In a

letter dated 2 August 2006, the State Historic Preservation Office concurred with no historic properties affected and no further survey work required (Appendix A). Although the site boundary has changed, there are no additional high probability soils located within the new site boundary.

No historic resources (i.e., buildings, monuments) are located on the proposed project sites. MCB Camp Lejeune assessed two sites (one on Site 5 and one on Site 8) and determined that they were ineligible for inclusion on the National Register of Historic Places. The results of the eligibility assessment have been coordinated with the State Historic Preservation Office. **[Documentation of the coordination with the State Historic Preservation Office will be included in Appendix A as soon as it becomes available.]**

### 3.9 Natural Resources

#### 3.9.1 Topography, Soils, and Geology

##### 3.9.1.1 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 at MCB Camp Lejeune and MCAS New River. MCB Camp Lejeune is characterized by a combination of poorly drained broad, level flatlands and gently rolling better-drained terrain. The elevation of the Phase IV and V Family Housing PPV for Site 1 ranges from 4.3 m to approximately 9.8 m (14 ft to 32 ft) above sea level; Site 2 ranges from 4.3 m to 9.1 m (14 ft to 30 ft) above sea level; Site 3 ranges from 0.6 m to 7.9 m (2 ft to 26 ft) above sea level; Site 5 ranges from 0.6 m to 10.4 m (2 ft to 34 ft) above sea level; Site 8 ranges from 0 m to 8.5 m (0 ft to 28 ft) above sea level; and the Wilson Boulevard Site ranges from 3.0 m to 7.9 m (10 ft to 26 ft) above sea level (MCB Camp Lejeune, 2008b).

The project areas contain numerous soil types, six of which are listed as hydric soils by the National Technical Committee on Hydric Soils, including Leon fine sand, Pantego mucky loam, Rains fine sandy loam, Torhunta fine sandy loam, and Woodington loamy fine sand (Figures 3-5a and 3-5b). Within the project areas, Woodington soils typically occur on broad interstream flats. Non-hydric soils in the project areas include Baymeade fine sand, Baymeade-Urban land complex, Goldsboro-Urban land complex, Kureb fine sand, Marvyn loamy fine sand, Onslow loamy fine sand, and Stallings loamy fine sand (United States Department of Agriculture, 2008). Table 3.9-1 summarizes the engineering properties, as rated with regard to site development, of the soil types occurring on the proposed project sites.

**Table 3.9-1 Residential Development Properties of Soils in the PPV EA Study Area**

Soil Type Map Symbol - Name*	Dwellings Without Basements	Local Roads and Streets	Lawns and Landscaping
BaB -- Baymeade	Slight	Slight	Severe: droughty
Bmb -- Baymeade*	Slight	Slight	Severe: droughty
CrC -- Craven	Moderate: wetness, shrink-swell	Severe: low strength	Slight

<b>Soil Type Map Symbol - Name*</b>	<b>Dwellings Without Basements</b>	<b>Local Roads and Streets</b>	<b>Lawns and Landscaping</b>
GpB – Goldsboro*	Moderate: wetness	Moderate: wetness	Slight
KuB -- Kureb	Slight	Slight	Severe: droughty
Ln -- Leon	Severe: wetness	Severe: wetness	Severe: wetness, droughty
MaC – Marvyn	Moderate: slope	Moderate: slope	Moderate: slope
Mk -- Muckalee	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness
On -- Onslow	Moderate: wetness	Moderate: wetness	Moderate: wetness
Pa -- Pactolus	Moderate: wetness	Moderate: wetness	Moderate: wetness, droughty, too sandy
Pn -- Pantego	Severe: wetness	Severe: wetness	Severe: wetness
Ra -- Rains	Severe: wetness	Severe: wetness	Severe: wetness
St -- Stallings	Moderate: wetness	Moderate: wetness	Moderate: wetness
To -- Torhunta	Severe: wetness	Severe: wetness	Severe: wetness
WaB -- Wando	Slight	Slight	Moderate: droughty
Wo -- Woodington, undrained	Severe: wetness.	Severe: wetness	Severe: wetness

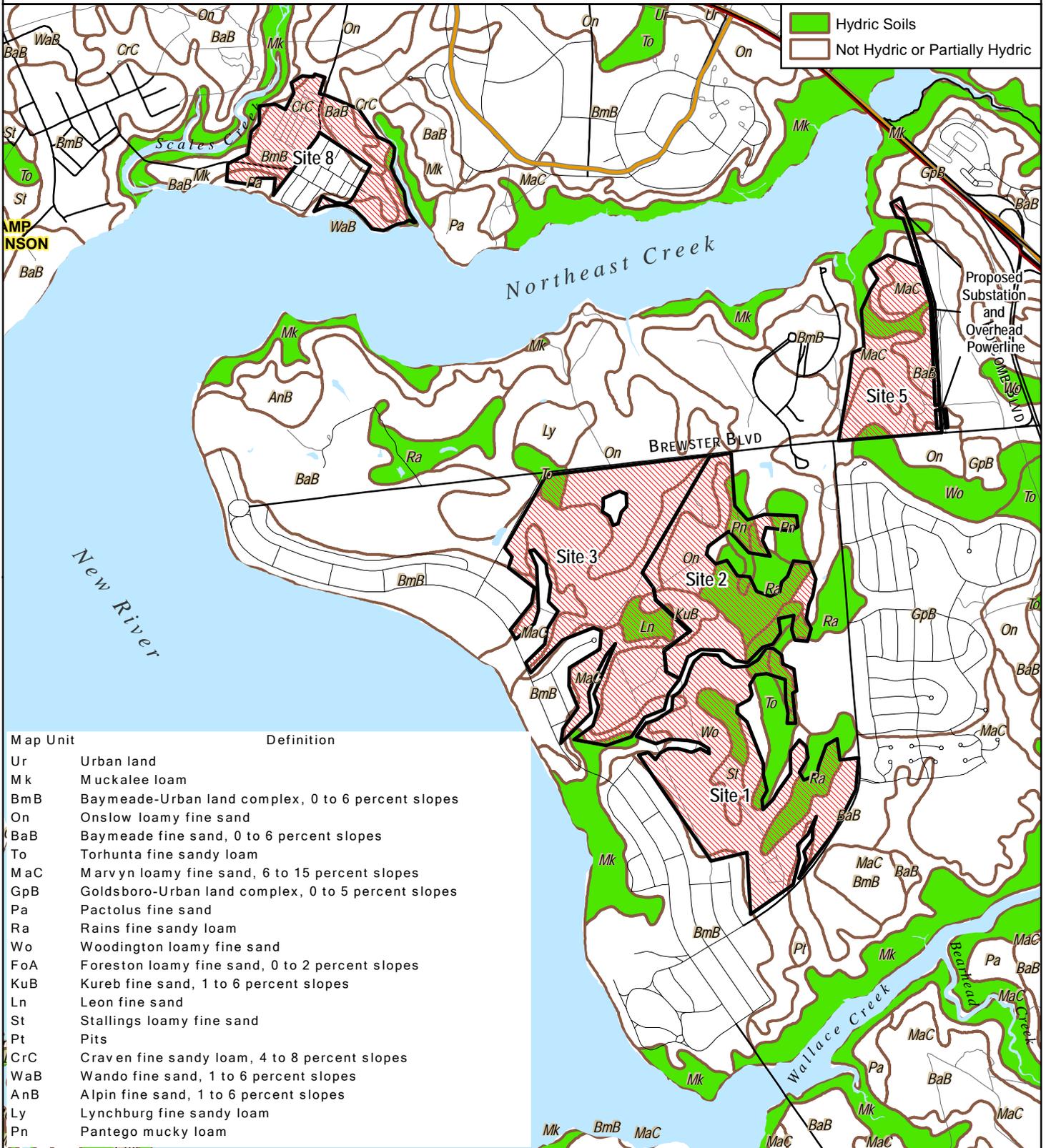
\* Soil types that include Urban Land. These soils require testing to determine engineering properties.

Source: United States Department of Agriculture, 1992.

### 3.9.1.2 Geology

As glacial events and slight crustal movement have changed sea level over the past 66 million years, the land surface at MCB Camp Lejeune and MCAS New River has been alternately exposed and submerged over time by water and marine deposits from an ancient inland sea. These deposits were laid down to form the weakly dissected alluvial plane. The deposits are mostly sands layered with clay and marine shells. Along the coast, stream sediment deposition, and natural shore processes develop and maintain beaches, swamps, and mud flats (MCB Camp Lejeune, 2007b). Elevations range from 0 feet above sea level at the lowest point of Site 8 to 34 feet above sea level at the highest point of Site 5 (MCB Camp Lejeune, 2008b). MCB Camp Lejeune and MCAS New River consist of both broad, level flatlands and gently rolling hills (MCB Camp Lejeune, 2007b).

# Soils at MCB Camp Lejeune Sites



- PPV Housing Project Area
- MCB Lejeune
- Primary Roads
- Streets

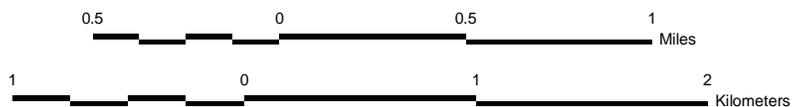
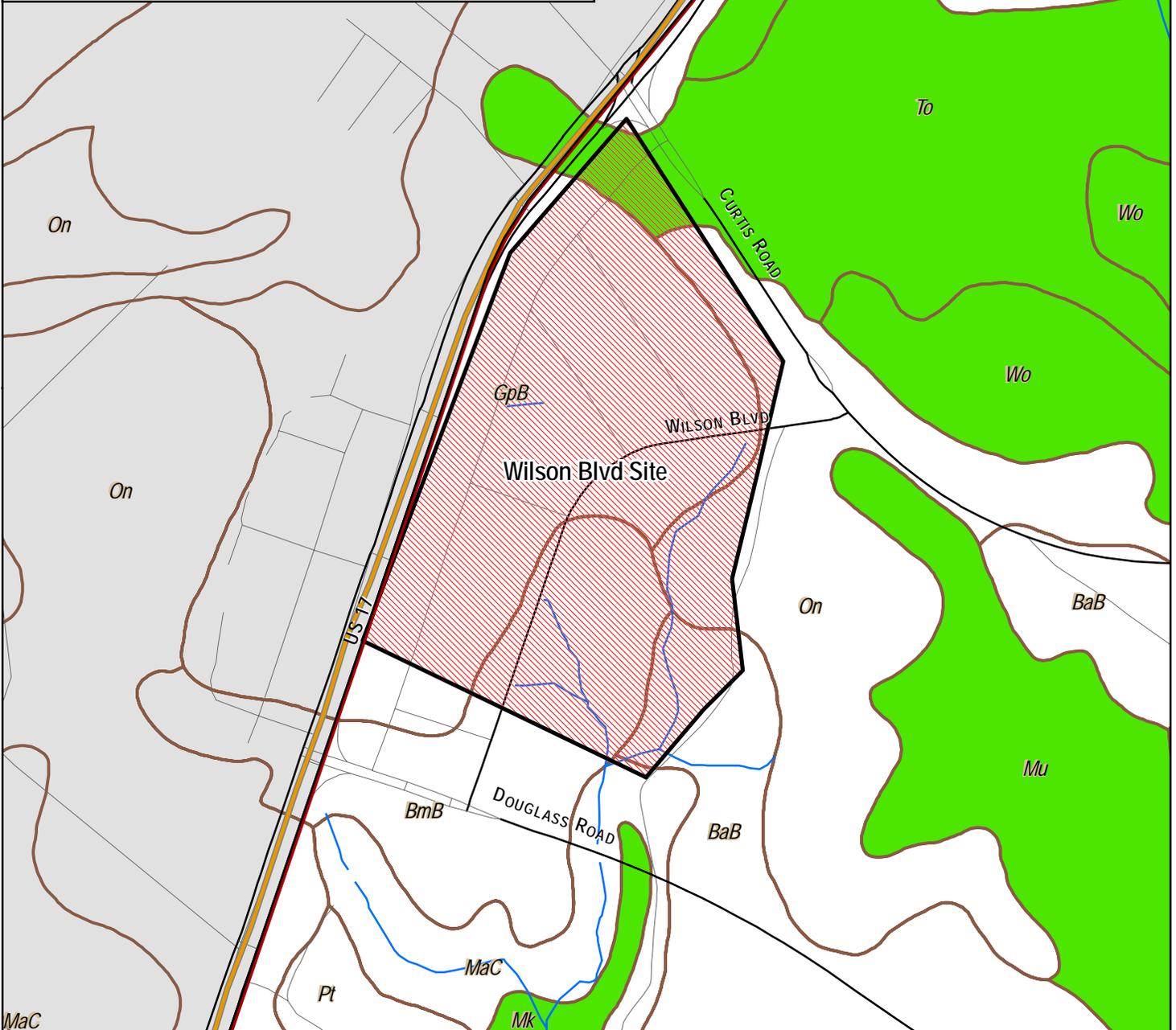


Figure 3-5a

# Soils at the Wilson Boulevard Site

Map Unit	Definition
Mk	Muckalee loam
GpB	Goldsboro-Urban land complex, 0 to 5 percent slopes
Wo	Woodington loamy fine sand
On	Onslow loamy fine sand
St	Stallings loamy fine sand
To	Torhunta fine sandy loam
MaC	Marvyn loamy fine sand, 6 to 15 percent slopes
BmB	Baymeade-Urban land complex, 0 to 6 percent slopes
BaB	Baymeade fine sand, 0 to 6 percent slopes
Pt	Pits
Mu	Murville fine sand

Hydric Soils  
 Not Hydric or Partially Hydric



PPV Housing Project Area  
 MCB Lejeune  
 Primary Roads  
 Streets  
 Existing Streams and Ponds

Figure 3-5b

### **3.9.2 Water Resources**

Water resources are classified broadly as surface or groundwater systems. Whereas surface waters are open to the atmosphere (i.e., rivers, lakes, ponds, and streams), groundwater is a closed system of subsurface water (U.S. Geological Survey, 2004). All water resources are protected by the Clean Water Act of 1972 (CWA). Per Section 404d of the Act, CWA jurisdiction includes navigable waters (including intermittent streams), impoundments, tributary streams, and wetlands.

#### **3.9.2.1 Surface Waters**

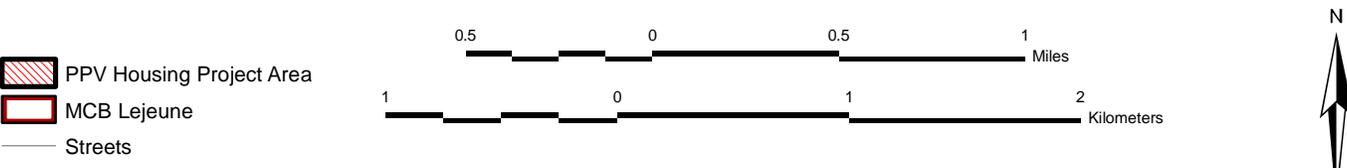
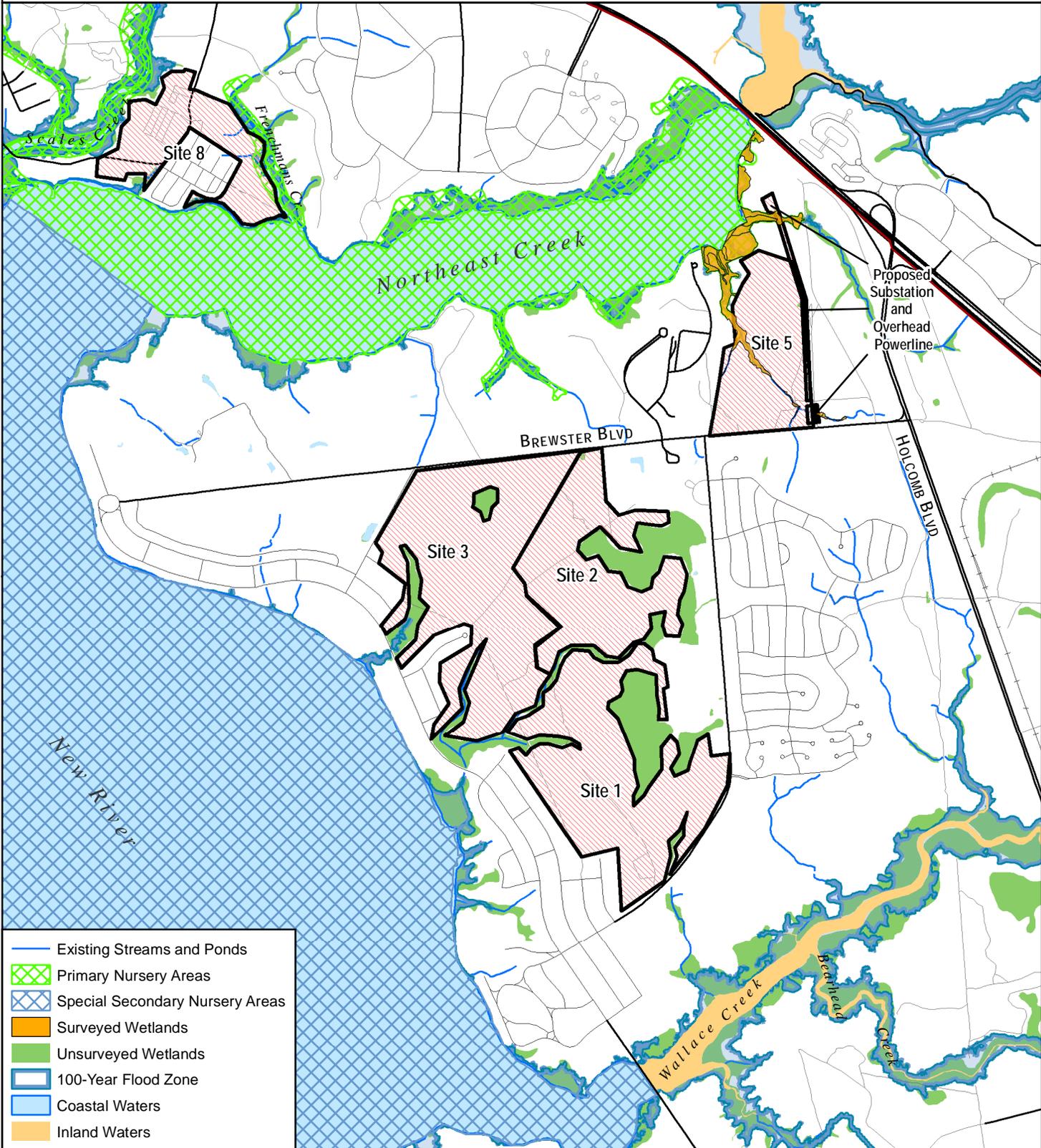
This resource is included in this Environmental Assessment because the proposed action would create additional impervious surfaces, such as schools, roads, and houses in proximity to surface waters and might affect runoff into surface waters. The effects of increased impervious surfaces would be mitigated through the use of best management practices. Additionally the Base would ensure that any unavoidable impacts to water of the US are mitigated. 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 NCAC 02B).

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 Division of Marine Fisheries, 2008). “Special secondary nursery areas” are located adjacent to “secondary nursery areas” but closer to the open waters of sounds and oceans. At the time of year when juvenile species are abundant, these waters are closed to trawling.

Surface water features near the proposed project area include the New River, Northeast Creek, Frenchmans Creek, Scales Creek, Southwest Creek, Wallace Creek, and several unnamed tributaries (Figures 3-6a and 3-6b).

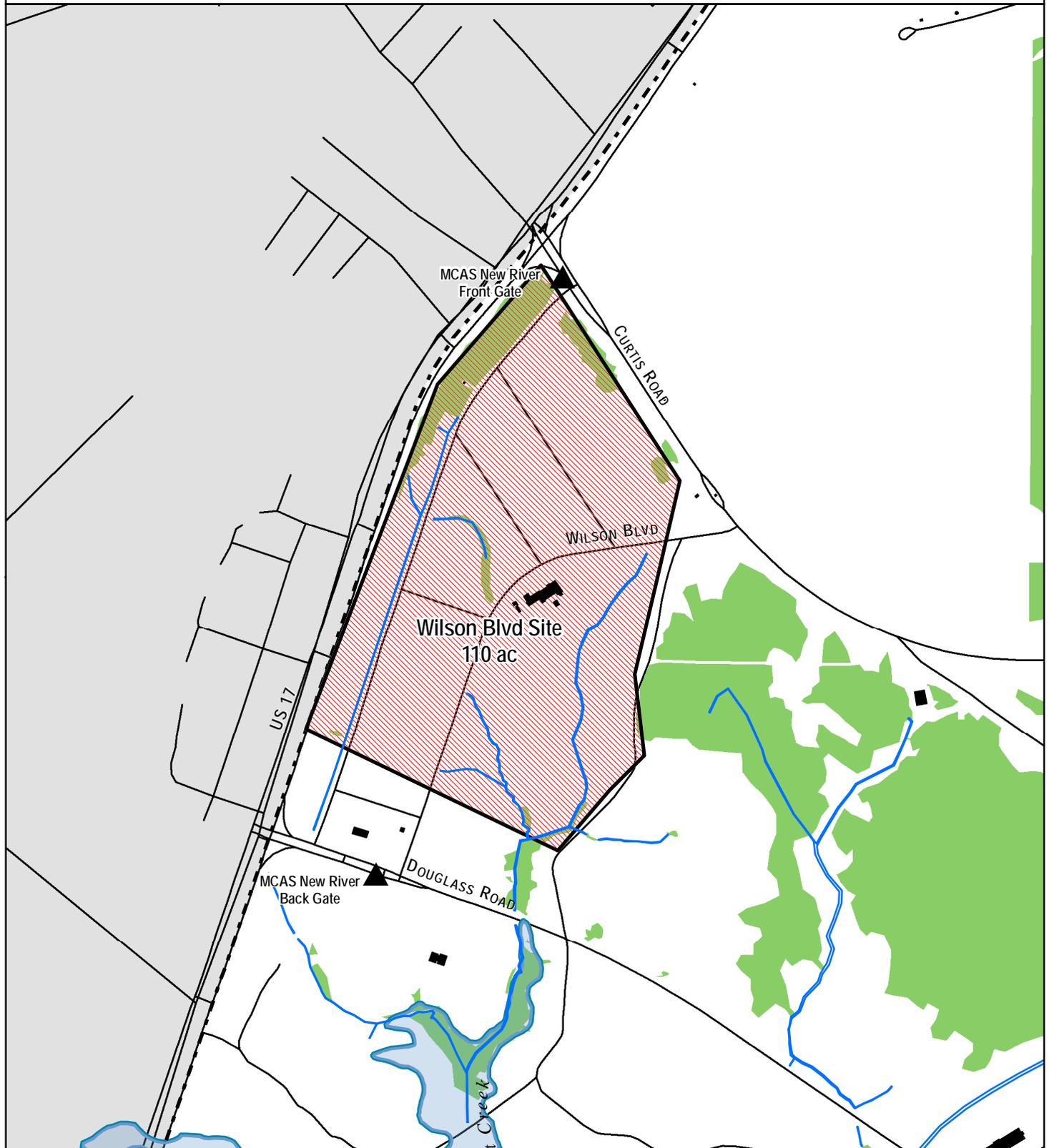
# Wetlands and Water Resources at MCB Camp Lejeune Sites



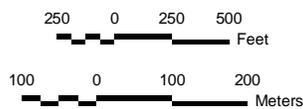
- PPV Housing Project Area
- MCB Lejeune
- Streets

Figure 3-6a

# Wetlands and Water Resources at the Wilson Boulevard Site



-  PPV Housing Project Area
-  Existing Gate
-  Existing Roads
-  MCAS New River Installation Boundary



-  Existing Streams and Ponds
-  100-Year Floodplain
-  Surveyed Wetlands

Figure 3-6b

*New River* – The proposed project area is not located directly adjacent to the New River, but all of the creeks described previously flow into the river. The closest site is Site 3, which is approximately 610 m (2,000 ft) from the New River. All waters draining to the New River north of Grey Point are considered nutrient sensitive waters. New River is classified as SC, tidal salt waters protected for secondary recreation such as fishing, boating and other activities involving minimal skin contact; aquatic life propagation and survival; and wildlife. The New River and most tributary streams of the New River south of the City of Jacksonville have the additional designation of high quality waters (15ANCAC 3N.0002) and primary nursery areas (15A NCAC 3N.0002). The section of the New River nearest to the proposed project area (MCB Camp Lejeune Site 8) is considered a special secondary nursery area (NCDENR, 2008).

