

FINDING OF NO SIGNIFICANT IMPACT

**WALLACE CREEK REGIMENTAL AREA
MARINE CORPS BASE, CAMP LEJEUNE
ONSLOW COUNTY, NORTH CAROLINA**

Responsible Officer:

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

Point of Contact:

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August 2008

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WALLACE CREEK REGIMENTAL AREA
MARINE CORPS BASE, CAMP LEJEUNE, ONSLOW COUNTY, NORTH CAROLINA**

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

MCB Camp Lejeune proposes to construct a new regimental complex in the Wallace Creek area of MCB Camp Lejeune for approximately 4,000 personnel. Approximately 2,100 of these personnel are newly incoming to the MCB Camp Lejeune vicinity. This complex includes twenty-one military construction projects.

The total approximate area of these proposed construction projects is 177,421 square meters (sq m) (1,909,744 square feet [sq ft]). However, many will be multistory buildings; therefore the total building footprint is expected to be approximately 80,728 sq m (868,949 sq ft). Development of these facilities will involve the removal of timber, clearing and grubbing, earthwork, fill, and grading on approximately 122 hectares (ha) (302 acres [ac]), which is slightly more than half of the total project area of 223 ha (551 ac).

Several infrastructure and utility features will be constructed and installed within the complex. Paved parking lots will cover approximately 24.1 ha (59.5 ac). A new road will be constructed to connect Parachute Tower Road with Birch Street. This road will include a culvert to cross Beaver Dam Creek. Birch Street will be widened to four lanes from its intersection with McHugh Boulevard to the existing four-lane section of Birch Street for a length of approximately 1.3 km (0.8 mi).

New utilities will include: steam distribution, telephone, fiber optic, natural gas lines, fire protection waterlines, fire hydrants, an elevated water tank with water distribution lines, and wastewater lines. Sidewalks around buildings will cover approximately 9,384 sq m (101,009 sq ft). Stormwater ponds will total about 3 ha (7 ac) in size. The following facilities will be demolished within the complex project area: pesticide storage facility and associated structures, military working dog kennels, and recreational skeet range.

The influx of 2,100 personnel will represent about a 5 percent increase from the existing 42,241 active duty personnel at MCB Camp Lejeune and MCAS New River. The total incoming population is expected to be 4,063, which includes the 2,100 active duty personnel and 1,963 family members, who will be new to the tri-county region (Onslow, Pender, and Carteret Counties).

The EA addresses the proposed action and the No Action Alternative, along with the rationale for several other alternatives that were considered but dismissed. The proposed action is the preferred alternative. The EA demonstrates that the proposed action will have some adverse environmental impacts, but none are considered to be significant.

The Marine Corps has determined that implementing the proposed action will be fully consistent with the applicable policies of the North Carolina Coastal Area Management Act. The Division of Coastal Management concurred with this determination on June 23, 2008.

The total population gain of a 4,063 persons will represent a 1.5 percent increase in the existing population of the tri-county region (Onslow, Carteret, and Pender Counties). Total regional economic impact of the construction activity will be an estimated \$913.8 million in expenditures supporting an estimated total of 12,866 full- and part-time jobs. The economic gains for the region associated with the gain in jobs for the Wallace Creek Regimental Area will continue for the long-term. The induced and indirect impacts will be realized in a variety of economic sectors. There will be no significant impacts to demographics or income and employment.

Twenty-seven bachelor enlisted quarters will be constructed within the regimental complex. At least 854 units of off-base housing will be needed in the tri-county region to accommodate incoming military families. Given the 17 percent vacancy rate for area housing in the tri-county area, the community housing could meet the expected demand for off-base housing and no significant impacts to housing are expected.

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

The demand for fire protection and law enforcement will continue to be met by MCB Camp Lejeune. Impacts to emergency services in the community as a result of in-migration will be minor. A medical/dental clinic will be constructed to serve the personnel working within the Wallace Creek Regimental Area. Demand for and provision of health care services will increase slightly as a result of the population gain. Impacts on area hospitals will be minor. No significant impacts are expected to emergency services or hospitals.