*Northeast Creek* – Northeast Creek is located approximately 304 m (1,000 ft) from the northern boundary of Site 5 and approximately 30 m (100 ft) from the southern boundary of Site 8 of the proposed project area. Two unnamed tributaries of Northeast Creek are located within the proposed project area. Northeast Creek is classified as SC, tidal salt waters protected for secondary recreation such as fishing, boating and other activities involving minimal skin contact; aquatic life propagation and survival; and wildlife. This creek also has a classification of high quality waters, and is considered a primary nursery area (NCDENR, 2008).

*Wallace Creek* – Wallace Creek is approximately 915 m (3,000 ft) from the southern boundary of Site 1. Wallace Creek is classified as nutrient sensitive waters, waters needing additional nutrient management due to their being subject to excessive growth of microscopic or macroscopic vegetation. Wallace Creek is classified as SB, surface waters that are used for primary recreation, including frequent or organized swimming and all SC uses (NCDENR, 2008). A portion of the creek located adjacent to Piney Green Road comprises the Wallace Creek Natural Area.

*Scales Creek* – Scales Creek is approximately 304 m (1,000 ft) from the western boundary of Site 8. Scales Creek is classified as SC, tidal salt waters protected for secondary recreation such as fishing, boating and other activities involving minimal skin contact; aquatic life propagation and survival; and wildlife. Scales Creek is classified as nutrient sensitive waters (NCDENR, 2008) and has the additional designation of high quality waters (15A NCAC 3N.0002).

*Southwest Creek* – Southwest Creek has headwaters in the Wilson Boulevard Site. Southwest Creek is classified as C, aquatic life propagation/protection and secondary recreation. Southwest Creek flows directly into the New River. Southwest Creek is classified as nutrient sensitive waters (NCDENR, 2008) and has the additional designation of high quality waters (15 ANCAC 3N.0002).

*Frenchmans Creek* – Frenchmans Creek is adjacent to and comprises the eastern boundary of Site 8. Frenchmans Creek is classified as SC, tidal salt waters protected for secondary recreation such as fishing, boating and other activities involving minimal skin contact; aquatic life propagation and survival; and wildlife. This creek also has a classification of high quality waters, and is considered a primary nursery area (NCDENR, 2008).

*Unnamed Tributaries* – Several unnamed tributaries are present within and adjacent to the proposed action area. None of the tributaries are considered primary nursery areas within the project areas. Information on water quality classification is unknown at this time.

### 3.9.2.2 Groundwater

All of Onslow County, including MCB and MCAS New River, fall 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 in depth from 20 to 265 m (65 to 870 ft) with an average depth of 27 m (90 ft). The thickness of this aquifer ranges from 6 to 290 m (15 to 954 ft) with an average thickness 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 to 1.9 kiloliters per minute (200 to 500 gallons per minute) (NCDENR, 2008).

### 3.9.3 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.

#### 3.9.3.1 Wetlands

This resource is included in this EA because the construction of new roads, housing, and schools could potentially affect wetlands at MCB Camp Lejeune and MCAS New River. The Base is committed to following Executive Order 11990, *Protection of Wetlands*, which 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/Marine Corps construction and operational actions must avoid adverse impacts to, or destruction of, wetlands. If this is impossible, then designs are made to minimize wetland degradation and shall include mitigation to replace impacted wetlands in another location.

The installation conducts activities related to protection of wetlands in accordance with 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 (USACE and USEPA, February 1990). The PPV partner(s) would be required to comply with the relevant state and federal laws.

MCB Camp Lejeune has delineated the wetland boundaries on and in the vicinity of the proposed project sites. There are wetlands on each of these sites (Figures 3-6a and 3-6b).

#### 3.9.3.2 Floodplains

Floodplains are protected by Executive Order 11988, *Floodplain Management*, which instructs federal agencies to consider the risks, danger, and potential impacts of locating projects within floodplains and 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. The Federal Emergency Management Agency defines floodplains as areas subject to a one percent or greater chance of flooding in any given year (formerly referred to as the “100-year floodplain”).

Floodplains and flood hazard zones are generally present throughout MCB Camp Lejeune and MCAS New River, particularly near the New River and its creeks and estuaries. There are no floodplains in the proposed project areas, with the exception of MCB Camp Lejeune Site 8, which contains slightly less than one acre of the Frenchmans Creek floodplain along the eastern site boundary. The remaining project sites do not encroach upon the floodplains (MCB Camp Lejeune, 2008b).

### **3.9.4 Vegetation**

Vegetation is discussed in this EA because the proposed action would require vegetation clearing for construction activities associated with the proposed action. MCB Camp Lejeune encompasses approximately 38,445 ha (95,000 ac) of 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 (MCB Camp Lejeune, 2008a). All forested land is managed under 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. The Base contributes 40 percent of the net proceeds from the sale of timber products to the Onslow County School System in accordance with 10 US Code 2665. However the forest management program does not realize net proceeds every year. Fire also plays a deciding role in the vegetative communities of MCB Camp Lejeune, affecting canopy and understory density and species composition.

On the northern portion of the Base where the proposed project areas are located, the landscape is characterized by pine savannas. The most common of the savannas in this area is 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*).

The Forest Management Program provides for forest protection and reforestation, threatened and endangered species management, and sustainable timber management programs at MCB Camp Lejeune and MCAS New River. The land in the proposed project areas is forested with the exception the Wilson Boulevard Site, which is partially cleared. Table 3.9-2 lists the tree species occurring within the proposed project areas and their respective ages and production values.

**Table 3.9-2 Forest Types for PPV Project Area**

Species Make-up (Dominant Overstory species listed first)	Forest in Project Area	Occurrence	Age of Forest	Production Value (in board feet [bf])
Longleaf Pine	3 ha (7 ac)	Uplands	2 yrs old	0 bf
Loblolly Pine	148 ha (365 ac)	Uplands	50 yrs old or greater	500 bf
Loblolly Pine	68 ha (169 ac)	Uplands	35 yrs old or less	400 bf
Loblolly Pine/Mixed Hardwood	62 ha (152 ac)	Mid-slopes	~72 yrs old	400 bf
Mixed Hardwoods	81 ha (200 ac)	Bottomlands and Drainages	~73 yrs old	300 bf
Mixed Hardwood/Loblolly Pine Mix	40 ha (99 ac)	Mid-slopes	~65 yrs old	300 bf

Source: MCB Camp Lejeune, 2008b

### 3.9.5 Wildlife

A discussion of wildlife is included in this EA because various wildlife species would be expected to occur within the proposed project areas and could therefore be displaced by the proposed construction activities. Wildlife present on or near the proposed site locations for the proposed housing facilities, schools and road improvements would be expected to be similar to the typical wildlife species found throughout other similar forested habitat at MCB Camp Lejeune and MCAS New River.

Wildlife at MCB Camp Lejeune and New River 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 (MCB Camp Lejeune, 2007b).

A multi-species scientific management strategy is used to maintain habitat requirements for several game and non-game species within MCB Camp Lejeune and MCAS New River. The management strategy includes establishment and maintenance of permanent forest openings for wildlife. There are approximately 2 ha (5 ac) total forest openings established within the proposed project areas. Game species include eastern wild turkey (*Meleagris gallopavo*), white-tailed deer, black bear, squirrel, bobwhite quail, eastern cottontail, raccoon, wood duck, 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, 2007d).

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*).

Virtually all birds that occupy MCB Camp Lejeune and MCAS New River throughout the year are protected under the Migratory Bird Treaty Act. The Migratory Bird Treaty Act of 1918 is the primary legislation in the United States established to conserve migratory birds. It prohibits the taking, killing or possessing of migratory birds unless permitted by regulation and was designed to protect migratory birds (including their eggs, nests, and feathers) and their habitats. 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.

The Department of Defense operates under a Memorandum of Understanding with the U.S. Fish and Wildlife Service for Migratory Bird Treaty Act 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.
- 3) Engage in early planning and scoping with the U.S. Fish and Wildlife Service relative to potential impacts of a proposed action, to proactively address migratory bird conservation, and to initiate appropriate actions to avoid or minimize the take 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 B. Chapter 4 of this EA provides assessment of the likelihood of population-level effects on these species.

### **3.9.6 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 and MCAS New River.

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 Marine Fisheries Service and the U.S. Fish and Wildlife Service to determine whether any endangered or threatened species under their jurisdiction may be affected by the proposed action (MCB Camp Lejeune, 2005b). The USMC ensures that consultations are conducted as required with U.S. Fish and Wildlife Service and National Marine Fisheries Service under Section 7 for any action which “may affect” a threatened or endangered species according to guidance provided in the Environmental Compliance and Protection Manual, Marine Corps Order P5090.2A (MCB Camp Lejeune, 2005a). MCB Camp Lejeune and MCAS New River are home to eight federally listed threatened and endangered species.

MCB Camp Lejeune’s threatened and endangered species program focuses on protection, management, and monitoring of federally listed species found at the Base which are listed in Table 3.9-3 (MCB Camp Lejeune, 2007a). Furthermore, there is no designated critical habitat on MCB Camp Lejeune. Of the listed species, only the RCW is known to occur in the vicinity of the proposed project area.

**Table 3.9-3 Federally-listed Species Potentially Occurring at MCB Camp Lejeune and MCAS New River**

Common Name	Scientific Name	Status	Potential to Occur in Project Area
Leatherback sea turtle	<i>Dermochelys coriacea</i>	Endangered	No. Habitat does not exist in the project area. Leatherback sea turtles habitat is comprised of open ocean and beaches.
Loggerhead sea turtle	<i>Caretta caretta</i>	Threatened	No. Habitat does not exist in the project area. Loggerhead sea turtle habitat is comprised of oceanic zones, shallow or coastal waters, and beaches.
Green sea turtle	<i>Chelonia mydas</i>	Threatened	No. Habitat does not exist in the project area. Green sea turtles habitat is comprised of oceanic zones and beaches.
Piping plover	<i>Charadrius melodus</i>	Threatened	No. Habitat does not exist in the project area. Piping plover habitat is comprised of intertidal wash zones with adjacent foraging areas.

Common Name	Scientific Name	Status	Potential to Occur in Project Area
Red-cockaded woodpecker	<i>Picoides borealis</i>	Endangered	No. Habitat does not exist in the project area. Red-cockaded woodpecker habitat is comprised of open pine stands with trees that are at least 60 years old.
Seabeach amaranth	<i>Amaranthus pumila</i>	Threatened	No. Habitat does not exist in the project area. Seabeach amaranth habitat is comprised of beaches on barrier islands.
Rough-leaved loosestrife	<i>Lysimachia asperulaefolia</i>	Endangered	No. Habitat does not exist in the project area.
American alligator <sup>1</sup>	<i>Alligator mississippiensis</i>	Threatened	Yes

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

Source: MCB Camp Lejeune, 2007d

Currently 84 active RCW clusters are known to exist at MCB Camp Lejeune. The 2006 RCW Camp Lejeune Recovery Plan was developed to manage and direct continuing RCW growth on the Base. MCB Camp Lejeune would maintain an established recovery goal of 173 RCW clusters. There are no active RCW cluster sites located on or in the vicinity of the proposed project sites. The closest RCW cluster is cluster number 19, which is located approximately 3.5 kilometers (2.2 miles) east of MCB Camp Lejeune Site 1. Additionally, MCB Camp Lejeune's recovery goal for the RCW does not include any of the areas included in the proposed project limits. In the recovery plan, the U.S. Fish and Wildlife Service defines good quality foraging habitat for RCWs. Good quality foraging habitat is characterized by some large old pines, low densities of small and medium pines, sparse or no hardwood midstory, and bunchgrass for groundcover. The amount of habitat necessary to support a single RCW cluster varies with habitat quality and site productivity. In areas of medium to high productivity, including MCB Camp Lejeune, 49 ha (120 ac) of good quality habitat is sufficient to support a cluster (Figure 3-7). Clearing of foraging habitat within 0.8 km (0.5 mi) of RCW clusters would require consultation with the U.S. Fish and Wildlife Service (TenBrink, 2007).

Rough-leaved loosestrife is present in specific habitat types on approximately 9 ha (22 ac) at MCB Camp Lejeune. This plant is managed through the application of prescribed fire and is protected with designated buffer zones. American alligators can be found in rivers, swamps, or estuaries at MCB Camp Lejeune.

Although this species is federally listed as threatened due to its similarity of appearance to the endangered American crocodile, the American alligator (*Alligator mississippiensis*) is considered recovered (MCB Camp Lejeune, 2007d).

#### Natural Heritage Areas

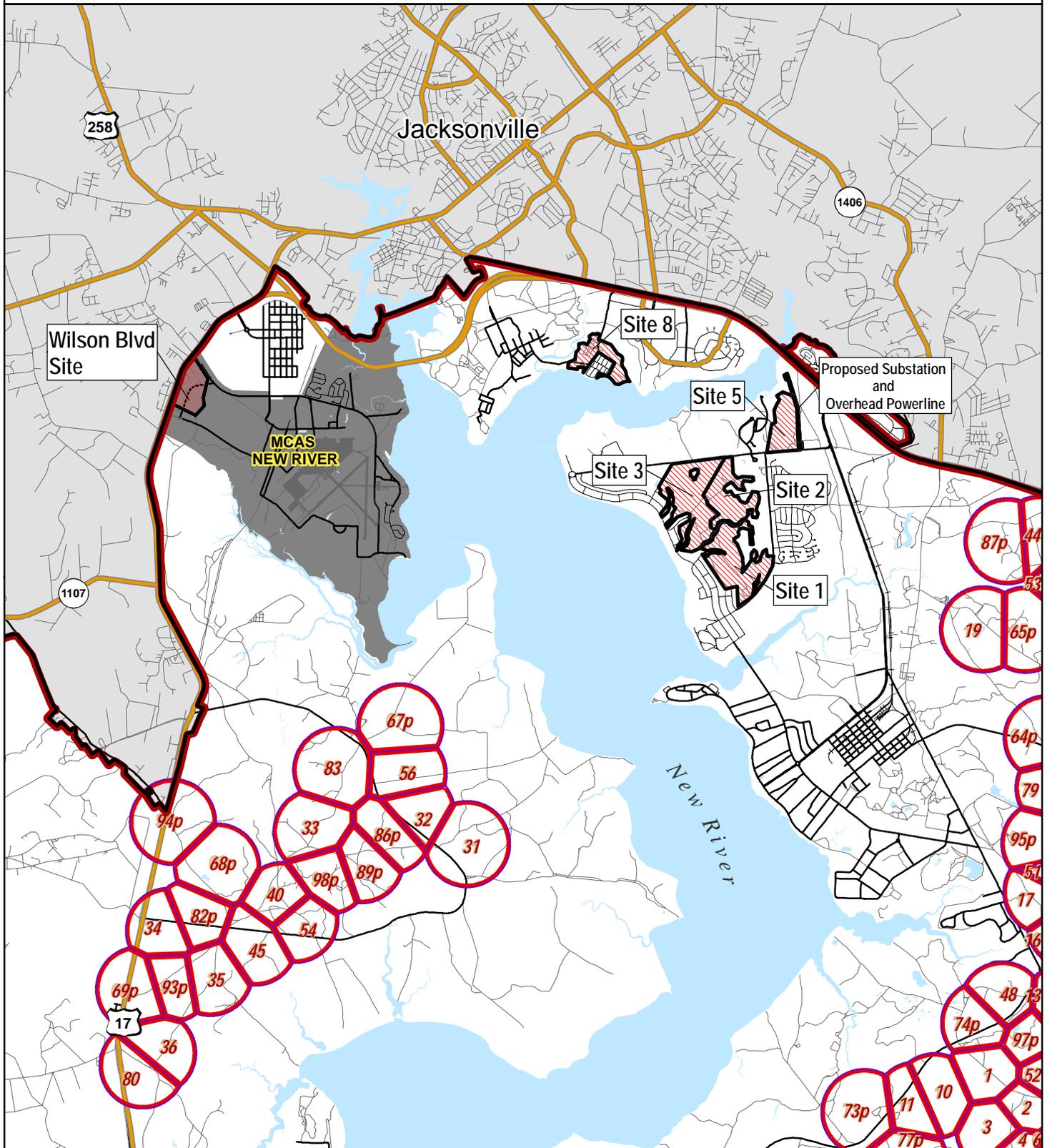
In 1985, MCB Camp Lejeune entered into a memorandum of understanding with the North Carolina Natural Heritage Program to designate and manage two highly significant natural areas occurring on Base. These natural areas are registered as part of the list of natural heritage areas for which voluntary agreement has been made between the owner of the area and the North Carolina Natural Heritage Program for the purposes of protecting and managing the natural area for its specified natural values (MCB Camp Lejeune, 2007d).

One of the natural heritage areas at MCB Camp Lejeune is the C.F Russell Longleaf Pine Natural Area, which represents one of the few old-growth, natural regenerating longleaf pine forests remaining on the Coastal Plain region. The second natural heritage area, the Wallace Creek Natural Area, is comprised of an old-growth bald cypress stand and survives as a remnant of the historic millpond that was impounded on Wallace Creek by the Montford Dam, which was destroyed by Hurricane Hazel in 1954 (MCB Camp Lejeune, 2007d). MCAS New River also contains a Natural Heritage Site, the New River Swamps and Marshes, which contain a very rare and recently discovered natural community type that is only known from the New River and White Oak River systems. This is currently known as a “tidal pine-maple-ash forest.” The American alligator is known to inhabit this area. (North Carolina Natural Heritage Trust Fund, 1999).

These areas are subject to a Memorandum of Understanding, which states that the Marine Corps will “refrain from making or permitting changes that substantially and negatively affect the exceptional natural resources for which the designated natural areas are registered” (USMC, 1995). No natural heritage areas are located in or adjacent to the project sites. The closest natural heritage area is the Wallace Creek Natural Area, located approximately 2,850 m (9,360 ft) from MCB Camp Lejeune Site 1.

A complete list of Natural Heritage Areas is included in the Natural Area Inventory of Onslow County maintained by the North Carolina Department of Environment and Natural Resources (NCDENR, 2008).

# RCW Foraging Areas at MCB Camp Lejeune and MCAS New River



- RCW Forage Areas
- PPV Housing Project Area
- Primary Roads
- Streets
- MCB Lejeune
- MCAS New River

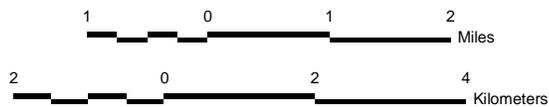


Figure 3-7

### **3.10 Hazardous Materials and Hazardous Wastes**

This EA analyzes impacts related to hazardous materials and hazardous waste based on the potential for hazardous materials to be introduced to the installations during the course of construction activities, for hazardous wastes to be generated as a result of construction activities, and for encounter with contaminated media during the course of site preparation and construction activities. For the purposes of this EA, hazardous materials include chemical products (e.g., pesticides, paints, solvents), petroleum-derived fuels (e.g., heating oil, gasoline, diesel fuel, propane, kerosene) and lubricants (e.g., engine oil), and toxic substances (e.g., PCBs, lead-based paint, asbestos). For the purposes of this EA, hazardous wastes include solid wastes that are regulated as hazardous based on either direct listing by USEPA or characteristics (ignitability, reactivity, corrosivity, toxicity), as well as those contaminants present in environmental media (soil, groundwater). Review of relevant environmental data indicates that no hazardous materials or hazardous wastes are currently stored at the six proposed project sites.

#### **3.10.1 Contaminated Sites**

Due to the number of contaminated sites aboard MCB Camp Lejeune, the Base has been listed as a National Priority List Site or Superfund Site under the Comprehensive Environmental Response, Compensation and Liability Act. The MCB Camp Lejeune Environmental Management Division oversees the Installation Restoration Program (IRP) to address suspected or known contamination at both MCB Camp Lejeune and MCAS New River. Areas investigated, remediated, and managed under this program are referred to as IR Sites.

MCB Camp Lejeune has been actively involved with environmental investigations and remediation programs since 1983, beginning with the Navy Assessment and Control of Installation Pollutants Program. An Initial Assessment Study was the first investigation of potentially hazardous sites conducted under this program. The Initial Assessment Study conducted in 1983 identified areas of concern that might potentially cause threats to human health and the environment as a result of past storage, handling, and disposal of hazardous materials. Based on a review of historical records, field inspections and personal interviews, 76 areas of concern were identified. The Initial Assessment Study concluded that while none of the sites posed an immediate threat to human health or the environment, further investigations to assess the potential long term impacts were warranted at 23 of the 76 sites. Since that time, additional site investigations have identified 19 new sites that have been included in the IRP bringing the total to 42 sites. One IR Site is located within the boundaries of MCB Camp Lejeune Site 3 (Figure 3-8a).