There will be an increase of approximately 787 school-aged children, 708 of whom will likely attend off-base schools. The estimated increase in school-aged children could result in overcrowding because schools within the tri-county region are operating near, at, or in excess of their capacities. Onslow County Schools has initiated a redistricting process that will serve to balance elementary school populations by moving children from overcrowded schools to ones with available capacity. In addition, two new schools are being constructed that will accommodate 765 and 800 students respectively. Given the phasing of the proposed action and the increase in elementary school capacities, impacts to school are not expected to be significant.

The recreational skeet range will be demolished. MCB Camp Lejeune has recently identified a new location for the skeet range that is outside of the proposed Wallace Creek project area. There will be no significant impacts to on- or off-base recreational facilities.

Daily traffic to the Wallace Creek Regimental Area project area will increase due to additional commuters. This increase in traffic is not expected to result in a significant impact because of the proposed additional roads and other roadway improvements.

Short- and long-term impacts to air quality for criteria pollutants will not be significant. Minor, short-term impacts will be related to emissions from workers' privately owned vehicles, mobile sources used at the site, and from fugitive dust emissions. These impacts will be temporary in nature and will cease following the completion of construction activities. There will be minor long-term impacts to air quality as a result of privately owned vehicles of Marines commuting from areas off-base and from the operation of standard heating equipment in the newly constructed facilities.

Noise generating activities will occur during the construction phase of the project from construction equipment operating at the site and construction/delivery vehicles traveling to and from the site. Noise generated during construction will be similar to noise generated by other construction projects on the installation and is not considered significant.

No significant impacts to the supply or capacity of utilities will result from the operation of the regimental complex. Additional water and wastewater demand is well within existing system capabilities. The Progress Energy Company is expected to be able to meet the demand for additional electricity for the regimental complex. Piedmont Natural Gas will provide natural gas to the regimental complex.

Solid waste generated during the construction, operation, and maintenance of the regimental complex will be disposed of at the Base landfill on Piney Green Road. No significant impacts are expected.

Stormwater at the proposed Wallace Creek Regimental Area will be managed and controlled in accordance with State-approved erosion and sedimentation control plans and stormwater permits. Development of facilities will result in approximately 38 ha (94 ac) of new impervious surfaces. Approximately 3 ha (7 ac) of stormwater ponds will be constructed within the project area to control this increase in stormwater. No significant impacts are expected.

No historic properties will be affected by the proposed action. There are no archaeological sites eligible for the NRHP within the project area.

No significant impacts to geology, topography, and soils will occur. Minor impacts to existing topography will occur during clearing and grading of the project area. During construction, soils at the site will experience short term impacts through clearing, grading, compaction, and

potential erosion. All affected soils will eventually be covered with impervious surfaces or vegetation, preventing long-term erosion.

Construction activities will have minimal adverse effect on surface waters. Appropriate BMPs will be used both during construction and during the long-term operation and maintenance of the complex. The BMPs will ensure removal of suspended particulates prior to surface runoff entering adjacent surface waters. MCB Camp Lejeune will prevent contamination of water resources by properly storing all fuel and maintaining hazardous materials storage areas.

New road construction and the widening of Birch Road have the potential to adversely impact approximately 0.09 ha (0.22 ac) of wetlands and approximately 17 meters (56 feet) of intermittent and perennial streams. MCB Camp Lejeune will mitigate impacts to wetlands and streams in accordance with permit conditions to satisfy mitigation requirements. Development will occupy approximately 0.09 ha (0.22 ac) of the Wallace Creek floodplain, which is not considered to be a significant impact.

Forest loss will not be significant. Up to 64 ha (158 ac) of forested habitat will be permanently removed and thus no longer serve as habitat or be available for future timber commodity production. The affected forested area represents less than one percent of the Base's total forested land.

No significant effects are expected to wildlife, threatened and endangered species or migratory bird populations. Minor impacts to migratory birds and other wildlife species will occur due to loss of habitat. Population level effects will not occur because the proposed action area represents a small portion of the habitat available on a base-wide and regional basis. There will be no impact to threatened and endangered species as none of the listed species or their habitats are known to occur within the proposed project area.

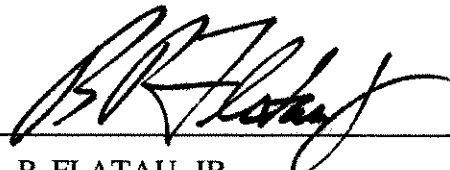
Three installation restoration (IR) sites are within the project area: IR Site 19, a former Naval Research Lab dump; IR Site 20, a former Naval Research Lab incinerator; and IR Site 25, a former Base incinerator. The Base skeet range, ASR Site 2.82, is an active range located within the project area. A former practice hand grenade range, ASR Site 2.78, is located within the project area. Remediation of contamination will be completed prior to construction activities where warranted. An additional radiological investigation has been recommended for IR Site 19 by the Naval Sea Systems Command Detachment and is programmed for Fiscal Year 2008. An anomaly investigation for ASR Site 2.82 is also programmed for Fiscal Year 2008 to determine if any unexploded ordnance exists at the site. Usual BMPs will be employed in the handling, removal, and disposal of potentially hazardous substances. If necessary, MCB Camp Lejeune will obtain appropriate approvals from US Environmental Protection Agency and the North Carolina Department of Environmental and Natural Resources regarding development at the project area. There will not be significant adverse impacts from hazardous materials, waste management, or existing contaminated sites.

The following mitigation measures will be implemented as part of the proposed action:

- Construction effects will 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 will be notified. The unit commander will order actions in the vicinity halted and the area marked. The unit commander will immediately notify the Base archaeologist at telephone (910) 451-7230
- BMPs will be used to avoid and minimize the release of sediments into stormwater. Mitigation plans will 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 will be designed to avoid and minimize impacts to wetlands and waters of the US

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

20 Aug 08
Date



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

ENVIRONMENTAL ASSESSMENT

Wallace Creek Regimental Area

Marine Corps Base Camp Lejeune
Onslow County, North Carolina



Cpl Brian M Henner, USMC



August 2008



Sgt Brian Henner, USMC

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ENVIRONMENTAL ASSESSMENT
WALLACE CREEK REGIMENTAL AREA
MARINE CORPS BASE, CAMP LEJEUNE
ONSLOW COUNTY, NORTH CAROLINA

Responsible Officer:

Commanding Officer
Marine Corps Base
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August 2008

Acronyms and Abbreviations

ac	acres	NSW	nutrient sensitive waters
AEC	Areas of Environmental Concern	PM	particulate matter
BEQ	Bachelor Enlisted Quarters	ppm	parts per million
BMP	best management practice	PRGs	preliminary remediation goals
CAA	Clean Air Act	RASO	Radiological Affairs Support Office
CAAA	Clean Air Act Amendments	RCRA	Resource Conservation and Recovery Act
CAMA	Coastal Area Management Act	RCW	red-cockaded woodpecker
CFR	Code of Federal Regulations	ROI	region of influence
CZMA	Coastal Zone Management Act	sq ft	square feet
dB	decibel	sq m	square meters
dBc	C-weighted decibel	SWMU	solid waste management unit
DoD	Department of Defense	US	United States
DoN	Department of the Navy	USACHPPM	US Army Center for Health Promotion and Preventative Medicine
EA	Environmental Assessment	USEPA	US Environmental Protection Agency
EIS	Environmental Impact Statement	USFWS	US Fish and Wildlife Service
EMS	Emergency Medical Services	USMC	United State Marine Corps
FONSI	Finding of No Significant Impact	UST	underground storage tank
ft	feet	WTP	water treatment plant
FY	Fiscal Year	WWTP	wastewater treatment plant
ha	hectares		
HQW	high quality waters		
INRMP	Integrated Natural Resources Management Plan		
IR	Installation Restoration		
km	kilometer		
LOS	Level of Service		
m	meter		
MARSOC	Marine Special Operation Command		
MBTA	Migratory Bird Treaty Act		
MCB	Marine Corps Base		
MCO	Marine Corps Order		
$\mu\text{g}/\text{m}^3$	micrograms per cubic meter		
mg	milligram		
mgd	million gallons per day		
mi	mile		
MILCON	Military Construction		
mld	million liters per day		
NAAQS	National Ambient Air Quality Standards		
NAVFAC	Naval Facilities Engineering Command		
NC	North Carolina		
NCAC	North Carolina Administrative Code		
NCDENR	North Carolina Department of Environment and Natural Resources		
NC SHPO	North Carolina State Historic Preservation Office		
NEPA	National Environmental Policy Act		
NPDES	National Pollutant Discharge Elimination System		
NRHP	National Register of Historic Places		