##### IR Site 13

IR Site 13, referred to as the Golf Course Construction Dump, is approximately 10 acres in size and is located in the northwest corner of Site 3 at the intersection of Brewster Boulevard and Charles Street (Figure 3-8a). The site was used for the disposal of asphalt, branches, clippings and other miscellaneous debris. It is not known exactly when disposal activities were conducted, but the site was closed in 1944 (DoN, 2006b). The Preliminary Assessment, completed in April 2008, affirmed that hazardous wastes

were not disposed of at IR Site 13. No Further Action was applied to the site in 1983 and was substantiated based on the results of the Preliminary Assessment, which included collection and analysis of subsurface soil and groundwater samples (Osage of Virginia, Inc., 2008). MCB Camp Lejeune has determined this site to be suitable for residential development (Lowder, 2008).

Two IR Sites are located in proximity to the MCAS New River Wilson Boulevard Site (Figure 3-8b).

#### IR Site 40

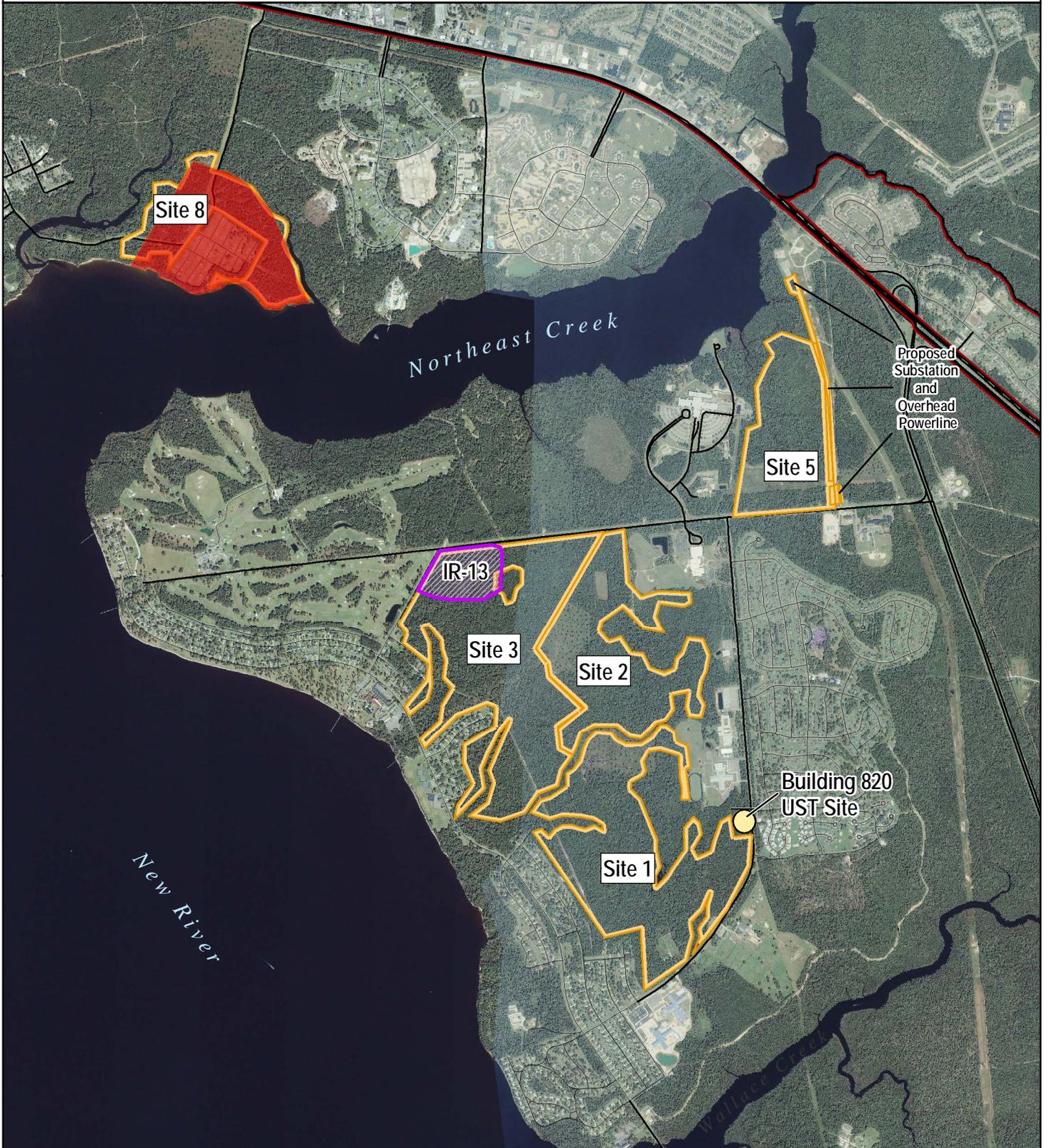
IR Site 40 is located to the east of the Wilson Boulevard Site. In 1983, a Preliminary Assessment performed by MCB Camp Lejeune referred to IR Site 40 as the Camp Geiger Area Borrow Pit. The site was used for waste disposal in 1969. It is not known exactly how long disposal activities continued at IR Site 40 after 1969. The Preliminary Assessment affirmed that auto parts and metal were disposed of at IR Site 40 and no hazardous wastes were involved. The site was assigned No Further Action status as a result of the Preliminary Assessment (DoN, 2006b). However, the No Further Action status does not provide clearance of this area for residential uses.

#### IR Site 41

A Remedial Investigation/Feasibility Study (RI/FS) was initiated in December 1993 and completed in May 1995. Results of the RI indicate that the site contains significant amounts of buried construction debris. Analytical results indicate that surface soil in the central portion of the study area was contaminated with Polycyclic Aromatic Hydrocarbon (PAH) compounds, most likely the result of previous burning activities. Results of the human health risk assessment indicate that the current use of the site did not present unacceptable risks to human health since the site and the groundwater are currently not used for residential purposes. The ecological risk assessment concluded that potential adverse impacts to ecological receptors were low due to the low levels of contamination in soil, sediment, and surface water. However, since IR Site 41 is suspected of containing UXO and CWM, both a safety and human health risk exist.

To ensure the safety of personnel within the proposed Base housing area, MCB Camp Lejeune followed the NCDENR guidelines as written in 15A NCAC 13A.0109(r) and the DoD 6055.9-STD, "Ammunition and Explosive Safety Standards," to ensure compliance with all known guidance regulating the hazardous and explosive materials known to be found at IR Site 41. The Base housing proposal is currently located a minimum of 0.4 km (0.25 mi) from IR Site 41 as recommended in 15A NCAC 13A.0109(r) and a minimum of 381 m (1,250 ft) from IR Site 41 as a recommended minimum fragmentation distance described in the DoD 6055.9-STD.

# Underground Storage Tank Monitoring and Installation Restoration Sites at MCB Camp Lejeune Sites



-  MCB Camp Lejeune
-  PPV Housing Project Area
-  CTO-191: Grenade Range (Area A)
-  Initial Assessment Installation Restoration Site

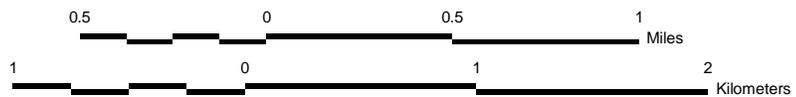
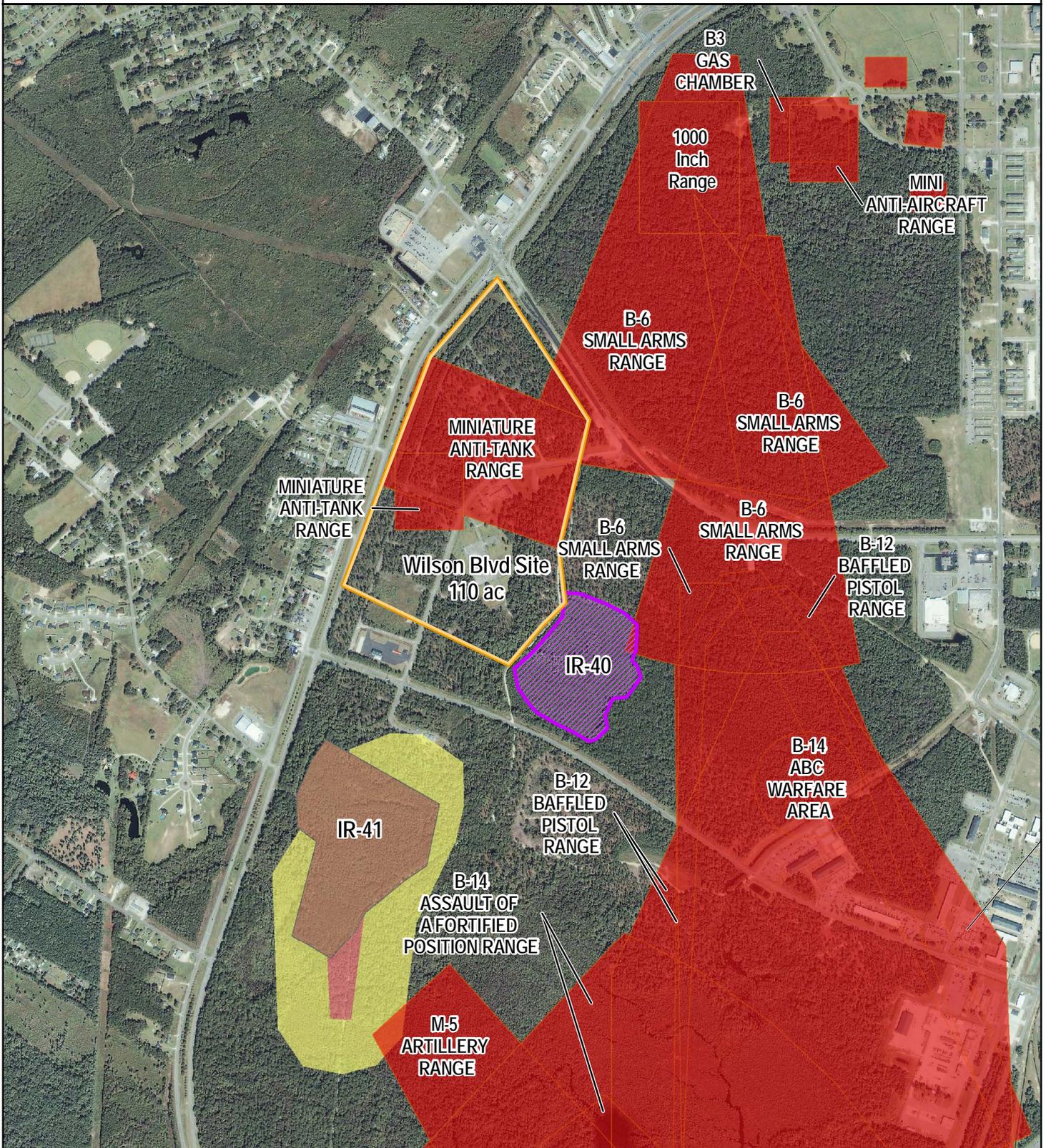


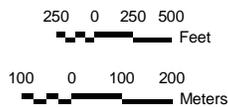
Figure 3-8a

Note: 2006 Aerial Photography

# Historic Ranges and Installation Restoration Sites at the Wilson Boulevard Site



- CERCLA Intrusive Soil Boundary
- CERCLA Land Use Control for Aquifer Use
- CERCLA Land Use Control for Groundwater
- Initial Assessment Installation Restoration Site



- PPV Housing Project Area
- Historic Range Area
- MCAS New River Boundary



Figure 3-8b

Note: 2006 Aerial Photography

A final Record of Decision (ROD) was signed in June 1995 documenting the selected remedy for IR Site 41. It included long-term groundwater, surface water, and sediment monitoring and deed restrictions prohibiting development of the site. Institutional controls restricting groundwater and soil use were put in place at the site. None of the institutional control boundaries fall within the area of the Wilson Boulevard Site; these boundaries are located to the southwest of the site. Groundwater, surface water, and sediment monitoring continues on a semiannual basis and is reviewed every five years to determine whether the chosen remedy continues to be protective of human health and the environment.

Fencing was installed along the entire perimeter of the former dump site boundary (land use controlled area restricting soil intrusive activities), limiting access to IR Site 41 (Lowder, 2008).

One former Underground Storage Tank Site, identified as the Building 820 site (Figure 3-8a) is located to the east, outside the site boundary of MCB Camp Lejeune Site 1.

#### Building 820 Underground Storage Tank Site

Building 820, located in the Berkeley Manor residential area, is an active Marine Corps Exchange gas station. Several environmental investigations were carried out in the vicinity of Building 820 in the early 1990s. Monitoring wells were installed to investigate the presence of petroleum, including free product and dissolved contaminants, in the shallow groundwater and to investigate conditions deeper in the underlying aquifer. Plumes of dissolved petroleum constituents (benzene, toluene, ethylbenzene, and xylene) that appeared to originate from the vicinity of the underground storage tanks were identified in shallow and deep groundwater zones. The Corrective Action Plans developed and implemented for the site included installation of free product recovery system that recovered free product from 1994 to 1997, as well as continuing groundwater sampling and analysis. As of May 2007, the groundwater sampling and analysis results continued to demonstrate a decreasing trend in contaminant concentrations over time (DoN, 2007b).

#### Historical Ranges

The extent of one historical range, identified as CTO-191: Knox Trailer Park Grenade Range (Area A), encompasses nearly all of MCB Camp Lejeune Site 8 (Figure 3-8a). In 2007 surface soil, subsurface soil, groundwater, surface water and sediment samples were collected from the site and analyzed for contaminants of potential concern associated with past use of the range, including volatile organic compounds, semi-volatile organic compounds, pesticides, polychlorinated biphenyls, explosives, and inorganics. The results indicated that a few of the constituents exceeded the USEPA Region IV preliminary remediation goals and on-base background concentrations. Human health and ecological risk assessments were performed on the contaminants of potential concern to ensure the protection of human health and the environment. Based on the human health risk evaluations for surface soil, subsurface soil, groundwater, surface water and sediment, it was determined that no risks for current or future human health exposure exist at the Site. Based on the ecological risk evaluations for aquatic receptors, no unacceptable risks due to the contaminants of potential concern exist. In addition, no unacceptable risks were found in food web exposures. MCB Camp Lejeune determined Site 8 to be suitable for residential

development based on the results of these activities, which were conducted under the Phase II Environmental Sampling and Human Health Risk Screening as documented in a January 2008 Technical Memorandum (CH2MHILL, 2008).

Several historical ranges (inactive ranges, closed ranges, and ranges proposed for closure) exist on and in the vicinity of the Wilson Boulevard Site at MCAS New River. Two closed Miniature Anti-tank Ranges are located in the northern portion of the site, and the southern arc boundary of a Small Arms Range overlaps the northeastern portion of the site (Figure 3-8b). MCB Camp Lejeune is currently conducting an assessment of the Small Arms Range.

### **3.10.2 Lead-based Paint**

No structures are located on any of the project sites, and based upon information provided by MCB Camp Lejeune Environmental Management Division personnel, no lead-based paint is known or suspected to be present on any of the project sites.

### **3.10.3 Asbestos**

No structures are located on any of the project sites, and based upon information provided by MCB Camp Lejeune Environmental Management Division personnel, no asbestos or asbestos-containing materials are known or suspected to be present on any of the project sites.

### **3.10.4 Storage Tanks**

Based upon information provided by MCB Camp Lejeune Environmental Management Division personnel, no aboveground or underground storage tanks are located at the project sites.

### **3.10.5 Pesticides**

Based upon information provided by MCB Camp Lejeune Environmental Management Division personnel, no pesticides are stored at any of the project sites and no pesticides are currently being applied to any of the project sites.

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## **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 and the No Action Alternative. The proposed action consists of the construction of military family housing units, two DoDEA Schools, and associated infrastructure (i.e., roads, utilities) and facilities.

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

#### **4.1.1 Land Use**

Impacts to land use would be considered adverse if one or more of the following occurs: the action is incompatible with surrounding land use; or the action changes land use in such a way that mission essential training is degraded; or the action is inconsistent or in conflict with the environmental goals, objectives, or guidelines of a community or county comprehensive plan for the affected area.

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

Construction projects associated with Phase IV and V of the PPV initiative would necessitate clearance of approximately 185 ha (457 ac). The final site layout has not yet been determined; however, it is anticipated that the total area of disturbance resulting from the proposed construction activities would be smaller than the total project area being considered. Proposed construction activities would result in a change to some of the project areas from mixed pine and hardwood forest to developed areas. However, not all of the area would be cleared, as some tree stands may be incorporated into the overall site design.

As described in Section 3.1.1, Land Use, the proposed project areas are currently designated as several different land uses, however the facilities would be co-located with areas of similar infrastructure. A small portion of the Wilson Boulevard Site at MCB Camp Lejeune is currently designated as Operational and Training Facilities. The Base would coordinate internally with the Training and Operations Division to ensure that the proposed construction activities would not interfere with ongoing training and operations.

MCB Camp Lejeune and MCAS New River manage approximately 38,445 ha (95,000 ac) of managed forested land, most of which is used for military training (MCB Camp Lejeune, 2007b). Of the approximately 415 ha (1,025 ac) being considered for the construction of new housing areas and schools under the proposed action, it is estimated that the total land area required for implementation of the proposed action at MCB Camp Lejeune would be approximately 182 ha (450 ac). It is estimated that MCAS New River would require approximately 118 ha (45 ac) for the proposed housing (MCB Camp Lejeune, 2008b). Assuming the maximum number of acres were cleared for proposed construction activities, the disturbance of approximately 200 ha (495 ac) of forest under the proposed action would represent less than 0.5 percent of the remaining forested area at MCB Camp Lejeune. For a more detailed analysis of the types of forest vegetation that would be removed as a result of implementing the proposed action, refer to Section 4.9.4.1, Vegetation.

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

Implementation of the proposed action would not change the overall land use at the installation and the proposed action would generally be compatible with existing and surrounding land use designations. Only a small percentage of forested land would be lost. The proposed action would be consistent with the county's comprehensive plan. Therefore, there would be no impacts to land use as a result of implementing the proposed action.

#### 4.1.1.2 No Action Alternative

Implementation of the No Action Alternative would maintain the status quo at MCB Camp Lejeune and MCAS New River, and land use patterns would not change.

### 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 within the coastal zone.

As detailed in the CCD (Appendix C), there are eleven general policy guidelines issued by North Carolina for the coastal area. Of these eleven, two policies are applicable to the proposed action. Consistency with these two applicable policies is summarized in the following paragraphs.

- **Mitigation Policy (15A NAC 7M.0700)** – Implementing the proposed action along with mitigation measures to minimize potential environmental impacts would be consistent with North Carolina's policy that requires mitigation for adverse impacts to coastal lands. Impacts to natural resource areas would be mitigated for as outlined in Section 4.11.4 of this EA.
- **Coastal Water Quality Policies (15A NCAC 7M.0800)** – Stormwater runoff would be managed and controlled in accordance with MCB Camp Lejeune's 2002 Stormwater Pollution Prevention Plan and the Stormwater Management NPDES Phase II requirements. As a result, the proposed action is not expected to impair coastal water quality.

In addition to the eleven general policy guidelines, there are also four categories of areas of environmental concern (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 areas of environmental concern and consistency with those policies when applicable.

- **Estuarine and Ocean Systems (15A NCAC 07H.0200)** - The proposed project areas are not located directly within any estuarine or ocean systems. However, a portion of the project area (the proposed siting areas of the new housing facilities, schools and road expansions) are adjacent to Northeast Creek estuarine habitat, which is considered a primary nursery area. Stormwater management plans, including the use of best management practices during construction and demolition, would control surface water runoff into the adjacent waterways. Therefore, the proposed action is not expected to cause any runoff that would adversely impact estuarine waters. The proposed project areas do not include any estuarine 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 project area for the proposed action is not within an ocean hazard area. 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 area. There are several drinking water wells in and around the project area. Along Brewster Boulevard there are four drinking water wells, two of which are just inside Site 5, the other two are just outside of Site 3. In addition, there is a drinking water well just outside of the northeast corner of Site 5 and a well just inside of the western boundary of Site 3, along Charles Street (MCB Camp Lejeune, 2008b). The proposed construction activities associated with the proposed action would not affect groundwater. Therefore, the proposed action would be consistent with policies designed to protect groundwater and public water supplies.
- **Natural and Cultural Resource Areas (15A NCAC 7H.0500)** – Project areas contain and/or border on waters that flow into Northeast Creek and New River. Stormwater management plans, including the use of best management practices during construction, would control surface water runoff into the waters. The appropriate permits would be acquired and mitigation measures implemented if necessary. No coastal areas that sustain threatened and endangered species would be impacted. No unique geological formations are located within the proposed project area.

With regard to cultural resources, there are no archaeological sites in the project areas. MCB Camp Lejeune has conducted Phase II National Register of Historic Places eligibility assessment of two archaeological sites within the project areas and determined the sites to be ineligible. If during site preparation (e.g., grading) or construction any cultural resources were discovered, the Director of Environmental Management would be notified. The Director of Environmental Management would order actions in the vicinity halted and the area marked and would immediately notify the Base Archaeologist.

As the proposed action would not impact fragile coastal natural or cultural resources, the proposed action would be consistent with policies designed to protect natural and cultural resource AECs.

The USMC, through the CCD process, has determined that implementing the proposed action would be fully consistent with the applicable policies of the North Carolina Coastal Management Act, (see Appendix C), therefore the proposed actions would not have an adverse impact of the coastal zone management plan.

#### 4.1.2.2 No Action Alternative

Implementation of the No Action Alternative would maintain the status quo at MCB Camp Lejeune and MCAS New River, and coastal zone management considerations would not be affected. Other new projects at MCB Camp Lejeune and MCAS New River would continue to be carefully planned to avoid stress on the coastal zone.

## **4.2 Socioeconomics**

### **4.2.1 Proposed Action**

Some very minor population shift would be expected as military families located in the private sector relocate to family housing on Base. While it cannot be predicted exactly where these families would relocate from, it is anticipated that they would be relocating from within the region (i.e., adjacent counties). As these families move from private sector housing to on-base family housing, it is possible that people could move into these vacant residences from outside the respective jurisdiction. No changes to racial composition in adjacent jurisdictions are anticipated from the proposed action.