EXECUTIVE SUMMARY

MCB Camp Lejeune proposes to construct a new regimental complex in the Wallace Creek area of MCB Camp Lejeune for approximately 4,000 personnel. Approximately 2,100 of these personnel are newly incoming to the MCB Camp Lejeune vicinity. This complex includes twenty-one military construction projects.

ES.1 DESCRIPTION OF THE PROPOSED ACTION

The Wallace Creek project area is approximately 223 hectares (ha) (551 acres [ac]). The proposed action would involve construction on slightly more than half of this project area, roughly 122 ha (302 ac). The current preferred layout uses a centralized approach to the collocated battalion and regimental facilities with shared infrastructure and supporting facilities. In this way, less land would be developed than a scenario with four separate battalion compounds and regimental area.

The four battalions would be arranged around a central operational/maintenance area, where the motor transportation shops, electronic/communication maintenance shops, and armories are proposed to be located. The proposed indoor marksmanship trainers and supply warehouses are also configured centrally, in order to readily serve the entire regiment. The proposed messhall and medical/dental clinic are located where they would be convenient to other patrons outside the regimental area. Finally, each battalion and company headquarters would be located near the bachelor enlisted quarters that would house the Marines assigned to that battalion.

ES.2 ALTERNATIVES CONSIDERED

Several alternatives for fulfilling the purpose and need of the proposed action were considered to provide adequate facilities for the additional personnel at MCB Camp Lejeune. These alternatives were evaluated based on the following factors:

1. The site must be large enough to accommodate facility requirements for a four-battalion regimental complex that keeps all four battalions together with their Regimental Headquarters.
2. The regiment must be in the vicinity of its command, the 2d Marine Division, which is in the Hadnot Point area.
3. The location must not displace existing ranges and maneuver areas.
4. The alternative must provide adequate operational space in accordance with anti-terrorism/force protection standards.

First, the USMC considered renovating and modernizing existing facilities. However, a review of existing facilities at MCB Camp Lejeune revealed that none met the basic facilities requirements for the new units, even with modernization or renovation. Moreover, there are no existing facilities available for renovation in the Hadnot Point area.

Next, the USMC considered leasing facilities off-base in the local community. In order to meet the space requirements, facilities would need to have approximately 178,000 square meters (approximately 1,916,000 square feet), in addition to parking. Leasing would involve the daily transport of personnel and equipment. This daily transport requires increased logistical effort that would negatively affect training and ultimately mission effectiveness. Even considering these logistical problems, no suitable off-base facilities are available that could provide for housing and operations with appropriate anti-terrorism/force protection measures. As a result, on-base construction is preferred and off-base alternatives were dismissed from further study.

Alternative site locations for the four-battalion regimental area were identified at Wallace Creek East and Cogdel's Creek. Siting the required facilities and infrastructure at Wallace Creek East would be impeded by a major power/natural gas utility easement through the site (evaluation factors 1 and 4). In addition, Wallace Creek East was not large enough (only 106 ha [262 ac]) to fit all four battalions with Regimental Headquarters (evaluation factor 1). Therefore, this site was eliminated as a viable alternative.

Cogdel's Creek was assessed as a potential site for the regimental area. This area was dismissed from further consideration because it was not large enough (only 116 ha [288 ac]) to fit all four battalions with Regimental Headquarters (evaluation factor 1). Furthermore, there are tanks trails at the site that would need to be relocated to have room for the proposed facilities (evaluation factor 3).

ES.3 ENVIRONMENTAL IMPACT OF THE PROPOSED ACTION

Implementation of the proposed action would have some minor adverse environmental impacts. Construction of proposed facilities, infrastructure, and utilities would result in a change to the project area from mixed forest to developed areas. This change would be consistent with the designated land use classification, which is operational and training facilities. This change to developed areas would match nearby developed land use in Hadnot Point. Some existing facilities would need to be demolished in order to make room for the proposed facilities. These include the pesticide storage facility and associated structures, military working dog kennels, and recreational skeet range. Through the environmental assessment process, the Marine Corps has determined that implementing the proposed action would be fully consistent with the applicable policies of the North Carolina Coastal Area Management Act.

The 2,100 new personnel associated with the proposed action would represent about a 5 percent increase from the existing 42,241 active duty personnel at Camp Lejeune. There would be approximately 1,963 dependents associated with the proposed action. This total population gain (4,063 persons) would represent a 1.5 percent increase in the existing tri-county (Onslow, Carteret, and Pender Counties) region population. Total regional economic impact of the construction activity would be \$913.8 million in expenditures supporting an estimated total of 12,866 full- and part-time jobs. Once the funds are used for construction of the four-battalion regimental complex in the Wallace Creek area, these dollars would no longer be circulating through the regional economy and the economic gains would no longer be realized. The economic gains for the region associated with the gain in jobs for the Wallace Creek Regimental

Area would continue for the long-term. The induced and indirect impacts would be realized in a variety of economic sectors.

There would be construction of 27 bachelor enlisted quarters under the proposed action. At least 854 units of off-base housing would be needed in the tri-county region to accommodate incoming military families. However, given the 17 percent vacancy rate for area housing in the tri-county area, the community housing could meet the expected demand for off-base housing.

As evaluated in accordance with Executive Orders 12898 and 13045, 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, including minorities, low-income populations, and children.

Overall, the demand for fire protection and law enforcement would continue to be met by MCB Camp Lejeune. Impacts to emergency services in the community as a result of in-migration would be minor. A medical/dental clinic would be constructed as part of the proposed action to serve the personnel working within the Wallace Creek Regimental Area. The clinic would provide primary medical and dental care, preventative medicine, acute care, and deployment health assessments. Demand for and provision of health care services would increase slightly as a result of the population gain associated with the proposed action; however, impacts on area hospitals are expected to be minor. There would be an increase of approximately 787 school-aged children, 708 of which would likely attend off-base schools. The estimated increase in school-aged children would result in overcrowding because schools within the tri-county region are operating near, at, or in excess of their capacities. Onslow County Schools has initiated a redistricting process that will serve to balance elementary school populations by moving children from overcrowded schools to ones with excess capacity. In addition, two new schools are being constructed: Meadow View Elementary is scheduled to open in August 2008 with a capacity of 765 students and Gum Branch Road Elementary School will open in 2009 with a capacity of 607 students.

An indoor fitness facility would be constructed under the proposed action. The facility would provide exercise areas, space for equipment and gear storage, laundry facility, and shower and locker areas. Under the proposed action, the recreational skeet range would be demolished. Camp Lejeune has recently identified a new location for the skeet range that is outside of the proposed Wallace Creek project area. The affected environment for this replacement facility is similar to actions being analyzed within the *Environmental Assessment for Security Gate Upgrades, Road Improvements, Landfill Expansion, and Relocation of Skeet Range, MCB Camp Lejeune, North Carolina*. Therefore, this new replacement facility has been included for impact analysis in that document. If the proposed action were implemented, impacts to on- or off-base recreational facilities would be minor.

Once the construction phase of the project has been completed, daily traffic to the Wallace Creek Regimental Area project area would increase due to additional commuters. However, this increase in traffic is expected to result in a minor impact because of the proposed additional roads and other roadway improvements. In addition, under a separate proposed project, security gate upgrades at Main Gate and Piney Green Gate and road improvements to Old Saw Mill Road

and Piney Green Road would help reduce traffic congestion due to additional commuters. New parking lots are also included in the proposed action to accommodate the parking demand at the Wallace Creek Regimental Area.