The project action would result in a net increase of 850 single family homes. This increase in additional housing units would decrease the overall military family housing deficit to 2,453 units. As these housing units become available for occupancy a short-term increase in vacancy rates within some municipalities could occur as military families relocate from private sector housing to on-base housing. The proposed action would take place over a number of years. As a result, it is anticipated that the private housing market would not be impacted from this increase in vacant housing units. Implementation of the proposed action would have a short-term positive effect on the local economy. The extent to which the economy benefits from construction activities would be dependent upon the amount of project planning, design, materials purchasing, and construction activities contracted with local businesses.

As evaluated in accordance with Executive Orders 12898, the 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, MCAS New River, or in Onslow County. As described in Section 3.2, a small percentage of minority and low-income populations exist within in the ROI as compared to the state. Because the proposed action would take place entirely within the boundaries of MCB Camp Lejeune and MCAS New River and there would be no significant change to the demographics outside the installation, implementation of the proposed action would not adversely impact minorities and low income populations. In addition, it is assumed that the residents of the proposed housing would come from throughout the ROI and not come exclusively from any single community or area.

As evaluated in accordance with Executive Orders 13045, the direct and indirect effects of the proposed action would not cause disproportionately adverse impacts to children who are dependents of military personnel are authorized to access MCB Camp Lejeune and MCAS New River. Although children are not likely to be present within the proposed project areas, several facilities that support children are located nearby, including a community center and riding club and several youth centers, schools and housing areas. During construction there could be increased risks to the safety of children, due to the proximity of facilities where children are present. However, the construction activities would be short-term in duration and increased risks would be mitigated through the use of standard construction site safety precautions (e.g., fencing and patrolling). Construction-related noise would be introduced to the environment, but could be mitigated through the use of equipment sound mufflers and restricted hours of construction. Generation of fugitive dusts associated with construction would be minimized through best management practices such as watering of exposed soils, soil stockpiling, and soil stabilization.

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

Implementation of the No Action Alternative would maintain the status quo at MCB Camp Lejeune and MCAS New River. No changes would occur that would result in socioeconomic impacts, including impacts to minority populations, low-income populations, or children. If this alternative were to be implemented, the proposed construction projects would not occur, and a deficit in suitable housing would still exist.

### **4.3 Community Facilities and Services**

Impacts to community facilities and services would be considered adverse if an increase in demand negatively affects the ability of the service providers to meet the additional demands or the increase in demand negatively impact the existing level of service.

#### **4.3.1 Proposed Action**

Under the proposed action, the demands on the providers of law enforcement and fire/emergency services at the two installations would increase. Existing law enforcement and fire/emergency services are estimated by MCB Camp Lejeune to be adequate to meet the current demands of the installations. The installations maintain fire/emergency services mutual aid agreements with the local community that would be modified as needed. In addition, the size of the MCB Camp Lejeune and MCAS New River law enforcement and emergency service departments would be expected to grow as needed to accommodate any increase in demand for services resulting from the proposed action. Details concerning the provision of law enforcement and fire/emergency services would be determined through negotiations between the PPV entity and the Marine Corps.

The establishment of two new DoDEA Schools as proposed at MCB Camp Lejeune would potentially reduce the student body of off-base public schools, as military-related students currently comprise approximately one third of the student body. The off-base elementary public schools are 13 percent beyond capacity, the high schools are 5 percent beyond capacity, and the middle schools are at 98 percent

capacity as of the 2005-2006 school year. The proposed action would reduce the number of students in Onslow County public schools, thereby helping to alleviate overcrowding. Additionally, the CLDS could realize a benefit from the new DoDEA Schools constructed under the proposed action through a decrease in the teacher-to-student ratio in certain classes. Lastly the additional schools would provide needed infrastructure for any potential future population increase at Camp Lejeune or New River. Moving military students from Onslow County public schools to CLDS would result in a decrease of impact aid paid to the non-DoD schools proportional to the reduction of students attending non-DoD schools. Given these conditions, there would be no adverse impacts to the CLDS or Non-DoD education resources from implementation of the Proposed Action.

The proposed action could require one or more road crossings along the Greenway Trail. Implementation of the proposed action could result in the loss or re-routing of the equestrian trail. However, the Greenway Trail, as well as numerous other recreation facilities that exist at the Base, would remain intact and would be available to existing and future residents. The proposed action would reduce the land area available for hunting.

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

Implementation of the No Action Alternative would maintain the status quo at MCB Camp Lejeune and MCAS New River with regard to existing demands on community facilities and services.

### **4.4 Transportation and Traffic**

#### **4.4.1 Proposed Action**

The proposed action would result in short-term impacts to installation traffic due to increased activity from construction vehicles. However, construction traffic would constitute a small portion of the total existing traffic volume at MCB Camp Lejeune and MCAS New River. 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 measures would be temporary. Construction activities at MCB Camp Lejeune Sites 1, 2, and 3 would be initiated in phases in an effort to alleviate construction related traffic impacts.

Once the housing units and schools are constructed, traffic volumes on adjacent roads would increase. As described in Chapter 3, traffic studies were performed for specific areas of MCB Camp Lejeune that provided recommendations to alleviate identified traffic issues for various growth scenarios at the installation. Although no specific traffic issues have been identified at or in the vicinity of the proposed action, some of the recommendations of the traffic studies could also help minimize any minor issues that could occur from the proposed action.

#### **4.4.2 No Action Alternative**

Implementation of the No Action Alternative would maintain the status quo at MCB Camp Lejeune and MCAS New River. Current levels of traffic in the vicinity of the project areas would remain unchanged.

#### **4.5 Air Quality**

The proposed action, which includes construction of housing units and two DoDEA Schools, is being evaluated for air quality impacts to ensure that there are no significant, adverse impacts from the proposed action that could either cause the region to decline to nonattainment status or pose a health threat to the local population.

The region of influence (ROI) for direct and indirect effects of air emissions associated with the proposed action includes the Jacksonville Metropolitan Statistical Area of Onslow County, North Carolina and the City of Jacksonville. The Jacksonville Metropolitan Statistical Area, including MCB Camp Lejeune and MCAS New River, is designated as in attainment for all criteria pollutants.

Criteria pollutant emissions resulting from proposed construction activities have been evaluated for the proposed action and no action alternative. Air quality impacts would be considered significant if emissions associated with the proposed action would: 1) increase ambient air pollution concentrations above the NAAQS, 2) contribute to an existing violation of the NAAQS, 3) interfere with, or delay timely attainment of the NAAQS, or 4) impair visibility within federally-mandated Prevention of Significant Deterioration Class I areas.

Pollutants considered in this EA analysis include the criteria pollutants measured by state and federal standards. These criteria pollutants are generated by the types of activities (e.g., construction) associated with the proposed action. Airborne emissions of lead are not included because there are no known significant lead emissions sources in the region or associated with the proposed action and the no action alternative.

Determining the effects of the proposed action on local air quality and visibility involved calculating emissions associated with the proposed action (in tons per year) to determine air emissions increases or decreases relative to regional baseline conditions and to qualitatively assess the potential for air quality effects.

##### **4.5.1 Proposed Action**

Construction activities associated with the proposed action would result in minor, temporary increases in criteria pollutant emissions. Specifically, emissions from construction and construction-related vehicles used during construction activities would cause a small, short-term increase. There would be an extremely small long-term increase in stationary source emissions due to the addition of boilers in the elementary and junior high schools as a result of the proposed action.

Emission estimates were based upon the following assumptions.

- Demolition and construction activities at MCB Camp Lejeune would occur over a three year period
- Demolition and construction activities at MCAS New River would occur over a two year period
- Housing construction at MCB Camp Lejeune would involve approximately 1.2 million square feet of building footprints
- Housing construction at MCAS New River would involve approximately 150,000 square feet of building footprints
- Two DoDEA schools to be constructed at MCB Camp Lejeune would have combined footprints totaling approximately 147,000 square feet
- Acreage involved at MCB Camp Lejeune was estimated at 123 acres
- Acreage involved at MCAS New River was estimated at 18 acres

Total emissions resulting from proposed construction activities, which primarily include diesel engine emissions and fugitive dust, have been estimated and compared to the most recent county emission inventory for mobile sources (on- and off-road). These comparisons can be found in Table 4.5-1.

**Table 4.5-1 Estimated Construction Air Emissions (tons/year) Compared to Regional Mobile Source Emissions**

	VOCs	CO	NO <sub>x</sub>	<sup>1</sup> SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
MCB Camp Lejeune Annual Construction Emissions	1.00	4.51	6.72	0.78	14.43	1.83
<sup>2</sup> Regional (Onslow County) Mobile Source Emissions	3,401.00	33,556.00	3,848.00	232.00	203.00	172.00
% of Action Emissions Compared to Regional Emissions	0.03	0.01	0.17	0.34	7.11	1.06

<sup>1</sup>Oxides of sulfur measured as SO<sub>2</sub>.

<sup>2</sup>from EPA's National Emission Inventory database (USEPA, 2005).

Construction-related emissions would have a small and temporary impact on local air quality. Emissions from the construction activity scenario are predominantly associated with mobile diesel equipment and fugitive dust emissions from earth moving, grading and similar activities. Management practices implemented to minimize dust emissions related to construction activities would include the following.

- 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 two feet 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 15 mph
- Replant vegetation in disturbed areas as quickly as possible

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, as presented in Table 4.5-1.

The area of the proposed action is not located within 100 kilometers (620 miles) of a Class I Wilderness Area and ongoing or operational emissions would be negligible. The proposed action institutes construction of two new DoDEA Schools, which would include new, commercial-sized boilers to be used for heating and hot water supply. The new boilers may need to be included in the installation Title V permit, but air emissions associated with these operations would be minor, on the order of a few pounds per year.

In summary, estimated criteria pollutant emissions would not violate the NAAQS.

#### **4.5.2 No Action Alternative**

Implementation of the No Action Alternative would maintain the status quo at MCB Camp Lejeune and MCAS New River with regard to air quality. No construction emissions would occur and emissions would be identical to the baseline conditions that exist at present.

### **4.6 Noise**

Noise impacts result from the perceptible changes in the overall noise environment that increase annoyance or adversely affect human health. MCB Camp Lejeune and MCAS New River have not established quantitative limits for construction noise which would be temporary and periodic. Noise impacts from construction would be considered adverse if the construction activities resulted in an hourly equivalent sounds level of 75 dBA at a sensitive noise receptor (e.g., church, school, hospital).

#### **4.6.1 Proposed Action**

Under the proposed action, minor, temporary impacts to the noise environment in the vicinity of the construction areas on the study area sites would occur. The use of heavy equipment for site preparation and development (e.g., vegetation removal, grading, back fill) could potentially generate noise levels above average ambient noise levels. The construction-related noise levels would be typical of standard construction activities (i.e., 85-100 dBA), and would be scheduled to occur only during normal working hours (i.e., between 7:00 am and 5:00 pm, Monday through Friday).

The new housing areas, once populated, would not generate noise levels above average ambient noise levels and would be consistent with noise levels of the surrounding area. Due to the proposed construction of some housing in Noise Zone II locations, MCB Camp Lejeune would consider the feasibility of incorporating noise attenuation features into housing construction where appropriate.

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

Implementation of the No Action Alternative would maintain the status quo, and existing noise conditions at MCB Camp Lejeune and MCAS New River would remain relatively unchanged. The new homes and schools would not be built. Noise sources at MCB Camp Lejeune would continue to be dominated by

training operations, while noise sources at MCAS New River would continue to be dominated by air operations.

## **4.7 Infrastructure and Utilities**

### **4.7.1 Proposed Action**

#### **4.7.1.1 Potable Water**

As described in Chapter 3, the proposed project areas are serviced by two WTPs. MCB Camp Lejeune Sites 1, 2, 3, 5 and 8 are served by the Holcomb Blvd WTP, and the MCAS New River Wilson Boulevard Site is served by the Marine Corps Air Station WTP.

The demand for water from family housing areas would increase over current conditions as there would be 850 more families residing in military family housing under the proposed action. For the purposes of estimating potable water demand, this EA assumes that that average family size occupying the new housing units is four people per unit. With 850 housing units proposed, the number of family members associated with the housing units is 3,400. Using an average daily water consumption rate of 341 liters per day per person (90 gallons per day per person) (USGS, 2004), the additional 3,400 personnel who would occupy the new homes would create a demand for an additional 1.16 mld (0.31 mgd) at MCB Camp Lejeune. Each of the WTPs has sufficient capacity to support this increase in demand for potable water. Existing water lines are present in the vicinity of each of the proposed project areas and have sufficient capacity to serve the houses, schools, and associated facilities for domestic water requirements. If needed, the Base would coordinate with the NCDENR, Public Water Supply Section to obtain a Water Connection Permit. The potable water demands generated by the additional 850 families living on Base would be minor compared to the overall demand for potable water on the Base and in the region.

#### **4.7.1.2 Wastewater**

The advanced wastewater treatment plant located in the French Creek area of MCB Camp Lejeune currently processes approximately 19 mld (5 mgd) even though the treatment plant's process and sludge handling systems were designed for an average daily flow of 57 mld (15 mgd) (Whited, 2008). 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 850 families residing on MCB Camp Lejeune as a result of construction of the proposed housing areas would discharge approximately 1.1 mld (0.29 mgd). MCB Camp Lejeune's treatment plant has a current excess treatment capacity of up to 38 mld (10 mgd) which is sufficient to treat the potential increase in volume from the additional new homes. In addition, 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. MCB Camp Lejeune plans to increase the land area that is currently permitted for wastewater treatment sludge residuals application and to increase the amount of sludge storage at the wastewater treatment plant.

The proposed housing units and schools would require connections to the existing force main that transports wastewater to the main treatment plant in French Creek. If needed, the Base would coordinate with the NCDENR, Division of Water Quality, Non-Discharge Branch to obtain a Non-Discharge Sewer Extension Permit. Utility projects that would be initiated under the proposed action to serve the new housing areas and schools would include installation of an additional sewage trunk main connecting the new homes and schools constructed at Sites 1, 2, and 3 to Pump Station 745 (formerly 47/47A) near the Marston Pavilion. All required utilities connections for the proposed new housing areas and schools would be engineered to ensure that the capacity of the existing sewer mains is supplemented to accommodate wastewater generated from the new homes and schools.

#### 4.7.1.3 Electricity and Telecommunications

The proposed new homes, schools, and associated facilities would require connections to the electricity and telecommunications lines in the vicinity of the proposed project areas. As part of the proposed action, electrical and telecommunications utilities would be installed on both installations at the proposed new housing areas and schools to provide for daily residential needs as well as street and facility lighting. Specific electrical and telecommunications requirements for the proposed facilities have not been determined, but a minor increase in demand for these services would be expected to be met with the completion of proposed electric utility upgrade projects.

As part of the proposed action, MCB Camp Lejeune would execute military construction project P-1220B Electrical Modification to Substation #2. This project would install additional bays at existing Substation #2 to increase transformer capacity and would provide a new overhead primary transmission line to Berkeley Manor and Paradise Point. The existing right-of-way located along the eastern boundary of MCB Camp Lejeune Site 5 would be widened approximately 12 m (40 ft) to allow for placement of the new overhead line (Sides, 2008).

Additional telephone service distribution lines would be installed to serve the new enlisted housing areas and schools at MCB Camp Lejeune and the officer housing area at MCAS New River.

#### 4.7.1.4 Solid Waste

Solid waste generated during construction and operation of the proposed homes, schools, and associated facilities would be disposed of 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 calculated potential long-term increase in solid waste generated by the 850 personnel and dependents who would occupy the new enlisted family housing units at MCB Camp Lejeune would be approximately 2,792 tons (5.58 million pounds) per year. This is based on the assumption that each of the 850 families occupying housing would consist of four people, for a total of 3,400 people.

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 January 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. The Base landfill is expected to remain open until approximately 2030 (MCB Camp Lejeune EMD, 2008) and would therefore have sufficient capacity to support the additional solid waste produced as a result of implementing the proposed action. The additional solid waste generated by the 850 additional families living on Base would be minor compared to the overall level of solid waste generated on Base.

Any materials that are recyclable would be separated out of the waste stream and taken to the construction and demolition debris facility on Base 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.

#### 4.7.1.5 Stormwater

MCB Camp Lejeune's 2002 Stormwater Pollution Prevention Plan establishes a comprehensive program to control stormwater discharges, and the Stormwater Management Plan establishes requirements and assigns responsibilities for the implementation of the Stormwater Management NPDES Phase II requirements. Both would be followed during the design and operation of the proposed homes, schools, and associated infrastructure to control and treat runoff. Construction of the homes and schools would result in a net increase in impervious surfaces which includes new buildings, parking areas, driveways, and sidewalks. This would increase the amount and velocity of stormwater.

Best management practices would be used to avoid contamination of stormwater and mitigate both short-term (construction phase) and long-term (project life) impacts. Short-term practices could include erosion and sedimentation controls and temporary sedimentation basins, which would not be placed directly within wetlands. Long-term strategies, as needed, would be developed as part of the site design process. Other mitigation measures would include planting grass on bare areas and planting native shrubs and trees with mulching in select areas. This vegetation would serve to aid in absorption and filtering stormwater runoff.

Lastly, MCB Camp Lejeune's current Stormwater Phase I permit was approved in 2004. When this permit is renewed again (anticipated sometime in 2009) all new facilities, such as the housing units and schools included in the proposed action, would be evaluated for compliance with the permit requirements and to determine if they need to be included in the permit and associated management plans.

#### **4.7.2 No Action Alternative**

Implementation of the No Action Alternative would maintain the status quo at MCB Camp Lejeune and MCAS New River with regard to infrastructure and utilities. The new housing units would not be constructed; therefore, the number of military personnel and dependents living on Base would not increase commensurate with the number of new houses proposed for construction. The impacts to infrastructure and utilities based on increased demand would not be realized under the No Action

Alternative. MCB Camp Lejeune would not execute military construction project P-1220B Electrical Modification to Substation #2.

## **4.8 Cultural Resources**

### **4.8.1 Proposed Action**

No historic resources (i.e., buildings, monuments) are located on the proposed project sites. MCB Camp Lejeune assessed two sites (one on Site 5 and one on Site 8) and determined that they were ineligible for inclusion on the National Register of Historic Places. The results of the eligibility assessment have been coordinated with the State Historic Preservation Office (Appendix A). Therefore, no effects to cultural resources are anticipated as a result of implementing the proposed action.

### **4.8.2 No Action Alternative**

Implementation of the No Action Alternative would maintain the status quo at MCB Camp Lejeune and MCAS New River with regard to cultural resources because no housing/school/facility development or ground disturbing activities would occur. Development at MCB Camp Lejeune and MCAS New River under the No Action Alternative would continue to be carried out in accordance with the Integrated Cultural Resource Management Plan, which addresses National Historic Preservation Act compliance and provides guidance for management of historic properties.

## **4.9 Natural Resources**

### **4.9.1 Topography, Soils, and Geology**

Impacts from disturbance of soil, topography, and geology would be considered adverse if ground disturbance or other activities violate applicable federal or state laws and regulations.

#### **4.9.1.1 Proposed Action**

Minor impacts to existing topography would occur during clearing and grading of proposed construction areas. Construction activities would have little to no impact on geological formations at MCB Camp Lejeune and MCAS New River. The proposed action would require the disturbance of soils during clearing and grading activities. However, implementation of best management practices during construction and demolition would reduce impacts to soils associated with grading and clearing activities. In addition, standard erosion control measures (e.g., silt fencing, sediment traps, application of water sprays, and revegetation of disturbed soils) would be implemented to reduce the potential for adverse impacts. The demolition of concrete slabs previously used as foundations for structures that have been removed at Site 8 would likely result in denuded areas, however these areas would likely be revegetated, thereby reducing the likelihood of soil erosion. Prior to construction, approval would be obtained by the NCDENR on all Erosion and Sediment Control Plans for the proposed activities. The installation would avoid violating any applicable state or federal laws or regulations. Given these precautions, the proposed action would not result in adverse impacts to soils, topography, and geology.

#### 4.9.1.2 No Action Alternative

Implementation of the No Action Alternative would maintain the status quo at MCB Camp Lejeune and MCAS New River and would have no impact on topography, soils or geology. In the absence of the proposed construction activities and utility upgrades, soil profiles and vegetative cover would remain in their present condition.

### **4.9.2 Water Resources**

Adverse impacts to water resources are defined as any long-term impacts (chemical, physical, or biological) that would alter the baseline or standard water quality condition.

#### 4.9.2.1 Proposed Action

Final design development for the proposed facilities and associated infrastructure would avoid and minimize impacts to surface water resources located within the proposed action areas. MCB Camp Lejeune and MCAS New River would coordinate with the USACE and NCDENR to acquire the necessary permits and implement mitigation measures as required.

Construction and demolition activities could result in a temporary increase in runoff and total suspended particulate matter to surface water both within and near the proposed project areas. In addition, a net increase in impervious surface would result from the construction of the facilities and associated infrastructure. This would result in an associated increase in stormwater discharge volumes and intensities. As detailed site plans are developed for the proposed facilities and associated infrastructure, appropriate permanent stormwater control measures would be incorporated. The installations would adhere to standards and best management practices contained in the MCB Camp Lejeune Storm Water Pollution Prevention Plan (see also section 4.7.1.5, Stormwater).

The proposed action would not have an adverse impact on groundwater resources, as groundwater resources would not be impacted during construction and demolition.

Compliance with all necessary permit conditions and implementation of best management practices and mitigation measures would ensure that stormwater is adequately controlled at construction sites to minimize potential impacts on surrounding surface water resources and water quality. Thus, implementing the proposed action would not result in adverse impacts to surface waters or groundwater.

#### 4.9.2.2 No Action Alternative

Implementation of the No Action Alternative would maintain the status quo at MCB Camp Lejeune and MCAS New River, and neither surface water nor groundwater resources would be impacted. No demolition or construction activities would occur. Groundwater levels and quality would remain in their present condition.

### **4.9.3 Wetlands and Floodplains**

Impacts to wetlands would be considered adverse if project activities result in direct or indirect destruction or modification of delineated wetlands without mitigation.

#### 4.9.3.1 Proposed Action

Construction activities would avoid, by design and project implementation, surveyed jurisdictional wetlands and floodplains on each of the sites involved with the proposed action. Results of wetlands studies conducted in 2004 by ARCADIS and in 2008 by Geo-Marine, Inc. would be consulted by MCB Camp Lejeune in the design phase of the PPV projects in order to ensure, to the maximum degree feasible, that wetlands and waters of the US are avoided during construction. Wetland protection measures of avoidance, minimization, and compensatory mitigation as set forth 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 (USACE and USEPA, February 1990) would be implemented as follows.