Short- and long-term impacts to air quality for criteria pollutants from the proposed action would be considered minor. Minor, short-term impacts would be related to emissions from worker privately owned vehicles, mobile sources utilized at the site (i.e., construction vehicles and petroleum-fueled equipment) and from fugitive dust emissions. These impacts would be temporary in nature and would cease following the completion of construction activities. The greatest emissions would occur during the final year of construction when the largest amount of facilities are built. Long-term emissions, particulate matter most notable, would be greatly reduced and controlled using standard management practices (e.g., routine sweeping and wetting). There would be minor long-term impacts to air quality as a result of privately owned vehicles of Marines commuting from areas off-base and from the operation of standard heating equipment in the newly constructed facilities. Estimated long-term annual emissions resulting from the proposed action are considered to be minor.

The proposed action would result in minor adverse impacts to noise. Noise generating activities would occur during the construction phase of the project from construction equipment operating at the site and construction/delivery vehicles traveling to and from the site. Noise generated during construction would be similar to noise generated by other construction projects on the Base.

Minor impacts to the supply or capacity of utilities would result from the operation of the proposed Wallace Creek Regimental Area. The current demand for water when added to the water demand created by the operation of the Wallace Creek Regimental Area is expected to be well within the available capacity of the Hadnot Point water treatment plant. In addition, MCB Camp Lejeune's wastewater treatment plant could readily accommodate the additional wastewater generated by the operation and maintenance of facilities at the Wallace Creek Regimental Area.

The Progress Energy Company is expected to be able to meet the demand for additional electricity for the proposed regimental complex without difficulty. In addition, Piedmont Natural Gas would provide natural gas to the Wallace Creek Regimental Area. Solid waste generated during the construction, operation, and maintenance of the regimental complex would be disposed of at the Base landfill on Piney Green Road, which has a predicted available capacity life of 22 years.

Stormwater at the proposed Wallace Creek Regimental Area would be managed and controlled in accordance State-approved sedimentation/erosion and control plans and stormwater permits. Development of facilities would take place on roughly 122 ha (302 ac) and approximately 38 ha (94 ac) of that would be impervious surfaces. This would increase the amount and velocity of stormwater. However, according to conceptual design, approximately 3 ha (7 ac) of stormwater ponds would be constructed within the Wallace Creek Regimental Area project area to control this increase in stormwater.

In 2004, the NC State Historic Preservation Office concurred that the Parachute Training Historic District is eligible for inclusion in the National Register of Historic Places (NRHP). The Parachute Training Historic District consists of three discontinuous contributing resources: PT-4, PT-5, and PT-6. These three resources are within the area of potential effects. However, PT-4 and PT-5 are not within the construction limits of the project. PT-6 is adjacent to one of the proposed buildings and a parking area, but no physical alteration or construction would occur within the NRHP boundary of the building. In addition, the roadway running along the three buildings, Parachute Tower Road, is considered a non-contributing element and therefore its realignment is not considered to be an issue. Therefore, no historic properties would be affected by the proposed action. There are no archaeological sites eligible for the NRHP within the project area.

The proposed action would result in minor impacts to geology, topography, and soils. Minor impacts to existing topography would occur during clearing and grading of the Wallace Creek Regimental Area project area. Construction activities would have no direct impact on geological formations at the project area. During construction, soils at the site would be affected through clearing, grading, compaction, and potential erosion. Erosion impacts would be temporary and would be minimized by employing best management practices (BMPs) for soil erosion and sedimentation control at the construction site. Most of the affected soils would eventually be covered with impervious surfaces or vegetation, preventing long-term erosion. Construction of the proposed Wallace Creek Regimental Area would have minimal adverse impacts on surface waters. Appropriate BMPs would be used both during construction and during the long-term operation and maintenance of the complex. The BMPs would ensure removal of suspended particulates prior to surface runoff entering Wallace Creek, New River, Beaverdam Creek, and Bearhead Creek. Camp Lejeune would prevent contamination of water resources by properly storing all fuel and maintaining hazardous materials storage areas in compliance with MCO P5090.2A, Change 1, Chapter 20 and the Base's 2002 Stormwater Pollution Prevention Plan. Withdrawing groundwater from the Castle Hayne aquifer to provide potable water to the proposed project area is not expected to cause a decline in groundwater levels.