- 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)
- 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)

Construction activities in the vicinity of wetlands could cause short-term impacts such as siltation of surface water due to an increased erosion potential from clearing and minor grading activities. Erosion would be minimized through implementation of best management practices (such as use of silt fences and stormwater management structures) in accordance with an approved erosion and sediment control plan.

Unavoidable impacts to wetlands or waters of the US will be minimized. Wetlands and floodplains would most likely be impacted by road crossings under the proposed action. If wetlands are to be affected (i.e., wetlands cannot be avoided based on the results of the 2008 Wetlands Study), MCB Camp Lejeune and MCAS New River would obtain the appropriate CWA Section 404 permit from the USACE (nationwide or individual permit depending on the quantity of wetlands that are affected) prior to construction, and would implement mitigation as required by wetland permit conditions.

#### 4.9.3.2 No Action Alternative

Implementation of the No Action Alternative would maintain the status quo at MCB Camp Lejeune and MCAS New River, and baseline conditions with regard to wetlands and floodplains would remain unchanged.

### 4.9.4 Vegetation

Impacts on vegetation, wildlife, and special status species would be considered adverse if one of more of the following conditions would result.

- Substantial loss or degradation of habitat or ecosystem functions (natural features and processes) essential to the persistence of native plant and animal populations
- Substantial loss or degradation of a sensitive habitat, including wetlands that support high concentrations of special status species or migratory birds
- Disruption of a federally listed species, its normal behavior patterns, or its habitat that substantially impedes the installation's ability to either avoid jeopardy or conserve and recover the species (including violating Section 9 of the Endangered Species Act)
- Substantial loss of population or habitat for a state-protected or non-listed but special status species, increasing the likelihood of federal listing action to protect the species in the future

#### 4.9.4.1 Proposed Action

Of the approximately 415 ha (1,025 ac) being considered in this EA, the total estimated area of land required for the proposed action is approximately 200 ha (495 ac), consisting of 182 ha (450 ac) at MCB Camp Lejeune and 18 ha (45 ac) at MCAS New River. The total estimated amount of forest that would be cleared under the proposed action is approximately 165 ha (407 ac). This figure represents an area that is smaller than the total acreage required for the proposed action because some portions of the proposed project sites have already been cleared and/or are not currently classified as forested land (MCB Camp Lejeune, 2008b). The total land requiring clearing represents less than 0.5 percent of the installations' total forested areas. Table 4.9-1 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. No RCW foraging habitat would be removed as part of the proposed actions, and no areas included in the RCW recovery goal are included in the areas to be cleared.

#### 4.9.4.2 No Action Alternative

Implementation of the No Action Alternative would maintain the status quo at MCB Camp Lejeune and MCAS New River and would not result in impacts to vegetation. The Base's Forest Management Program would continue to support the military mission, enhance the ecological integrity of forestlands, and generate revenue (e.g., through timber sales) to support active forest management.

### **4.9.5 Wildlife**

Impacts on vegetation, wildlife, and special status species would be considered adverse if one of more of the following conditions would result.

- Substantial loss or degradation of habitat or ecosystem functions (natural features and processes) essential to the persistence of native plant and animal populations
- Substantial loss or degradation of a sensitive habitat, including wetlands that support high concentrations of special status species or migratory birds

#### 4.9.5.1 Proposed Action

The removal of pine savanna forested habitat in the proposed project areas would cause forest dwelling birds, mammals, reptiles, and amphibians to be permanently displaced once the land is cleared. 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.

**Table 4.9-1 Forest Types for PPV Project Area**

Species Make-up (Dominant Overstory species listed first)	Forest in Project Area	Forest Impacted in Project Area	Percent of Total Forest of this type on Base Impacted due to Proposed Action*	Occurrence	Age of Forest	Production Value (in board feet [bf])
Longleaf Pine	3 ha (7 ac)	1 ha (3 ac)	0.02% (12,538 total acres on Base)	Uplands	2 yrs old	0 bf
Loblolly Pine	148 ha (365 ac)	62 ha (153 ac)	1.3% (11,356 total acres on Base)	Uplands	50 yrs old or greater	500 bf
Loblolly Pine	68 ha (169 ac)	26 ha (65 ac)	0.4% (16,392 total acres on Base)	Uplands	35 yrs old or less	400 bf
Loblolly Pine/Mixed Hardwood	62 ha (152 ac)	25 ha (62 ac)	0.85% (7,481 total acres on Base)	Mid-slopes	~72 yrs old	400 bf
Mixed Hardwoods	81 ha (200 ac)	33 ha (82 ac)	0.35% (22,767 total acres on Base)	Bottomlands and Drainages	~73 yrs old	300 bf
Mixed Hardwood/Loblolly Pine Mix	40 ha (99 ac)	17 ha (42 ac)	1.18 % (3,534 total acres on Base)	Mid-slopes	~65 yrs old	300 bf

\* Total acreage includes MCB Camp Lejeune and MCAS New River

Source: MCB Camp Lejeune, 2008b

Movement of wildlife species within the installations would not be significantly impacted by the proposed action. 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.

The opportunity to manage permanent forest openings for wildlife would be lost under the proposed action.

The Department of Defense operates under a Memorandum of Understanding with the U.S. Fish and Wildlife Service for the Migratory Bird Treaty Act (see Section 3.9.5 Wildlife). The migratory bird

species that have potential to occur in the area of the proposed action have been identified in Appendix B. The proposed action addressed within this EA would have minor impacts to migratory birds due to the destruction of potential habitat. Population level effects would not occur because the proposed action area represents a minor portion of the habitat available on an installation-wide and regional basis. Therefore, the proposed action would not result in any adverse impacts. Additionally, 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 US Fish and Wildlife Service regarding Migratory Bird Treaty Act issues.

#### 4.9.5.2 No Action Alternative

Implementation of 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.

### **4.9.6 Threatened and Endangered Species**

Impacts on vegetation, wildlife, and special status species would be considered adverse if one of more of the following conditions would result.

- Disruption of a federally listed species, its normal behavior patterns, or its habitat that substantially impedes the installation's ability to either avoid jeopardy or conserve and recover the species (including violating Section 9 of the Endangered Species Act)
- Substantial loss of population or habitat for a state-protected or non-listed but special status species, increasing the likelihood of federal listing action to protect the species in the future.

#### 4.9.6.1 Proposed Action

No federally-listed or proposed threatened or endangered species under the jurisdiction of the U.S. Fish and Wildlife Service are known to occur on the sites involved with the proposed action.

The construction required by the proposed action would not affect RCW foraging habitats, or any RCW habitat partitions. No RCW clusters occur on the project sites, and the closest is cluster number 19. It is located approximately 3 km (2 mi) east of MCB Camp Lejeune Site 1.

MCB Camp Lejeune does not expect the proposed action to limit the Base's RCW protection plan or ability to maintain sufficient foraging habitat to meet the recovery goal of 173 active RCW clusters.

Given these conditions, there would be no impacts to threatened and endangered species from the proposed action.

#### 4.9.6.2 No Action Alternative

Implementation of the No Action Alternative would maintain the status quo with regard to threatened and endangered species. Protected species and their habitats at MCB Camp Lejeune and MCAS New River would continue to be managed under the Threatened and Endangered Species Management Program.

### **4.10 Hazardous Materials and Hazardous Wastes**

The significance of potential impacts associated with hazardous materials and hazardous wastes is based on the toxicity of the substances as well as their management (i.e., transportation, storage, disposal). Hazardous materials and waste impacts are considered adverse if the use, storage, transportation or disposal of these substances substantially increases the human exposure risk or environmental contamination.

#### **4.10.1 Proposed Action**

Several contaminated sites and historical ranges are located on or near the proposed project areas. MCB Camp Lejeune would 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 sites could be affected. MCB Camp Lejeune would obtain necessary approvals from the US Environmental Protection Agency and the NCDENR with regard to any proposed development within a contaminated site.

##### 4.10.1.1 Contaminated Sites

The proposed action would take place near several IR sites. In particular, IR Site 13 is located within the proposed project area in the northwest corner of MCB Camp Lejeune Site 3; IR Site 40 is located adjacent and to the east of the MCAS New River Wilson Boulevard Site; and IR Site 41 is located approximately 500 meters (1,640 feet) south/southwest of the Wilson Boulevard Site.

MCB Camp Lejeune has determined that there are no hazardous materials or hazardous wastes present on IR Site 13, and that it is suitable for residential development (Lowder, 2008). However, due to its previous history as a construction material dump site, the possibility remains that buried solid waste could be present. If the Base decides to include this area in the PPV land conveyance for residential construction, any necessary soil disturbance activities would include measures to minimize the risk to human health and the environment.

As described in Section 3.10.1, several historical ranges (inactive ranges, closed ranges, and ranges proposed for closure) exist on and in the vicinity of the Wilson Boulevard Site at MCAS New River. MCB Camp Lejeune is currently conducting an assessment of the Small Arms Range, which overlaps the northeastern portion of the Wilson Boulevard Site, and would consider this area suitable for residential development only if satisfactory results are obtained from the associated sampling and analysis activities.

Contractors would be notified during the bidding and scoping processes for each construction project of the nature and extent of known contaminated soil or groundwater so that they can inform their employees

in advance of onsite activities and take appropriate precautions to protect their health and safety and to prevent the spread of contaminated soil or groundwater. Any contamination would be remediated prior to construction.

#### 4.10.1.2 Lead-based Paint

No structures are located on any of the project sites, and no lead-based paint is known or suspected to be present on any of the project sites. The proposed construction activities would avoid, by design and project implementation, the use of lead-based paint in new structures and on associated facilities, including light poles, street and parking area marking, and playground equipment.

#### 4.10.1.3 Asbestos

No structures are located on any of the project sites, and no asbestos or asbestos-containing materials are known or suspected to be present on any of the project sites. The proposed construction activities would avoid, by design and project implementation, the use of asbestos-containing materials in new structures and associated facilities, including roofing and siding products, pipe insulation, flooring and adhesives, and miscellaneous items such as gaskets.

#### 4.10.1.4 Storage Tanks

Based upon information provided by MCB Camp Lejeune Environmental Management Division personnel, no aboveground or underground storage tanks are located at the project sites. No new aboveground or underground storage tanks would be installed as part of the proposed action.

#### 4.10.1.5 Pesticides

Based upon information provided by MCB Camp Lejeune Environmental Management Division personnel, no pesticides are stored at any of the project sites and no pesticides are currently being applied to any of the project sites. MCB Camp Lejeune would specify, through the PPV contract terms with the PPV entity, the limitations on and requirements for management of any pesticide products brought onto the installations during construction and during the term of operation of the housing areas. Pesticides stored and used at the new schools would be managed by the DoDEA in accordance with relevant Base Orders and the MCB Camp Lejeune Integrated Pest Management Plan.

### **4.10.2 No Action Alternative**

Implementation of the No Action Alternative would maintain the status quo, and the existing conditions with regard to hazardous materials and waste management and at contaminated sites would not change from baseline conditions under the. MCB Camp Lejeune and MCAS New River 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.

## **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, inclusive of MCAS New River. Second, other past, present, and reasonably foreseeable future activities actions at MCB Camp Lejeune and MCAS New River 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. The potential for cumulative impacts to each of these resource areas is discussed in Section 5.3. The potential cumulative impacts to these resource areas are evaluated at a level commensurate with that potential for cumulative impact.

### **5.2 Other Past or Planned Actions in the Vicinity of the Proposed Action**

Past and future projects at MCB Camp Lejeune that could interact directly or indirectly with the proposed action are discussed below. These projects, which are all located at MCB Camp Lejeune, 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 interact cumulatively with the proposed action are not addressed in this EA. With the exception of projects incorporated under the Marine Corps Grow the Force initiative, there are no additional projects planned for MCAS New River.

### **5.2.1 NEPA Documents Currently in Preparation for MCB Camp Lejeune**

*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 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. 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.

*Range Operations*-This EA is being prepared to assess the potential environmental consequences from continuing and projected training operations conducted at the MCB Camp Lejeune Range Complex within areas controlled by range standard operating procedures. The purpose and need for the proposed action is to conduct current and emerging training operations in a manner that ensures the MCB Camp Lejeune Range Complex is sustainable and capable of supporting Marine Corps, Navy, and joint services readiness training. This readiness training not only involves current, ongoing training operations, but also encompasses emerging and future training operations. The need for the proposed action is for MCB Camp Lejeune to continue providing comprehensive and realistic combat training – its primary role.

*Grow the Force (temporary beddown)*-This EA proposes to accommodate immediate increases in Marine forces at MCB Camp Lejeune, North Carolina, in either existing facilities or newly constructed facilities until the decision to construct permanent facilities for these Marines is made. Use of existing and temporary facilities would expedite the placement and accommodation of incoming new Marines 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.

*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. 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. The Marine Corps Grow the Force initiative would create additional demand for on-base housing, necessitating construction of approximately 1,350 housing units. It is expected that these housing units would be constructed on MCB Camp Lejeune Sites 1, 2, 3, 5, and 8. The EIS will evaluate the proposed construction of a cross-installation parkway (4-lane road) that would cross through MCB Camp Lejeune Sites 1, 2, and 3.

### **5.2.2 Previously Prepared NEPA Documents for MCB Camp Lejeune**

*4th Marine Expeditionary Brigade Complex*-The EA for the 4th Marine Expeditionary Brigade Complex (MCB Camp Lejeune, 2004) 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.

*Force Structure Review Group Initiatives*-The EA for the Force Structure Review Group Initiatives for FY 2005 (MCB Camp Lejeune, 2005a) 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 would comprise two new infantry

battalions, a new light armored reconnaissance company, and a new reconnaissance company and platoon. This EA resulted in a FONSI determination and facilities are currently under construction.

*D-30 Range Relocation and Upgrade*-The EA for the D-30 Range evaluated impacts of relocating and upgrading a small arms range within the Hadnot Point area of the Base (MCB Camp Lejeune, 2005b). Relocation, which began in 2006, involves the expansion of the range from 32 lanes to 42 lanes. Design features of the range include thickening overhead baffles; constructing an earthen berm; a wooden backstop and an observation tower; installing a bullet trap and air filter system to upgrade the range; and constructing a small parking lot. The analysis in the D-30 Range EA resulted in a determination of a FONSI.

*Marine Special Operations Command Complex*-An EA was prepared for the Marine Special Operations Command complex (MCB Camp Lejeune, 2007d) 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 FONSI.

### **5.2.3 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 Cumulative Impacts**

As previously described, several past and reasonably foreseeable future projects at MCB Camp Lejeune and MCAS New River have the potential to interact cumulatively with the proposed action described in this EA, especially with respect to the population increases that have occurred or are planned to occur

under each of the separate actions. The intent of this EA is to assess the potential environmental effects of the construction, through a PPV, of approximately 850 family housing units for enlisted military personnel, and two DoDEA Schools at MCB Camp Lejeune and construction of approximately 110 family housing units for officers at MCAS New River.

All resources were evaluated for potential cumulative impacts resulting from the past, present, and future actions at MCB Camp Lejeune and MCAS New River in combination with the proposed action. For nearly all resource areas, it was determined that the impacts of the proposed action evaluated in this EA at MCB Camp Lejeune and at MCAS New River would not have additive, interactive, or synergistic impacts that would cumulatively impact resources. However, it was determined that implementation of the proposed action could result in cumulative impacts analysis for two resource areas – Socioeconomics and Community Facilities and Services – and, therefore, the cumulative impacts to these resource areas are evaluated at a level commensurate with the potential for cumulative impact.

### **5.3.1 Socioeconomics**

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 presented in Section 3.2, 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 discussion of existing socioeconomic conditions (Section 3.2). A number of the past, present, and future actions at MCB Camp Lejeune and MCAS New River listed in Section 5.1 have the potential for additive, interactive, and synergistic socioeconomic impacts.

For this proposed action, the socioeconomic impacts are focused on the construction of housing and two schools on the installation. Approximately 77 percent of the MCB Camp Lejeune military personnel with families and 30 percent of the bachelor military personnel live off Base (MCB Camp Lejeune, 2005). Families of active duty military members with the rank of E-5 and below account for 68 percent of the total housing demand. A shortfall of suitable housing units exists in the market area. The construction of approximately 850 new housing units on MCB Camp Lejeune and 110 housing units on MCAS New River would improve the availability of housing for military personnel and their families. Additionally, the provision of new on-base housing units would ensure that more housing in the private sector (i.e., off-base) is available for non-military families. Thus, the cumulative impact of the construction of up to 960 housing units at MCB Camp Lejeune and MCAS New River is a positive impact for both the active military community and the regional community.

The construction-related spending associated with each of these actions would result in temporary employment and expenditures and gains through the affected economic sectors. The sum total additive impact 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.

When projects are considered on a cumulative basis, there would not be disproportionate adverse impacts to minorities or low-income populations, or health and safety risks to children.

### **5.3.2 Community Facilities and Services**

Two new DoDEA Schools are proposed at Camp Lejeune. It is estimated that military related students comprise one third of the student body of off-base public schools. The off-base public elementary schools are 13 percent beyond capacity, and the middle schools and high schools are near capacity as of the 2005-2006 school year. Therefore the proposed facilities would benefit the military-related children who currently attend public school off-base and relieve the student overburden on Onslow County public schools, most of which have surpassed their intended student body.

### **5.3.3 Conclusion**

Implementation of the proposed action would not result in notable cumulative impacts to most resource areas. Although the incremental impacts of the proposed action would be temporary and would contribute minimally to the overall impact, the cumulative gains in population associated with recent past and future use would result in additive impacts to Socioeconomics and Community Facilities and Services. The proposed action addressed in this EA would provide a beneficial impact with the addition of new on-base housing and two new schools constructed on MCB Camp Lejeune.

Overall, the additive and interactive cumulative impacts to socioeconomics and schools could be significant without adequate mitigation; 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 is expected to greatly countervail impacts of Marine Corps growth to Socioeconomics and Community Facilities and Services.

## **5.4 Unavoidable Adverse Impacts**

Implementation of the proposed action would result in minor short-term and intermittent impacts, such as increases in dust, noise levels, and traffic at the project areas associated with construction activities. The proposed action also includes installations boilers at the DoDEA Schools that, once in operation, would result in a very small increase in air emissions. 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 best management practices.

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 trees comprising the mixed pine-bottomland hardwood habitats. The removal of trees in the project sites would reduce the carrying capacity for wildlife species associated with that type of habitat but the reduction would not be significant in the context of all forested areas of similar composition existing within MCB Camp Lejeune and MCAS New River.

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

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 housing and schools 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, 100-200 acres of undeveloped or unused, developed land would be 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 (e.g., from timber sales).

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

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).

Fuel, construction materials, and labor would be expended during construction activities. Operating the new housing and schools would require energy to heat, cool, and light the buildings as well as operate the security barriers. Implementation of 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 would it impact the biodiversity of the region.

## **5.7 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
- 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.

Best management practices 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 construction 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 construction 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.

## **6.0 LIST OF PREPARERS**

This EA was prepared by:

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**2496 Old Ivy Road, Suite 300**  
**Charlottesville, Virginia 22903**

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**APPENDIX A**  
**SECTION 106 CONSULTATION**

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**UNITED STATES MARINE CORPS**  
MARINE CORPS BASE  
PSC BOX 20004  
CAMP LEJEUNE, NC 28542-0004

IN REPLY REFER TO:

5090.8

BEMD

**JUN 25 2008**

Mr. Peter Sandbeck  
Administrator, State Historic Preservation Office  
North Carolina Division of Archives and History  
109 East Jones Street  
Raleigh, North Carolina 27601

Subj: PHASE IV AND PHASE V MILITARY FAMILY HOUSING PUBLIC  
PRIVATE VENTURE, MARINE CORPS BASE, CAMP LEJEUNE, ONSLOW  
COUNTY, NORTH CAROLINA

Dear Mr. Sandbeck:

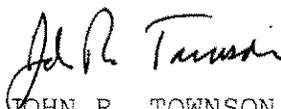
The United States Marine Corps (USMC) proposes as Phase IV and Phase V of the Family Housing Privatization (PPV) Initiative to construct approximately 850 single family homes for enlisted military personnel, and two Department of Defense Education Activity (DoDEA) Schools at Marine Corps Base (MCB) Camp Lejeune, and to construct approximately 110 family housing units for officers at Marine Corps Air Station (MCAS) New River, both of which are located in Onslow County, North Carolina (enclosure 1). Construction of the single family homes, two schools, and associated infrastructure and facilities would occur on any portions of Sites 1, 2, 3, 5, and 8 at MCB Camp Lejeune, and the Wilson Boulevard Site at MCAS New River, that are determined to be suitable for development.

Enclosure 2 provides an aerial view of existing conditions at each of the proposed family housing construction sites, and enclosure 3 provides details of previous investigations and archaeological site locations within and adjacent to each proposed development area. Enclosure 4, draft report "Archaeological Evaluation of Two Sites for Phases IV and V of Family Housing Public Private Venture, Marine Corps Base, Camp Lejeune, Onslow County, North Carolina", prepared by SEARCH, Inc., is provided for your review and comment. Based on the information provided in this letter and enclosures, we have determined that construction of the proposed Phases IV and V of the Family Housing PPV at MCB Camp Lejeune and MCAS New River

will have no effect on historic properties listed on or eligible for listing in the National Register of Historic Places (NRHP).

The enclosed are provided for your review and comments in accordance with Section 106 of the National Historic Preservation Act and 36 CFR 800, Protection of Historic and Cultural Properties. If you have any questions on this matter, please contact Rick Richardson, Base Archaeologist, Environmental Conservation Branch, Environmental Management Division, Installations and Environment Department, at (910) 451-7230, or email at rick.richardson@usmc.mil.

Sincerely,



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

Enclosures:

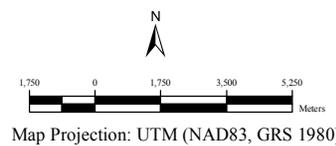
1. Project Locations.
2. Existing Conditions at Proposed Family Housing PPV Locations.
3. Archaeological Sites and Previous Investigations in the Vicinity of Proposed Family Housing PPV Areas of Potential Effect.
4. Draft Report "Archaeological Evaluation of Two Sites for Phases IV and V of Family Housing Public Private Venture, Marine Corps Base, Camp Lejeune, Onslow County, North Carolina".