The proposed action has the potential to adversely impact approximately 0.09 ha (0.22 ac) of wetlands and approximately 17 meters (56 feet) of intermittent and perennial streams. However, MCB Camp Lejeune would mitigate impacts to wetlands in accordance with the wetland permit conditions to satisfy mitigation requirements. Proposed development would occupy approximately 0.09 ha (0.22 ac) of the Wallace Creek floodplain and would only be about a tenth of one percent of the total size of the Wallace Creek floodplain, which is considered to be minor.

Up to 64 ha (158 ac) of forested habitat would be removed for development of proposed facilities at the Wallace Creek Regimental Area. This forested area would be permanently removed from the future timber commodity production, and represents less than one percent of the Base's total forested land. Although land would be cleared to accommodate proposed facilities, the scale of land clearing in comparison to the extent of managed forests on-base is relatively small. The amount of remaining resources under forest protection, reforestation, and sustainable timber management under Camp Lejeune's Forestry Management Program would remain substantial. Minor impacts to migratory birds would occur due to loss of resting, roosting, and foraging

habitat. The loss of this forested habitat represents a small portion of the habitat available on a base-wide and regional basis. The proposed action would have minor adverse effects on a population of a migratory bird species. In addition, there would be adverse impacts to wildlife in the immediate vicinity of the proposed action, but the stability of wildlife populations on Base would not be affected.

The proposed action would have no impact to federally-listed threatened and endangered species as none of the listed species or their habitats are known to occur within the proposed project area.

The proposed action would result in minor adverse impacts from hazardous materials, waste management, or existing contaminated sites. Three installation restoration (IR) sites, IR Site 19 – Former Naval Research Lab Dump, IR Site 20 – Former Naval Research Lab Incinerator, IR Site 25 - Former Base Incinerator, as well as ASR Site 2.82 - Active Base Skeet Range and ASR Site 2.78 - Former Practice Hand Grenade Range, are located within the project area. Remediation of contamination would be completed prior to construction activities where warranted. An additional radiological investigation has been recommended for IR Site 19 by the Naval Sea Systems Command Detachment, and is programmed for Fiscal Year 2008. An anomaly investigation for ASR Site 2.82 is also programmed for Fiscal Year 2008 to determine if any unexploded ordnance exists at the site. Usual BMPs would be employed in the handling, removal, and disposal of potentially hazardous substances. Furthermore, if necessary, MCB Camp Lejeune would obtain appropriate approvals from US Environmental Protection Agency and the North Carolina Department of Environmental and Natural Resources regarding proposed development at the project area.

ES.4 MITIGATION

The following mitigation measures would be implemented as part of the proposed action:

- 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 at telephone (910) 451-7230
- BMPs would be used to avoid and minimize the release of sediments into stormwater. Mitigation plans would include both short-term (construction phase) and long-term (project life) features to meet the requirements of the Base's Stormwater Pollution Prevention Plan
- All projects would be designed to avoid and minimize impacts to wetlands and waters of the US

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1 PURPOSE AND NEED

1.1 INTRODUCTION

On October 17, 2006, the United States Congress approved the John Warner National Defense Authorization Act for Fiscal Year 2007, which included an increase in end strength of the United States Marine Corps (USMC) from 175,000 to 179,000 Marines. Of this 4,000 overall personnel increase for the USMC, approximately 3,300 Marines are expected to become permanently stationed at Marine Corps Base (MCB) Camp Lejeune (Figure 1-1, Location of Marine Corps Base, Camp Lejeune, NC). To accommodate these Marines the USMC proposes to construct, operate, and maintain a four-battalion regimental complex in the Wallace Creek area of MCB Camp Lejeune, NC. The Wallace Creek regimental area at MCB Camp Lejeune would provide enough facilities to support a total of approximately 4,000 Marines, 2,100 of which are new Marines associated with the FY07 authorized increase and 1,900 of which would be relocated from other existing facilities on MCB Camp Lejeune. Facilities for the remaining 1,200 Marines coming in as a result of the FY07 authorized increase have been accommodated in existing facilities elsewhere on MCB Camp Lejeune.