# Enclosure 1 Project Locations



-  Camp Lejeune Installation Boundary
-  PPV Sites 1, 2, 3, 5 and 8
-  MCAS New River - Wilson Blvd

Prepared: 20 JUN 2008  
Author: Cultural Resources  
Organization: ECON/EMD  
Telephone: 910-451-7009



Map Generated using the Geographic Information System  
Managed by the GIS Office  
Communications/Information Technology Services Division (CITSD)  
Business & Logistics Support Department (BLSD)

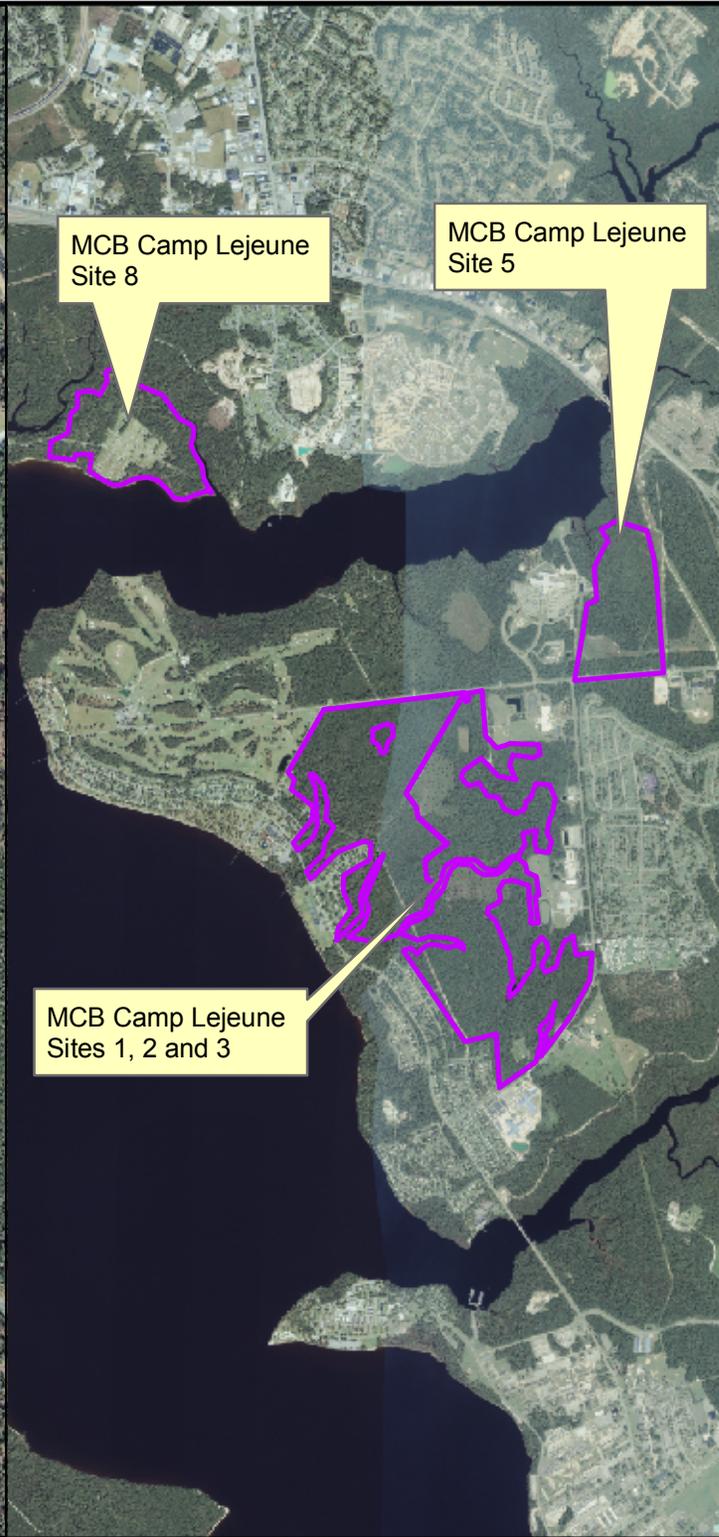
NOTE: THIS MAP IS FOR REFERENCE ONLY  
THIS MAP IS FOR OFFICIAL USE ONLY (FOUO)

Although every effort has been made to ensure the accuracy of information, errors and conditions originating from the physical sources used to develop the database may be reflected in the data supplied. The requestor must be aware of data conditions and ultimately bear responsibility for the appropriate use of the information with respect to possible errors, original map scale, collection methodology, currency of data, and other specific conditions to certain data.

## Enclosure 2 Existing Conditions at Proposed Family Housing Locations



MCAS New River  
Wilson Blvd Site



MCB Camp Lejeune  
Site 8

MCB Camp Lejeune  
Site 5

MCB Camp Lejeune  
Sites 1, 2 and 3

-  PPV Sites 1, 2, 3, 5 and 8
-  MCAS New River - Wilson Blvd

Prepared: 20 JUN 2008  
Author: Cultural Resources  
Organization: ECON/EMD  
Telephone: 910-451-7009



Map Projection: UTM (NAD83, GRS 1980)

Map Generated using the Geographic Information System  
Managed by the GIS Office  
Communications/Information Technology Services Division (CITSD)  
Business & Logistics Support Department (BLSD)

NOTE: THIS MAP IS FOR REFERENCE ONLY  
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**Enclosure 3**  
**Archaeological Sites and Previous Investigations.**

Numerous archaeological surveys have been conducted within the Areas of Potential Effect (APE) for the proposed Family Housing PPV construction. Enclosures 3a through 3c detail the location of previous investigations and the location of archaeological resources within and adjacent to the project APE. No archaeological resources or historic architectural properties listed on or eligible for listing in the NRHP are present within the proposed Family Housing PPV APE.

Family Housing PPV Sites 1 - 3, MCB Camp Lejeune. PPV Sites 1, 2, and 3 are bordered on the west and south by the Paradise Point housing area, on the south and east by Stone Street, and on the north by Brewster Boulevard (see enclosure 3a). Together, Sites 1, 2, and 3 comprise approximately 700 acres of contiguous and predominantly undeveloped land. Site 1 is comprised of approximately 241 acres of predominantly forested uplands. Site 2 encompasses approximately 172 acres of forested uplands, and Site 3 is similarly forested and encompasses approximately 293 acres. Previous surveys within these three sites include Goodwin and Associates 1993 survey for wastewater treatment upgrades (Outlaw et al. 1993), TRC's FY2002 and 2003 Silvicultural Prescription Surveys, and MCB Camp Lejeune's survey by the Base Archaeologist for an interim child development center (Richardson 2006). All sites located within the APE were determined ineligible for the NRHP. One unassessed site, 31ON1199, was recorded by TRC in 2003 and lies just south of the APE for PPV Site 3. Site 31ON1199 is separated from the proposed construction area by an unnamed tributary to the New River (enclosure 3a). No construction would take place south of the tributary and within the boundary of site 31ON1199.

Family Housing PPV Sites 5 and 8, MCB Camp Lejeune. PPV Sites 5 and 8 are located north of Sites 1-3 (enclosure 3b). Site 5 is comprised of approximately 123 acres of undeveloped forested land and is located south of Northeast Creek, immediately north of Brewster Boulevard, and east of the Naval Hospital. Site 8 is comprised of approximately 142 acres located immediately north of Northeast Creek, west of Frenchman's Creek, and east of Scales Creek. Much of Site 8 was cleared in the past and contained the former Knox Trailer Park that is now vacant. The edge areas of the former trailer park have been reforested.

All high probability soils within PPV Sites 5 and 8 were surveyed during TRC's FY2001 Silvicultural Prescription Survey. Earlier surveys by Goodwin and Associates, and Environmental Services, Inc., for sewer (Outlaw et al. 1993) and gas pipelines (Ashley 1997) were conducted through portions of both Sites 5 and 8 (see enclosure 3b).

### Enclosure 3 (continued)

TRC recommended one prehistoric site within Site 5 for further work (31ON971), and one prehistoric site within Site 8 for further work (31ON434). As a result of the current Family Housing PPV Project, both of these sites were evaluated for NRHP eligibility by SEARCH, Inc., consultants for MCB Camp Lejeune. The draft report (enclosure 4) of this investigation recommends that both sites are not considered eligible for inclusion in the NRHP, and MCB Camp Lejeune concurs with the recommendations. This draft report is provided for your review and comments or acceptance.

Wilson Boulevard Family Housing PPV Site, MCAS New River. The Wilson Boulevard Site at MCAS New River is bisected by Robert L. Wilson Boulevard and is situated east of Wilmington Highway (United States Route 17 [US 17]), south of Curtis Road, and north of Douglas Road. The site is comprised of approximately 34 acres which are partially cleared and contains an abandoned building site. Approximately one-half of the Wilson Boulevard PPV Site was previously considered for family housing as part of the Phase II Family Housing PPV project in 2006, and was included in what was formerly referred to as the Douglas Road Site (enclosure 3c). By letter dated August 2, 2006 (ER 05-1613), your office concurred that the former Douglas Road Site would have no effect on historic properties. The former Douglas Road Site was subsequently rejected as an alternative during Phase II of the Family Housing PPV. The Wilson Boulevard Site represents a modification and significantly reduced construction footprint for family housing, and is partially contained within the previous Douglas Road footprint. All high probability soils within the Wilson Boulevard PPV Site APE were surveyed during TRC's FY2005 Silvicultural Prescription Survey (Millis 2006), and no historic properties are located within the proposed APE.



Rick Richardson

910-451-1787

2 pages

## North Carolina Department of Cultural Resources

### State Historic Preservation Office

Peter R. Sandboeth, Administrator

Michael F. Pasley, Governor  
Lisbeth C. Evans, Secretary  
Jeffrey J. Crow, Deputy Secretary

Office of Archives and History  
Division of Historical Resources  
David Brook, Director

August 2, 2006

Scott A. Brewer, PE  
Director, Environmental Management  
USMC  
PSC Box 20004  
Camp Lejeune, NC 28542-0004

Re: Phase II of Privatization of Family Housing at Marine Corps Base, Camp Lejeune, Onslow County, (5090.8 BEMD), ER 05-1613

Dear Mr. Brewer:

Thank you for your letter of July 10, 2006. We have reviewed the documentation and draft archaeological survey report for the project referenced above and offer the following comments.

Our response is divided between two specific components of the documentation, including your letter and a draft report by SEARCH, Incorporated. According to your letter, the Highway 17 South alternative has been rejected and will not be developed. This action addresses our concerns regarding cultural resources at that site. Site 31ON1368, located adjacent to the proposed Douglass Road APE, will be protected by the buffer zone recommended in our letter of June 17, 2006. Thus, we concur with the actions outlined in your letter.

We have reviewed the draft report by SEARCH, Inc. for the Brewster Boulevard alternative. The document presents the results of archaeological survey work within this alternative. Six sites: 31ON1590-ON1595 were recorded. Four of these (31ON1590-ON1593) were determined to be isolated finds. None were recommended as eligible for the National Register of Historic Places. Two (31ON1594 and 31ON1595) were considered archaeological sites and were recommended not eligible for the Register. No further work was recommended for the cultural resources discussed above. We concur with the conclusions and recommendations presented for the Brewster Boulevard alternative.

One site adjacent to the Highway 17 South alternative (31ON482) was relocated and assessed as a part of the archaeological survey. This site was recommended as not eligible for the NRI-IP. No further work was recommended for this site. We concur with the conclusions and recommendations regarding this site.

The report meets our office's guidelines and those of the Secretary of the Interior. There are no specific concerns and/or corrections, which need to be addressed regarding this report. The present version of the document can serve as the final report for this project. Based on the contents of your letter and the results of

ADMINISTRATION  
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the archaeological survey, we concur that the undertaking, as proposed, will not affect any properties eligible for inclusion in the National Register. We recommend clearance for the commencement of this project.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919-733-4763. In all future communication concerning this project, please cite the above-referenced tracking number.

Sincerely,

  
Peter Sandbeck

cc: Rick Richardson, Camp Lejeune  
Amy Probsdorfer, NAVFAC Atlantic  
Bryan Harrell, Southeastern Archaeological Research



UNITED STATES MARINE CORPS

MARINE CORPS BASE

PSC Box 20004

Camp Lejeune, North Carolina 28542-0004

IN REPLY REFER TO:

5090.8

BEMD

JUL 10 2006

Mr. Peter Sandbeck  
Administrator, State Historic Preservation Office  
North Carolina Division of Archives and History  
507 North Blount Street  
Raleigh, North Carolina 27604-1119

Subj: PHASE II OF PRIVATIZATION OF FAMILY HOUSING AT  
MCB CAMP LEJEUNE, ONSLOW COUNTY, NORTH CAROLINA, ER-05-1613

Dear Mr. Sandbeck:

Thank you for your comments on our proposed undertaking as detailed in your letter dated June 17, 2006. As requested in your comments, please find enclosed two copies of the draft archaeological survey report for the Brewster Boulevard alternative site for construction of family housing units at Marine Corps Base (MCB), Camp Lejeune (CL), prepared by Southeastern Archaeological Research, Inc. (SEARCH, Inc.), consultants for MCB, CL. We previously provided a Technical Summary of this work for your initial review. The enclosed report provides additional details of the investigation, which determined that no National Register of Historic Places (NRHP) eligible archaeological sites are located within the proposed Brewster Boulevard alternative's Area of Potential Effect (APE).

As discussed in a June 28, 2006 telephone communication between MCB, CL staff archaeologist, Mr. Rick Richardson, and NCOSA Assistant State Archaeologist, Mr. Lea Abbott, the Highway 17 South alternative has been rejected. Construction of new housing units is no longer proposed for that location, and no impacts to nearby archaeological resources will occur. Also discussed was your concern for potential secondary impacts to archaeological site 31ON1368, located immediately outside of the APE for the Douglass Road alternative. As requested in your comments and discussed during the telephone communication with Mr. Abbott, a fifty (50) foot conservation buffer will be established between the northwestern-most boundary of this archaeological site and the southeastern corner of the Douglass Road APE. In addition, temporary construction fencing will be placed along the western limits of the buffer zone, and no ground disturbing activities will

be allowed within the buffer area or within the boundary of the archaeological site. Close coordination between representatives of Atlantic Marine Corps Communities (AMCC) LLC, the privatization partner, and the MCB,CL staff archaeologist will be carried out to ensure that this buffer will be maintained and that no secondary impacts, either ground disturbing or erosion related, will occur. Also, no portion of the archaeological site will be conveyed through any lease action as a result of the undertaking. The archaeological site and buffer area will remain under the management and control of MCB,CL.

We trust that the aforementioned avoidance measures and the enclosed formal draft report adequately addresses your comments and concerns with our proposed undertaking. At your request, we have included a signature line on this letter for your concurrence with our finding of no historic properties affected, and request that you return a signed copy of this to us as soon as possible.

Should you have any questions concerning this project, please contact Ms. Amy Probsdorfer, Cultural Resources Specialist with NAVFAC Atlantic at (757) 322-4975, or Mr. Rick Richardson, MCB Camp Lejeune, Environmental Management Division, Installations and Environment Department, at (910) 451-7230, or email at Rick.Richardson@usmc.mil. Thank you for your cooperation in this matter.

Sincerely,

*For*   
SCOTT A. BREWER, PE  
Director, Environmental Management  
By direction of  
the Commanding Officer

Enclosure: Two copies of draft report.

**IF YOU CONCUR WITH THE DETERMINATION OF "NO HISTORIC PROPERTIES AFFECTED" FOR PHASE II OF PRIVATIZATION OF FAMILY HOUSING AT MCB CAMP LEJEUNE, PLEASE SIGN BELOW AND RETURN THIS LETTER TO OUR OFFICE.**

---

**Mr. Peter Sandbeck**  
**Administrator**



**North Carolina Department of Cultural Resources**  
**State Historic Preservation Office**

Peter B. Sandbeck, Administrator

Michael E. Basley, Governor  
Lisbeth C. Evans, Secretary  
Jeffrey J. Crow, Deputy Secretary

Office of Archives and History  
Division of Historical Resources  
David Brook, Director

June 17, 2006

Scott A. Brewer  
Director, Environmental Management  
USMC  
PSC Box 20004  
Camp Lejeune, NC 28542-0004

Re: Phase II of Privatization of Family Housing at Marine Corps Base, Camp Lejeune, (5090/8 BEMD),  
Onslow County, ER 05-1613

Dear Mr. Brewer:

Thank you for your letter of May 23, 2006. We have reviewed the documentation associated with the project referenced above and offer the following comments.

Our response is divided between the two components received as part of the documentation, including your letter and an executive summary by SEARCH, INC. Your letter asks for concurrence that Section 106 requirements have been met for the Phase II privatization of family housing at MCB Camp Lejeune. The document from SEARCH serves as a technical summary of archaeological survey work done as part of the Phase II MCAS New River officer housing replacement units and a community center at the Brewster Boulevard alternative tract. The technical summary also provides information on the relocation and assessment of site 31ON482 within the Highway 17 South alternative.

Three new areas are being studied for construction of MCAS New River officers housing and a community center. These include the Douglass Road, Highway 17 South, and Brewster Boulevard alternatives. One site, 31ON1368, is located immediately adjacent to the southern boundary of the Douglass Road alternative. The letter suggests that the site will be avoided. However, a review of the topographic setting of the site relative to the proposed construction area shows it immediately down slope from the proposed development. Given this setting, it is highly likely that the site will be affected by secondary impacts resulting from construction activities (i.e., erosion, upslope drainage issues, collectors, etc.). This site is presently determined as "potentially eligible" based on recent survey work by TRC. For our records a determination of this sort means the site is unassessed in terms of the National Register.

Given the proximity of the site to the proposed undertaking, the likelihood of secondary impacts, and in the event that the Douglass Road alternative is the preferred, we recommend intensive testing of Site 31ON1368 to render a definitive eligibility determination for the site. If the site is determined eligible for inclusion in the National Register, we recommend that effective erosion control infrastructure be built and maintained between the site and the development. We also recommend a buffer zone of at least 50 feet be maintained between the development and the site to minimize potential secondary impacts. We recommend that the site be monitored on a regular basis by

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RESTORATION	515 N. Blount Street, Raleigh NC	4617 Mail Service Center, Raleigh NC 27699-4617	(919)733-6547/715-4801
SURVEY & PLANNING	515 N. Blount Street, Raleigh, NC	4617 Mail Service Center, Raleigh NC 27699-4617	(919)733-6545/715-4801

the Base Archaeologist to insure no secondary impacts on the site. In the event impacts are noted, we recommend that a mitigation plan be developed and implemented for the site.

A similar situation is noted for the Highway 17 South alternative. Four sites, 31ON472/ON472\*\*, 31ON483, 31ON1211, and 31ON1212, are involved for this alternative. In the case of sites 31ON483, 31ON1211, and 31ON1212, the sites are down slope from and surrounded on three sides by the proposed development. Given this setting, it is very highly likely that the sites will be adversely affected by secondary impacts resulting from construction activities. All of these sites are noted as potentially eligible for the National Register. Given the proximity of the sites to the proposed undertaking and the likelihood of secondary impacts, we recommend intensive testing of Sites 31ON472/ON472\*\*, 31ON483, 31ON1211, and 31ON1212 to render a definitive eligibility determination for the sites. If the sites are determined eligible for inclusion in the National Register, we recommend that effective erosion control infrastructure be built and maintained between the sites and the development. We also recommend a buffer zone of at least 50 feet be maintained between the development and the sites to minimize potential secondary impacts to the site. We recommend that the sites be monitored on a regular basis by the Base Archaeologist to insure no secondary impacts on any of the sites. In the event impacts are noted, we recommend that a mitigation plan be developed and implemented for the sites involved.

Also at the Highway 17 alternative, we recommend a minimum buffer zone of 50 feet between site 31ON484\*\* (determined eligible for the NRHP) and the proposed construction. We recommend that the site be monitored on a regular basis by the Base Archaeologist to insure no secondary impacts to the site. In the event impacts are noted, we recommend that a mitigation plan be developed and implemented for the site.

The archaeological survey work reported by SEARCH, Inc. was undertaken within the Brewster Boulevard alternative. According to the technical summary, no eligible sites were located. It was recommended that work within the Brewster Boulevard alternative will not impact significant cultural resources. Based on the initial results of the survey, we concur with the recommendations for the Brewster Boulevard alternative. Within the Highway 17 South alternative, site 31ON482 was relocated and assessed. This site was recommended as not eligible for inclusion in the National Register. We concur that site 31ON482 does not appear to be eligible (based on data from the SEARCH report). However, we will await receipt of the formal draft report, along with the site forms, to provide our final comments regarding compliance with Section 106.

Based on the discussion presented above, we do not concur that there will be no significant historic properties affected as a result of the Phase II project. We reiterate that intensive testing of the sites discussed above is necessary to conclusively determine the affects of this undertaking. We will be happy to assist the Base Archaeologist in the development of a technical Scope of Work for this project.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919-733-4763. In all future communication concerning this project, please cite the above-referenced tracking number.

Sincerely,



Peter Sandbeck

cc: Rick Richardson, USMC  
Amy Probsdorfer, NAVFAC Atlantic



**UNITED STATES MARINE CORPS**  
MARINE CORPS BASE  
PSC Box 20004  
Camp Lejeune, North Carolina 28542-0004

IN REPLY REFER TO:

5090/8

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**MAY 23 2006**

Mr. Peter Sandbeck  
Administrator, State Historic Preservation Office  
North Carolina Division of Archives and History  
507 North Blount Street  
Raleigh, North Carolina 27604-1119

**Subj: PHASE II OF PRIVATIZATION OF FAMILY HOUSING AT  
MCB CAMP LEJEUNE, ONSLOW COUNTY, NORTH CAROLINA**

Dear Mr. Sandbeck:

The Naval facilities Engineering Command, Atlantic (NAVFAC LANT) letter dated January 14, 2005 formally initiated the Section 106 consultation process for the privatization of family housing at Marine Corps Air Station (MCAS) Cherry Point and Marine Corps Base (MCB) Camp Lejeune. As noted in that correspondence, the privatization of family housing is occurring in three phases. The letter established the Area of Potential Effect (APE) and identified historic properties within the APE for all three phases. Your letters dated March 14, 2005 and May 4, 2005 concurred with the defined APE and affected resources. As requested in your May 4, 2005 letter, we are treating the privatization efforts at MCB Camp Lejeune and MCAS Cherry Point as two separate undertakings in order to facilitate your review of the projects. A Programmatic Agreement on the Phase I MCB Camp Lejeune component was executed between our offices in September 2005.

The intent of this letter is to initiate consultation on anticipated effects resulting from the MCB Camp Lejeune Phase II component. Since the Section 106 initiation letter dated January 14, 2005, the Phase II undertaking at Camp Lejeune has changed. We now plan to demolish and replace versus renovate the 110 units of MCAS New River Officer Housing conveyed under Phase I of the project. These units are not eligible for the National Register of Historic Places (NRHP). Three potential sites for the New River replacement housing have been identified as discussed below. In addition, the five officers' quarters in the Stone Bay Rifle Range Historic District originally planned to be conveyed in Phase II have been removed from the PPV project. They are in an area that is under study to

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accommodate increased operational tempo and will be addressed in separate consultation.

The Department of Navy is currently in exclusive negotiations with Atlantic Marine Corps Communities (AMCC) LLC for Phase II, and upon execution of the amended ground lease and associated agreements, AMCC will own, operate, manage, and maintain the Phase II family housing over a 49-year term. None of the housing being conveyed under Phase II is eligible for the NRHP. In Phase II, the affected properties, shown on the attached map (enclosure 1), include the following:

- Watkins Village (60 units)
- Paradise Point, Cape Cods (67 units)
- Paradise Point, Cracker Boxes (100 units)
- Midway Park (161 units)

Three potential sites are being considered for construction of the MCAS New River Officer Housing replacement units and a Community Center. The Area of Potential Effect (APE) now includes the three replacement sites, shown on the attached maps (enclosures 2a-2d), and identified below:

- Site 1: Douglas Road
- Site 2: Highway 17 South
- Site 3: Brewster Boulevard

The Douglass Road site boundary has been drawn to avoid one potentially eligible archaeological site, 31ON1368, in the extreme southeastern corner. Several potentially eligible archaeological sites are located within the vicinity of the Highway 17 South parcel including 31ON472, 31ON481 through 484, and 31ON1211 through 1212. The boundaries for the Highway 17 South potential lease area were drawn to avoid all of the potentially eligible archeological sites. Additional fieldwork recently conducted on Site 31ON482 by SEARCH, Inc., consultants for MCB Camp Lejeune, relocated this site now known to lie outside of the APE, and determined that it is not eligible for listing on the NRHP as was previously recommended by Brockington and Associates, Inc. (Espenshade et al. 1992). A summary of this finding is included in the attached End-of-Fieldwork Report prepared by SEARCH, Inc. A draft report for this fieldwork

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is in preparation and will be forwarded to your office for review in the near future.

Archaeological fieldwork conducted by SEARCH, Inc., at the Brewster Boulevard site high-probability area resulted in the discovery of five isolated artifact finds and one archaeological site. These isolated finds and one site are recommended not eligible for the NRHP, and are discussed in the attached End-of-Fieldwork Report. As mentioned above, a draft report is currently in preparation and will be forwarded for your review in the near future.

As noted in the January 14, 2005 letter, there are no archaeological sites or un-surveyed archaeologically sensitive areas within the Paradise Point or Watkins Village lease boundaries. We previously consulted with your office regarding the recent construction of the new 161 homes at Midway Park which will now be conveyed under Phase II. As noted in our June 2003 letter, an archaeological survey was conducted in this area, and one archaeological site, 31ON1233, was located and recommended not eligible for the NRHP. Although construction was initially planned within this archaeological site boundary, the site is now located on the periphery of the lease area as shown on the attached map (enclosure 3).

Based on the above information, the Navy has determined that there will be no historic properties affected as a result of the Phase II project. This letter is to provide documentation of this finding in accordance with 36 CFR 800.4 and to advise your office that MCB Camp Lejeune is taking no further steps in the Section 106 process for Phase II at Camp Lejeune. Additionally, 36 CFR 800.3 (e) requires development of a plan to involve the public in the Section 106 process. However, our experience is that undertakings of this type that have no effect on historic properties typically do not generate public interest. Therefore, we plan to take no action to seek public comment, but will provide project information to the public upon request and through established Marine Corps National Environmental Policy Act (NEPA) procedures.

Per Section 106 of the National Historic Preservation Act, we request your comments within 30 days of receipt of this letter regarding our finding of no historic properties affected. If you have any questions, please contact Amy Probsdorfer, Cultural

Resources Specialist with NAVFAC Atlantic at (757) 322-4975, or Rick Richardson, MCB Camp Lejeune, Environmental Management Division, Installations and Environment Department, at (910) 451-7230, or email at Rick.Richardson@usmc.mil. Thank you for your cooperation in this matter.

Sincerely,



SCOTT A. BREWER, PE  
Director, Environmental Management  
By direction of  
the Commanding Officer

Enclosures:

- (1) Housing Areas to be Transferred in Phase II
- (2a-2d) Potential Replacement Sites for MCAS New River Officer Housing
- (3) Midway Park Site Map
- (4) Executive Summary, End-of-Fieldwork Report for Archaeological Investigation of Proposed PPV Housing Locations at Marine Corps Base, Camp Lejeune, North Carolina

**IF YOU CONCUR WITH THE DETERMINATION OF "NO HISTORIC PROPERTIES AFFECTED" FOR PHASE II OF PRIVATIZATION OF FAMILY HOUSING AT MCB CAMP LEJEUNE, AND THE PLAN FOR PUBLIC PARTICIPATION, PLEASE SIGN BELOW AND RETURN THIS LETTER TO OUR OFFICE.**

---

Mr. Peter Sandbeck  
Administrator

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

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### Migratory Birds Potentially Occurring In Proposed Project Areas

1	<p>BLACK VULTURE (<i>Coragyps atratus</i>) Status: NCWRC-SC Family: Cathartidae</p>	Open country, dumps, and urban areas.	Resident from southern New York and southern Ohio southward through Texas to Central and South America.	It is more social than the Turkey Vulture, often traveling in large flocks.
2	<p>BALD EAGLE (<i>Haliaeetus leucocephalus</i>) Status: Camp Lejeune's INRMP-T, NCWRC-T Family: Accipitridae</p>	Breeds in forested areas near large bodies of water. Winters in coastal areas, along large rivers, and large unfrozen lakes.	Breeds near water from Alaska throughout Canada and in scattered localities in nearly all of the United States. Also a small number in Mexico. Winters in coastal Alaska and Canada, and throughout lower 48 states. A breeding pair has a nest aboard Camp Lejeune on the New River near the Sneads Ferry Bridge.	Preservation efforts brought populations in the lower 48 states back from near extinction in the mid-20th century. On June 28, 2007 the Interior Department took the American bald eagle off the Endangered Species List. The bald eagle will still be protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.
3	<p>AM. SWAL. T. KITE (<i>Elanoides forficatus</i>) Status: BCC, PIF Family: Accipitridae</p>	Forested regions near marshes or swamps, often bottomland, or riverine forest, also open pine woodland.	Breeds in scattered locations in very southeastern United States; primarily in Florida. Winters in South America. There was a possible range extension into coastal North Carolina at the Cape Fear River in 2003.	Declining since 1900 due to loss of woodland habitat from logging. Now only in portion of former range.
4	<p>AMERICAN KESTREL (<i>Falco sparverius</i>) Status: BCC, PIF Family: Falconidae</p>	Breeds in a variety of open habitats, including meadows, grasslands, deserts, parkland, agricultural fields, urban and suburban areas.	Breeds from Alaska across most of Canada and the United States into Central and South America. Winters in southern portion of breeding range from Canadian border and northern Nebraska and Ohio southward.	Increased greatly with historical deforestation of North America. No significant trend across North America, but some local increases and decreases.
5	<p>COOPERS HAWK (<i>Accipiter cooperii</i>) Status: NCWRC-SC Family: Accipitridae</p>	Breeds in deciduous, mixed, coniferous forests and open woodland. Becoming more common in suburban and urban areas.	Breeds across southern Canada southward to southern United States and into central Mexico. Winters throughout the United States and Mexico.	Listed as threatened or of special concern in a number of states; appears to be adapting to breeding in urban areas, which may help increase populations.
6	<p>LOGGERHEAD SHRIKE (<i>Lanius ludovicianus</i>) Status: NCWRC-SC Family: Laniidae</p>	Open country with some shrubs and trees.	Breeds from central prairie provinces and Canadian border southward throughout the US to Florida and southern Mexico. Winters from very southern Oregon, southern Kansas, Tennessee, and Virginia southward throughout the US to southern Mexico.	Once abundant, but declined drastically through last half of 20th century. Essentially gone from northeastern part of range. Continues to decline throughout the range.
7	<p>BROWN-HD.NHTCH (<i>Sitta pusilla</i>) Status: BCC, PIF</p>	Pine forests, especially in open, mature forests with periodic fires.	Resident in pine forests from eastern Texas and extreme southeastern Oklahoma through the southern coastal states north to Delaware. Also in the Bahamas.	Depends on older pines for food and nesting habitat; declining in areas where these are cut down or logged.
8	<p>BROWN CREEPER (<i>Certhia americana</i>) Status: NCWRC-SC Family: Certhiidae</p>	Coniferous and mixed coniferous-deciduous forests.	Breeds through southern Canada from Alaska to Newfoundland and southward to the western and northern U.S. Spends winters in breeding range and south throughout the US to the Gulf coast and Florida.	Widespread and generally abundant, but habitat loss and degradation is considered a threat to the species in some states, including Kentucky, Illinois, Indiana, Ohio, New Jersey, New York, Idaho, and Montana.

### Migratory Birds Potentially Occurring In Proposed Project Areas

9	<p>WOOD THRUSH (<i>Hylocichla mustelina</i>) Status: BCC, PIF Family: Turdidae</p>	<p>Breeds in the interior and edges of deciduous and mixed forests, in rural to urban areas, generally in cool, moist sites, often near water.</p>	<p>Breeds in eastern North America, from southern Ontario, southwestern Quebec, New Brunswick, and Nova Scotia southward to northern Florida, westward to the eastern parts of the Great Plains in Texas, to eastern Oklahoma, Kansas, Nebraska, and South Dakota. May be slowly expanding its range northward. Winters in lowlands of Central America, from southern Mexico to western Panama; rarely in southeastern United States.</p>	<p>High conservation concern because of steady, long-term population declines; dependent on large tracts of mature forest in some parts of its range, but is tolerant of disturbance in other areas. In winter, it is highly vulnerable to tropical deforestation in the lowlands of Central America.</p>
10	<p>NORTH. PARULA W. (<i>Parula americana</i>) Status: BCC, PIF Family: Parulidae</p>	<p>Deciduous and coniferous forests, usually near water.</p>	<p>Breeds from southern Ontario to Nova Scotia, and northern Minnesota to northern New York and southern New Hampshire. Also from southern Iowa to southern New York southward to eastern Texas and Florida. Winters in southern Mexico to Honduras and in the Caribbean. Some in very southern Florida.</p>	<p>Populations appear stable or increasing. The distribution of the Northern Parula has an unusual break north to south. It may formerly have nested in that zone, and was eradicated. Explanations for the disappearance may be changes in habitat or increasing air pollution.</p>
11	<p>PRAIRIE WARBLER (<i>Dendroica discolor</i>) Status: BCC, PIF Family: Parulidae</p>	<p>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.</p>	<p>Breeds from southern Maine to southern Missouri, southward to northern Florida and eastern Texas. Also resident along coasts of Florida. Winters throughout Florida, Bermuda, the Bahamas, the Greater Antilles, the Virgin Islands. Occurs uncommonly on the coasts of Belize and Honduras.</p>	<p>Declining throughout most of range. Declines largely attributable to loss of breeding habitat through development and natural change of shrubby habitat to forest.</p>
12	<p>WORM-EATING WARB. (<i>Helmitheros vermivorum</i>) Status: PIF Family: Parulidae</p>	<p>Breeds in mature deciduous or mixed deciduous-coniferous forest with patches of dense understory, usually on steep hillside. Winters in tropical forests.</p>	<p>Breeds locally in the Appalachian region, and westward to Missouri and eastern Texas, southward to northwestern Florida. Winters in Central America and in Caribbean.</p>	<p>Dependence on large forests for nesting make it vulnerable to population decreases. Populations seem stable across United States.</p>
13	<p>SWAINSON'S WARB. (<i>Limnothlypis swainsonii</i>) Status: BCC, PIF Family: Parulidae</p>	<p>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.</p>	<p>Breeds locally from northeastern Oklahoma, southern Missouri, southern Illinois, West Virginia, and southern Virginia southward to eastern Texas and northern Florida. Winters in Caribbean and Yucatan Peninsula.</p>	<p>Difficult to assess population numbers, but extreme habitat specificity puts species at risk from habitat loss, both on breeding and wintering grounds.</p>
14	<p>LAUGHING GULL (<i>Larus atricilla</i>) Status: NAWCP Family: Laridae</p>	<p>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.</p>	<p>Breeds from coastal Maine southward along coast to southern Texas. Also breeds in Caribbean and in isolated locations in western Mexico. Winters from North Carolina southward through rest of breeding range to southern South America.</p>	<p>Declines in 1940s from larger gulls displacing them on breeding grounds. Populations increasing in the last 25 years.</p>

### Migratory Birds Potentially Occurring In Proposed Project Areas

15	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.	Breeds from eastern British Columbia and northern California eastward to Newfoundland and New Brunswick, through the northern Great Plains and around the Great Lakes. Winters on coasts from British Columbia and Maine to Mexico, around the Great Lakes, and inland across the southern United States where open water and food are available.	Hunting for the millinery trade nearly extirpated it from parts of range in 1800s. Now common and widespread, and is expanding its breeding range.
16	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.	Breeds across Alaska and northern Canada, southward to the Great Lakes and along the Atlantic Coast to North Carolina. Herring Gull or closely related species breed across Eurasia. Winters from southern Alaska southward to Mexico, and from the Great Lakes and Massachusetts southward into the Caribbean and Central America.	Hunting for the millinery trade nearly extirpated it from parts of range in 1800s. It has come back to historic high population levels in some areas, and is extending its breeding range southward.
17	CHUK-WIL'S-WIDOW ( <i>Caprimulgus carolinensis</i> ) Status: BCC Family: Caprimulgidae	Along edges of coniferous or mixed forests; often along rivers.	Breeds from southern Iowa, Ohio, and Long Island southward to Florida and eastern Texas. Winters from southern Florida and central Mexico southward through Caribbean and Central America to South America.	Eastern populations may be declining slightly.
18	RED-COCKAD.WOOD ( <i>Picoides borealis</i> ) Status: NCWRC-E, PIF Family: Picidae	Open pine forest maintained by frequent fires, especially longleaf pine forests.	Very local resident in southeastern states from southern Virginia to Texas.	Its extreme habitat specificity and loss of breeding habitat caused large population declines and the extinction of numerous colonies in the 20th century. It was listed as a Federal Endangered Species in 1970. A major conservation effort is underway.
19	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.	Breeds from central Alaska to Newfoundland, southward to southern Alberta, northern Iowa, Pennsylvania, and southward in Appalachians to North Carolina. Winters in southeastern quarter of the United States, southward to Panama and the West Indies.	The Yellow-bellied Sapsucker probably benefited with the destruction of mature forests and the creation of forest gaps and increased edge. Populations appear stable.
20	HOODED WARBLER ( <i>Wilsonia citrina</i> ) Status: PIF Family: Parulidae	Dense shrubbery in mature deciduous woodlands, especially near streams.	Breeds from southern Wisconsin, southern Ontario, and Connecticut southward to eastern Texas and northern Florida. Winters in southern Mexico, Central America, and Caribbean.	Common and increasing in some areas.

### Migratory Birds Potentially Occurring In Proposed Project Areas

21	<p>PAINTED BUNTING (<i>Passerina ciris</i>) Status: BCC, PIF Family: Cardinalidae</p>	<p>Open brushlands, thickets, and scattered woodlands. Along Atlantic coast, also in hedges and yards.</p>	<p>Breeds in two different regions. Western population ranges from southern Missouri and Kansas to the Gulf Coast and northern Mexico. Eastern population breeds along the Atlantic coast from central North Carolina to north-central Florida. Western population winters in Mexico southward to Panama. Eastern population winters on the Florida peninsula, the Florida Keys, the Bahamas, and rarely in Cuba.</p>	<p>Breeding Bird Survey data show a steady decline in overall population since 1965. Males are targets of trappers for the cage-bird trade, especially in Mexico.</p>
22	<p>BACHMAN'S SPAR. (<i>Aimophila aestivalis</i>) Status: NCWRC--SC and FSC; BCC, PIF Family: Emberizidae</p>	<p>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.</p>	<p>It breeds throughout most of the Southeast and spends the winter from coastal North Carolina, south through Florida and west from Georgia to southern Arkansas and Louisiana.</p>	<p>Decline due to loss of old-growth pine woods from development and logging. Historic range reduced. Has shown a rangewide decline of 2.8% per year from 1966-2001 according to the Breeding Bird Survey.</p>
23	<p>ORCHARD ORIOLE (<i>Icterus spurius</i>) Status: BCC Family: Icteridae</p>	<p>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.</p>	<p>Breeds from very southern Saskatchewan eastward to southern New Hampshire, southward to western Texas, central Mexico, and northern Florida. Winters from southern Mexico southward through Central America to northwestern South America.</p>	<p>Generally common, but may be declining in some areas due to loss of tropical forests on wintering grounds.</p>

**APPENDIX C**  
**COASTAL CONSISTENCY DETERMINATION**

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Mr. Stephen Rynas, Consistency Program Coordinator  
North Carolina Department of Environment and  
Natural Resources Division of Coastal Management  
400 Commerce Avenue  
Morehead City, North Carolina 28557-3421

Dear Mr. Rynas:

**SUBJECT: COASTAL CONSISTENCY DETERMINATION FOR PHASE IV AND PHASE V  
MILITARY FAMILY HOUSING PUBLIC PRIVATE VENTURE AT  
MARINE CORPS BASE CAMP LEJEUNE**

In accordance with Section 307 (c) (1) of the Coastal Zone Management Act (CZMA) of 1972 as amended, the United States Marine Corps (USMC) has determined that the proposed action to lease Base land to a public private venture (PPV) partner for the construction of housing units, schools, and associated infrastructure and facilities at Marine Corps Base (MCB) Camp Lejeune would not impact North Carolina's coastal zone.

The proposed construction of housing is required primarily to address the existing deficit in suitable housing available for military families. MCB Camp Lejeune proposes to build approximately 850 new housing units for enlisted personnel and two Department of Defense Education Activity (DoDEA) schools at MCB Camp Lejeune and to build approximately 110 new housing units for officers to replace officer housing scheduled for demolition at Marine Corps Air Station (MCAS) New River.

As required by CZMA and in accordance with Marine Corps instructions, the USMC has prepared a Coastal Consistency Determination for this action. The attached Coastal Consistency Determination demonstrates that the proposed construction of homes, schools, and associated infrastructure and facilities would not have any effect on North Carolina's coastal zone.

The USMC respectively requests that the Division of Coastal Management concur with this Coastal Consistency Determination. Please provide your concurrence to Mr. Martin Korenek, Wildlife Biologist, Environmental Conservation Branch, Environmental Management Department. Should you have any questions, please call Mr. Korenek at 910-451-7235 or e-mail at [martin.korenek@usmc.mil](mailto:martin.korenek@usmc.mil).

Sincerely,

John Townson  
Director, Environmental Management  
By direction of the Commanding Officer

**ENCLOSURE:**

Coastal Consistency Determination for the proposed action to lease Base land to a PPV partner for construction of housing units and schools at MCB Camp Lejeune (includes Figures).

**COASTAL CONSISTENCY DETERMINATION  
FOR  
PHASE IV AND V MILITARY FAMILY HOUSING PUBLIC PRIVATE VENTURE  
MARINE CORPS BASE CAMP LEJEUNE  
AND  
MARINE CORPS AIR STATION NEW RIVER, NORTH CAROLINA  
June 2008 – Pre-Final**

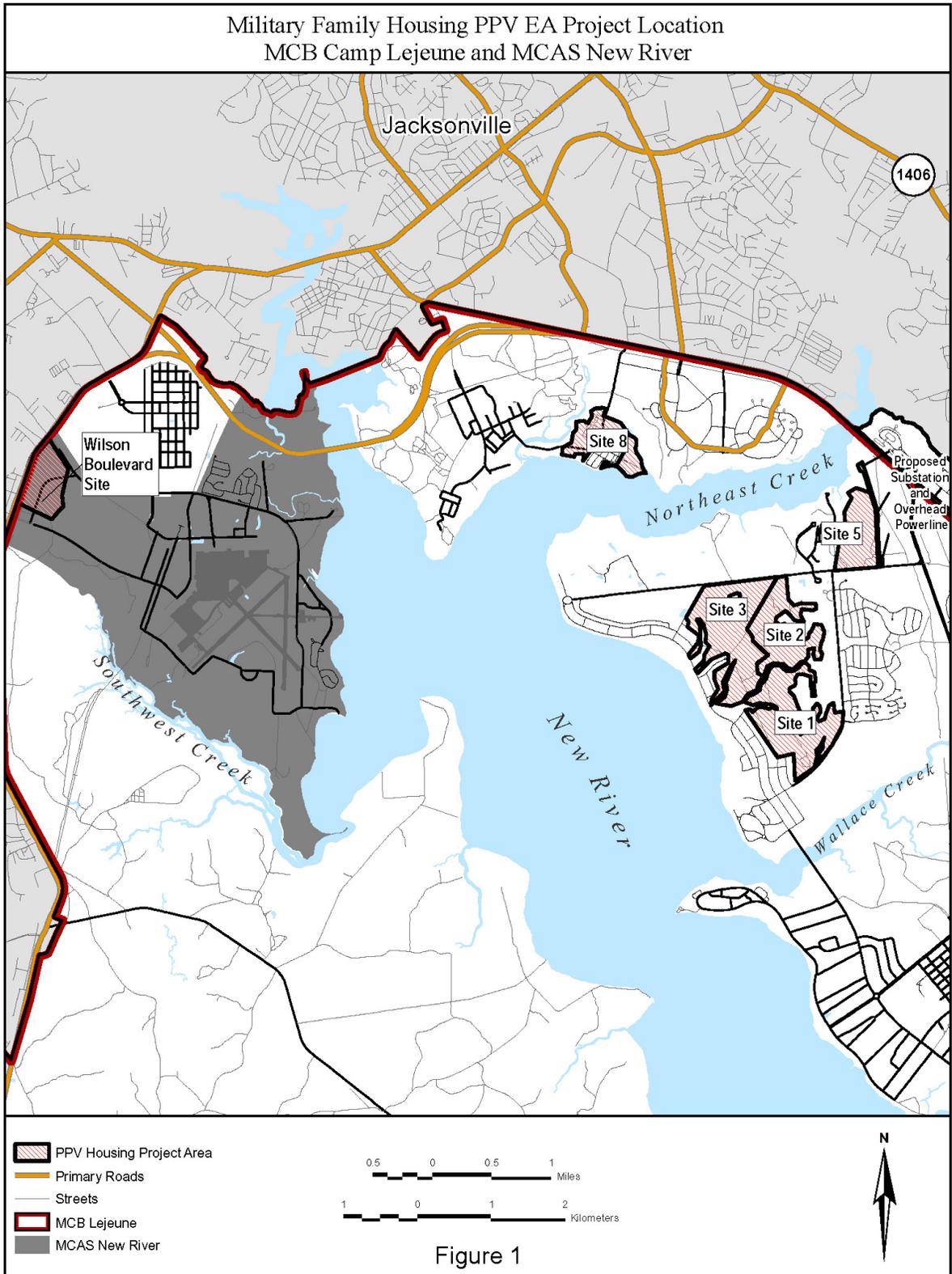
The United States Marine Corps (USMC) has determined that implementing the proposed action would be consistent to the maximum extent practicable with the enforceable policies of North Carolina's approved coastal management program.

## **1.0 FEDERAL AGENCY ACTION**

The USMC proposes to lease Base property to a Public Private Venture (PPV) partner to construct and maintain for a 50-year lease period approximately 850 family housing units for enlisted military personnel, and two Department of Defense Education Activity (DoDEA) Schools at Marine Corps Base (MCB) Camp Lejeune, North Carolina, approximately 110 family housing units for officers, at Marine Corps Air Station (MCAS) New River, North Carolina, and associated infrastructure at both installations (Figure 1 shows the location of the proposed project sites at MCB Camp Lejeune and MCAS New River). The total project area for MCB Camp Lejeune and MCAS New River is approximately 425 hectares (ha) (1,025 acres [ac]).

The Base population is expected to increase in the future, as MCB Camp Lejeune and MCAS New River continue to expand to meet the operational requirements of the Marine Corps mission. The proposed action would facilitate the ability of MCB Camp Lejeune to reduce the existing housing deficit and provide needed capacity in the DoDEA School system to accommodate the new housing area residents. Road improvements would be required to meet the needs of the increased traffic in the areas scoped for the proposed action. Concrete slabs would require demolition in MCB Camp Lejeune Site 8 and in the Wilson Boulevard Site at MCAS New River. Overall, the majority of the affected land is presently undeveloped and used as operations and training facilities.

The purpose and need for this proposed action is to retain the high-quality experienced personnel now in the military by improving the ability of these personnel to obtain affordable, quality housing for their families. Current Department of Defense (DoD) and Department of the Navy (DoN) housing policy as stated in memoranda issued by the Deputy Secretary of Defense on January 8, 2003 and the Assistant Secretary of the Navy (Installations and Environment) on February 25, 2002 underscore the DoD's longstanding reliance on the private sector for housing of military families based on the following: 1) housing is not a core defense function; and 2) adequate housing exists in the private sector to perform the function. Only when the private sector is not capable of providing adequate military family housing will DoD consider the construction, operation, and maintenance of government housing.



The DoD directed that a housing requirement determination process be implemented to establish the appropriate level of housing to be maintained in the DoD's inventory. Based on this directive, the Marine Corps prepared a Family Housing Master Plan Requirements Analysis and a 2007 Housing Market Analysis Update, which determined that a deficit of 3,303 military family housing units existed at MCB Camp Lejeune in 2007. The reported deficit reflects a total permanent-party personnel figure of 43,261, of which 17,200 require family housing. The construction of approximately 850 new homes at MCB Camp Lejeune is proposed to address the existing military family housing deficit. The construction of approximately 110 homes at MCAS New River is proposed to replace the officer housing units that were or will be demolished. The demolition of housing units at MCAS New River was evaluated under the 2006 Supplemental EA for Phase II Privatization of Family Housing.

Finally, MCB Camp Lejeune intends to exercise the option to construct two DoDEA Schools in conjunction with the proposed new homes in accordance with the Findings of Congress under 118 Statute, 2156 Public Law 108-375, October 28, 2004, the National Defense Authorization Act for Fiscal Year 2005. The Congress specified that the Secretaries of the military departments may include the construction of school facilities as one of the ancillary supporting facilities authorized as part of a privatization initiative. The proposed elementary school and middle school would accommodate the dependents of the military personnel who move into the newly constructed homes, as well as some dependents of military personnel already residing in other housing areas on Base.

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

The North Carolina Coastal Area Management Act of 1974 was passed in accordance with the federal Coastal Zone Management Act. Approved by the National Oceanic and Atmospheric Administration in September 1972, it established a cooperative program of coastal area management between local and state governments. Eleven policy guidelines issued by North Carolina for the coastal area are:

- 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
- Policies on ocean mining

The state has designated areas of environmental concern in the following four broad categories: estuarine and ocean systems, ocean hazard areas, public water supplies, and natural and cultural resource areas.

## **2.1 AREAS OF ENVIRONMENTAL CONCERN**

An Area of Environmental Concern (AEC) is an area of natural importance and its classification protects the area from uncontrolled development. AECs include almost all coastal waters and approximately three percent of the land in the 20 coastal counties.

One of the proposed project sites, MCB Camp Lejeune Site 8, is currently known to contain a designated AEC. Approximately 2.75 acres of Site 8 are located within the Coastal Shoreline Area of Environmental Concern (Figure 2). The area of overlap occurs on the eastern and southern edges of Site 8 along Northeast Creek and Frenchmans Creek.

Other coastal resources not designated as AECs in the vicinity of the proposed project sites include primary nursery areas. The eastern portion of MCB Camp Lejeune Site 8 (along Frenchmans Creek) is considered a primary nursery area.

Following is an analysis of the applicability of policies designed to protect areas of environmental concern and the proposed project's consistency with those policies, when applicable.

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

A wetland delineation will be completed in summer of 2008 for the subject sites. National Wetlands Inventory data indicate that the proposed project sites contain forested and shrub wetlands. Impacts would be avoided and minimized and any impacts would be mitigated as required by permit requirements. As stated under 15A NCAC 7M .0700, MCB Camp Lejeune would obtain the necessary permits prior to construction and would implement mitigation as required by the permit conditions. MCB Camp Lejeune has not developed the specific design and mitigation plan because specific impacts are not yet quantifiable. However, land within the proposed project areas or elsewhere on the installation suitable for establishment of wetlands mitigation would be evaluated and used for mitigation where compatible with mission requirements. The use of DoD lands (including the Greater Sandy Run Wetland Mitigation Bank on MCB Camp Lejeune) and lands of other entities would be considered for mitigation purposes when consistent with Environmental Protection Agency, US Army Corps of Engineers, North Carolina Division of Water Quality guidelines, and/or permit provisions.

None of the proposed project sites are currently known to contain a designated Area of Environmental Concern, with the exception of MCB Camp Lejeune Site 8. Approximately 2.75 acres of Site 8 are located within the Coastal Shoreline Area of Environmental Concern. The area of overlap occurs on the eastern and southern edges of Site 8 along Northeast Creek and Frenchmans Creek.

Implementation of stormwater management plans would control surface water runoff. Impacts to water quality would be further avoided by adherence to standard procedures governing hazardous materials and petroleum, oils, and lubricants. The proposed action would be consistent with policies intended to protect estuarine and ocean systems. Specifically, the proposed project would be designed and located to cause the least possible damage to the productivity and integrity of:

- coastal wetlands;
- shellfish beds;
- submerged grass beds;
- spawning and nursery areas;
- important nesting and wintering areas for waterfowl and other wildlife; and
- important natural barriers to erosion, such as marshes, cypress fringes and clay soils.

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

The proposed project sites 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)**

The construction of the proposed housing units, schools, and associated facilities would not affect areas where there are small surface water supply watersheds or public water supply wells. Therefore, policies on protecting public water supplies are not applicable.

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

The proposed action would be consistent with policies designed to protect natural and cultural resource areas of environmental concern.

- **15A NCAC 07H.0505 Coastal Areas That Sustain Remnant Species** – This policy 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.” This policy is not applicable as there are no federally-listed or state-listed threatened or endangered species located within the proposed project sites, and the proposed project sites are not located within areas designated by MCB Camp Lejeune as future habitat for red-cockaded woodpeckers.
- **15A NCAC 07H.0506 Coastal Complex Natural Areas** – This policy 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 limits of the proposed project sites; therefore, this policy is not applicable.
- **15A NCAC 07H.0507 Unique Coastal Geologic Formations** – This policy 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 resources.” This policy is not applicable as no unique geologic formations are designated on Base.
- **15A NCAC 07H.0508 Use Standards** – This policy defines and establishes use standards for development in designated fragile coastal natural or cultural areas. The proposed project sites do not contain and are not located within designated fragile coastal natural or cultural resource areas; therefore, this policy is not applicable.

- **15A NCAC 07H.0509 Significant Coastal Archeological Resource Areas** – This policy 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.” No historic resources (i.e., buildings, monuments) are located on the proposed project sites. MCB Camp Lejeune assessed two sites (one on Site 5 and one on Site 8) and determined that they were ineligible for inclusion on the National Register of Historic Places. The results of the eligibility assessment have been coordinated with the State Historic Preservation Office.
- **15A NCAC 07H.0510 Significant Coastal Historic Architectural Resources** – This policy 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 known significant coastal historic architectural resources are located within the proposed project sites; therefore, this policy is not applicable.

**Table 1 Federally Listed Species Potentially Occurring at MCB Camp Lejeune and MCAS New River**

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 meladus</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
American alligator <sup>1</sup>	<i>Alligator mississippiensis</i>	Threatened

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

Source: MCB Camp Lejeune 2007a.

**Table 2 State Listed Species Potentially Occurring at MCB Camp Lejeune and MCAS New River**

Common Name	Scientific Name	State Status
Tennessee Bladder Fern	<i>Cystopteris tennesseensis</i>	Endangered
Hirsts' Panic Grass	<i>Dichanthelium hirstii</i>	Endangered
Golden Crest	<i>Lophiola aurea</i>	Endangered
Rough-leaved Loosestrife	<i>Lysmachia asperulifolia</i>	Endangered
Pinebarren Smokegrass	<i>Muhlenbergia torreyana</i>	Endangered
Carolina Grass-of-Parnassus	<i>Parnassia caroliniana</i>	Endangered
Yellow Fringeless Orchid	<i>Platanthera integra</i>	Threatened
Carolina Goldenrod	<i>Solidago pulchra</i>	Endangered
Dwarf Bladderwort	<i>Utricularia olivacea</i>	Threatened
Bald Eagle <sup>1</sup>	<i>Haliaeetus leucocephalus</i>	Threatened
Red-cockaded Woodpecker	<i>Picoides borealis</i>	Endangered
Rafinesque's Big-eared Bat	<i>Corynorhinus rafinesquii</i>	Species of Concern
Eastern Woodrat	<i>Neotoma floridana floridana</i>	Threatened
Eastern Diamondback Rattlesnake	<i>Crotalus adamanteus</i>	Endangered
Timber Rattlesnake	<i>Crotalus horridus</i>	Species of Concern
Carolina Diamondback Terrapin	<i>Malaclemys terrapin centrata</i>	Species of Concern
Eastern Coral Snake	<i>Micrurus fulvius</i>	Endangered
Pigmy Rattlesnake	<i>Sistrurus miliarius</i>	Species of Concern

<sup>1</sup> Bald eagle 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.

Source: MCB Camp Lejeune, 2007a

## **2.2 GENERAL POLICY GUIDELINES**

Section 2.0 above contains a list of eleven general policy guidelines issued by North Carolina for the coastal area. Following is an analysis of the applicability of these policies to the proposed construction of homes, schools, and associated infrastructure and facilities at MCB Camp Lejeune and MCAS New River and the proposed action's consistency with those policies, when applicable. Other resources at MCB Camp Lejeune and MCAS New River such as wetlands and threatened and endangered species are also discussed. Figure 2 provides an overview of the Coastal and Inland Shoreline Areas of Environmental Concern.

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

No ocean or estuarine shorelines are included in the proposed project sites for the proposed action; therefore, these policies are not applicable.

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

MCB Camp Lejeune is a military complex which has historically not provided public access to the shorefront. The proposed construction activities would not change the status of the public's right-of-access to ocean or estuarine shorefront since the public is not presently allowed to access. Therefore, these policies are not applicable.

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

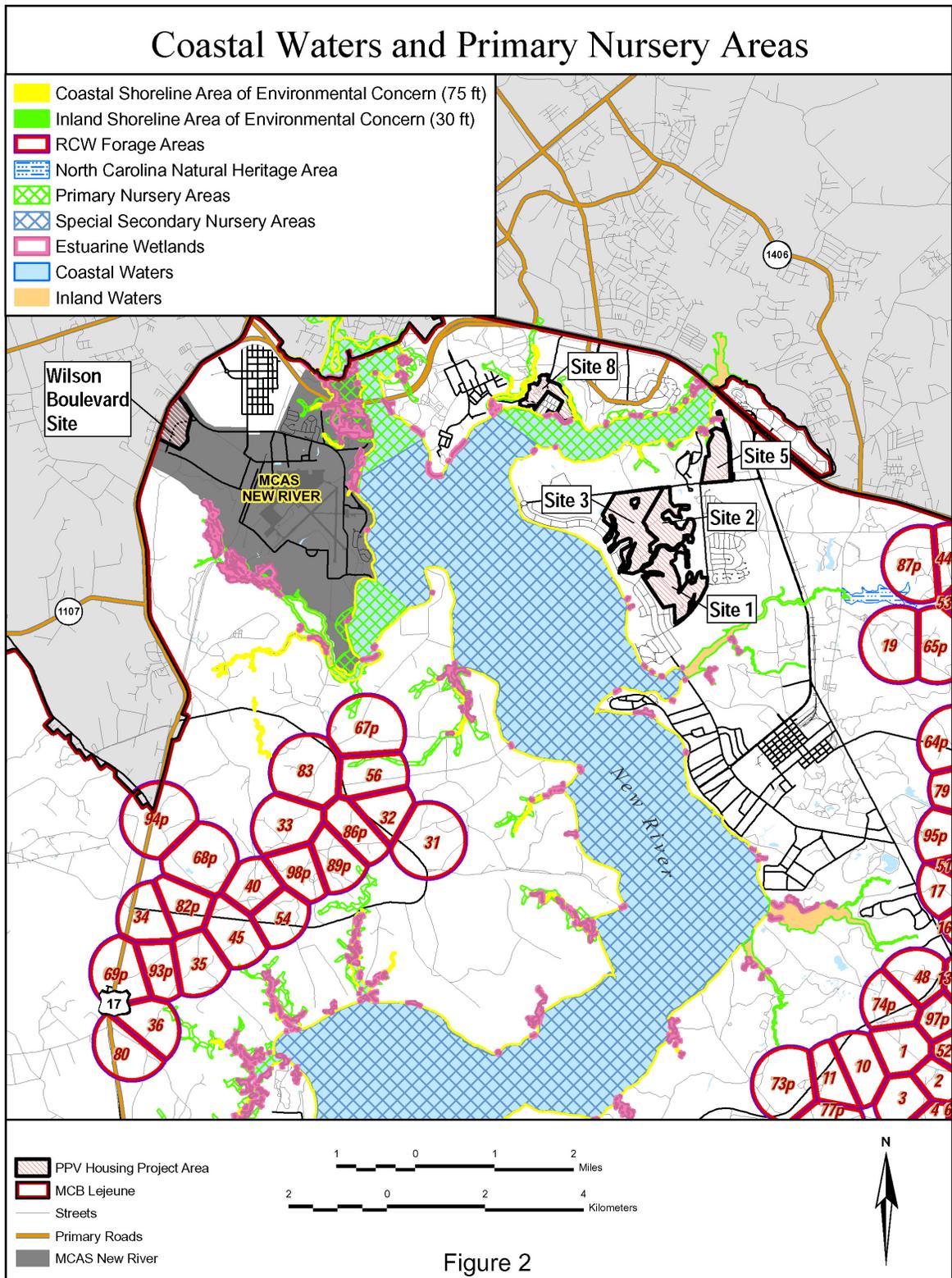
The proposed action does not involve the development of any major energy facilities. As a result, these policies are not applicable.

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

MCB Camp Lejeune has prepared a contingency plan for disasters and in the event of destructive weather. MCB Camp Lejeune Base Order P3440.6E Destructive Weather Manual addresses how MCB Camp Lejeune would prepare for and respond to a potential disaster. The manual addresses 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; prescribes the basic warnings and conditions of readiness for destructive weather; provides the capstone doctrine for United States Army and USMC domestic support operations; provides general information for planning and conducting such operations; and identifies relationships between Federal, state, and local organizations, and military services. The proposed action would be consistent with this policy.

### **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, "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 also be minimized through 1) proper site planning, 2) site selection, 3) compliance with development standards, and 4) creation/restoration of coastal resources. As one final note: There is no reasonable or prudent alternate design or location for the project that would avoid the losses to be mitigated.

There would be no specific mitigation for upland forested habitat and wildlife losses due to development of this site. The proposed site development and construction of housing areas and schools would require the clearing of approximately 1 ha (3 ac) of long leaf pine, 88 ha (218 ac) of loblolly pine, 25 ha (62 ac) of loblolly pine/mixed hardwood, 33 ha (82 ac) of mixed hardwood, and 17 ha (42 ac) of mixed hardwood/loblolly pine.

The loss of upland forest habitat on this site 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 1546 ha (3,820 ac) of coastal lands identified by state, federal, and non-governmental partners as having significant or unique natural resources. The Marine Corps 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 conceptual plans for the housing areas, schools, and associated infrastructure at MCB Camp Lejeune and MCAS New River would be prepared to avoid and minimize impacts to jurisdictional wetlands and waters of the U.S. at the installations. MCAS New River and MCB Camp Lejeune would implement the respective conceptual plan in order to avoid impacts to wetlands and waters. Should permits be required, the Marine Corps would obtain the necessary permits prior to construction and would implement mitigation as required by the permit conditions.

The proposed construction projects would be designed to avoid impacts to wetlands and waters of the United States. Construction of all buildings, facilities and related amenities would avoid to the maximum degree feasible, wetlands destruction or degradation regardless of wetland size or legal necessity for a permit. Any facility requirement that cannot be sited to avoid wetlands would be designed to minimize wetlands degradation and would include compensatory mitigation as required by wetland regulatory agencies. Land within the project area or elsewhere on the installation suitable for establishment of wetlands mitigation may be evaluated and used for mitigation where compatible with mission requirements. The use of DoD lands (including the Greater Sandy Run Wetland Mitigation Bank on MCB Camp Lejeune) and lands of other entities would be considered for mitigation purposes when consistent

with Environmental Protection Agency, U.S. Army Corps of Engineers, North Carolina Division of Water Quality guidelines, and/or permit provisions. The Marine Corps would obtain the appropriate wetland permits prior to construction, and would implement mitigation as required by wetland permit conditions.

Wetlands outside the project area would be protected from direct and indirect impacts. These areas would remain forested and be managed in accordance with the installation's state and federal agency-approved, Integrated Natural Resources Management Plan (INRMP).

In addition, construction effects would be controlled using standard management practices such as routine sweeping and wetting of exposed soils to reduce air emissions.

If during construction and site grading any site of potential historical or archaeological significance is encountered, the installation commander would be notified. The unit commander would order actions in the vicinity halted and the area marked. The unit commander 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 to meet the requirements of the Base's Stormwater Pollution Prevention Plan. Marine Corps Order P5090.2A, Change 1, Chapter 11, Section 11201 Paragraph 2. requires the use of Native Plants in Landscaping. It states "Each installation shall use environmentally and economically beneficial landscaping practices. Each installation shall, to the extent practicable, use regionally-native plants for landscaping, soil conservation, water conservation projects, and other natural resources management projects. Guidance for implementing this policy is contained in references (ac) and sections 2(d) and 3(a) of reference (ad)." "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." Therefore, the proposed action would be consistent with this policy.

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

The proposed construction activities would not result in significant 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 in 2008.

Under the National Pollutant Discharge Elimination System Phase II Stormwater Management Plan, the proposed action requires that best management practices 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 sediment controls. Prior to construction, approval would be obtained from the North Carolina Department of Environment and Natural Resources on all plans. Erosion and sediment control devices could include sediment fences, silt 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 duration of the project.

As a result, the proposed action is not expected to impair coastal water quality. The proposed construction projects at MCB Camp Lejeune Site 8 would be designed to avoid activities in the primary nursery areas (Figure 2). Implementation of the proposed action would be consistent with coastal water quality policies.

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

The proposed action does not involve the use of coastal airspace; 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- 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 MANAGEMENT POLICIES**

The Coastal Area Management Act required local governments in each of the 20 coastal counties in the state to prepare, implement, and enforce a land use plan and ordinances consistent with established state and federal policies. Specifically, local 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, each plan becomes part of the *North Carolina Coastal Management Plan*.

Onslow County adopted its Land Use plan in conformity with the CAMA in 2000, and is currently updating the plan. The *Citizens' Comprehensive Plan for Onslow County*, adopted in 2003, also addresses land use planning in relation to the CAMA. Table 3 contains a list of Onslow County's comprehensive plan policies and their applicability to the proposed action.

**Table 3 Onslow County Comprehensive Plan Policies**

<b>Land Use and Development Policies</b>	<b>Applicability</b>
Preferred Development Pattern	Consistent
Housing and Neighborhood Development	Consistent
Commercial and Office Development	Not Applicable
Industrial Development	Not Applicable
Agricultural and Rural Area Preservation	Not Applicable
Waterfront and Waterborne Development	Not Applicable
<b>Infrastructure and Service Policies</b>	<b>Applicability</b>
Transportation	Consistent
Water and Sewer Services	Consistent
Stormwater Management, Drainage and Flooding	Consistent
Solid Waste Management	Consistent
<b>Natural Resources Management and Use Policies</b>	<b>Applicability</b>
Areas of Environmental Concern	Consistent
Estuarine and Ocean Resources	Consistent
Ocean Hazard System of Areas of Environmental Concern	Not Applicable
Public Water Supply Areas of Environmental Concern	Not Applicable
Natural and Cultural Resource Areas	Consistent
Other Important Natural Resource Areas	Consistent
Water Resources, Surface and Ground	Consistent
Wetlands and Hydric Soils	Consistent
<b>Economy and Culture Policies</b>	<b>Applicability</b>
Economic Development	Not Applicable
The Military and the Community	Consistent
Educational Facilities	Consistent
Parks and Recreation Facilities	Consistent
Cultural History, Historic Preservation/Revitalization	Consistent
Community Appearance	Consistent

#### 4.0 CONCLUSION

In conclusion, after careful consideration of the proposed action, the Marine Corps has determined that implementing the proposed action in conjunction with proposed mitigation would be fully consistent with the relevant enforceable policies of North Carolina’s Coastal Management Program.