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

The project area for the Wallace Creek Regimental Area is approximately 223 hectares (ha) (551 acres [ac]) (Figure 1-2, Location of Wallace Creek Regimental Area). Table 1.1-1 lists the 21 military construction (MILCON) projects that are proposed for the Wallace Creek Regimental Area from Fiscal Year (FY) 2007 to FY 2010 and possibly beyond, depending upon funding.

The combined size of the proposed facilities would be approximately 177,421 square meters (sq m) (1,909,744 square feet [sq ft]). New parking lots would cover approximately 24 ha (59 ac). Proposed roads would be roughly 7 kilometers (km) (4 miles [mi]) in length. Approximately 1.3 km (0.8 mi) of Birch Street would be widened. An existing pesticide storage facility and associated structures along with the military working dog kennels would need to be demolished to make room for the FY 2010 construction projects. Lastly, an existing skeet range in the Wallace Creek area would be closed.

Table 1.1-1
Wallace Creek Regimental Area MILCON Projects

FY 2007 MILCON PROJECTS	FY 2010+ MILCON PROJECTS
P-1213, Messhall	P-138, Two Bachelor Enlisted Quarters
P-1220, 3/9 Operations/Maintenance Complex	P-1160, Indoor Fitness Facility
P-1225, Three Bachelor Enlisted Quarters	P-1194, Two Bachelor Enlisted Quarters
	P-1195, Two Bachelor Enlisted Quarters
FY 2008 MILCON PROJECTS	P-1196, Two Bachelor Enlisted Quarters
P-137, Two Bachelor Enlisted Quarters	P-1197, Two Bachelor Enlisted Quarters
P-1087, Two Bachelor Enlisted Quarters	P-1233, 1/9 Operations/Maintenance Complex
P-1156, 2/9 Operations/Maintenance Complex	P-1234, 9 TH Marine Regimental Operations/Maintenance Complex
	P-1247, Two Bachelor Enlisted Quarters
FY 2009 MILCON PROJECTS	P-1248, Two Bachelor Enlisted Quarters
P-1104, Two Bachelor Enlisted Quarters	P-1249, Two Bachelor Enlisted Quarters
P-1193, Two Bachelor Enlisted Quarters	P-1275, Medical / Dental Clinic
	P-1297, 4/9 Operations/Maintenance Complex

1.2 PURPOSE AND NEED FOR THE PROPOSED ACTION

The proposed action is to construct, operate, and maintain a four-battalion regimental complex to accommodate approximately 4,000 personnel. The proposed facilities and infrastructure at the Wallace Creek Regimental Area would fully support the operational and training mission of the four collocated infantry battalions and Regimental Headquarters by meeting the need for required facilities.

The purpose and need for this proposed action is to sustain the ability of the USMC to meet the military and defense posture and challenges of the current era. Marine Corps forces are currently engaged in Operation Iraqi Freedom and Operation Enduring Freedom in Afghanistan. In order for the Marine Corps to continue to defend the world from grave danger of terrorism, they must be adequately and effectively trained to be mission-ready to meet all operational needs.

The newly rebalanced force structure of the USMC will provide combatant commanders with the capabilities that commanders need in these operations. Often, this means combating asymmetrical warfare tactics such as improvised explosive devices and enemy propaganda. Having two new infantry battalions and a Regimental Headquarters brings capabilities that can be used in both counter-insurgency and major combat operations.

Location of Marine Corps Base, Camp Lejeune, NC

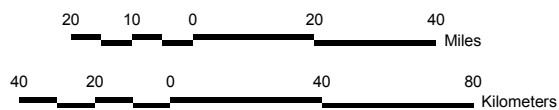
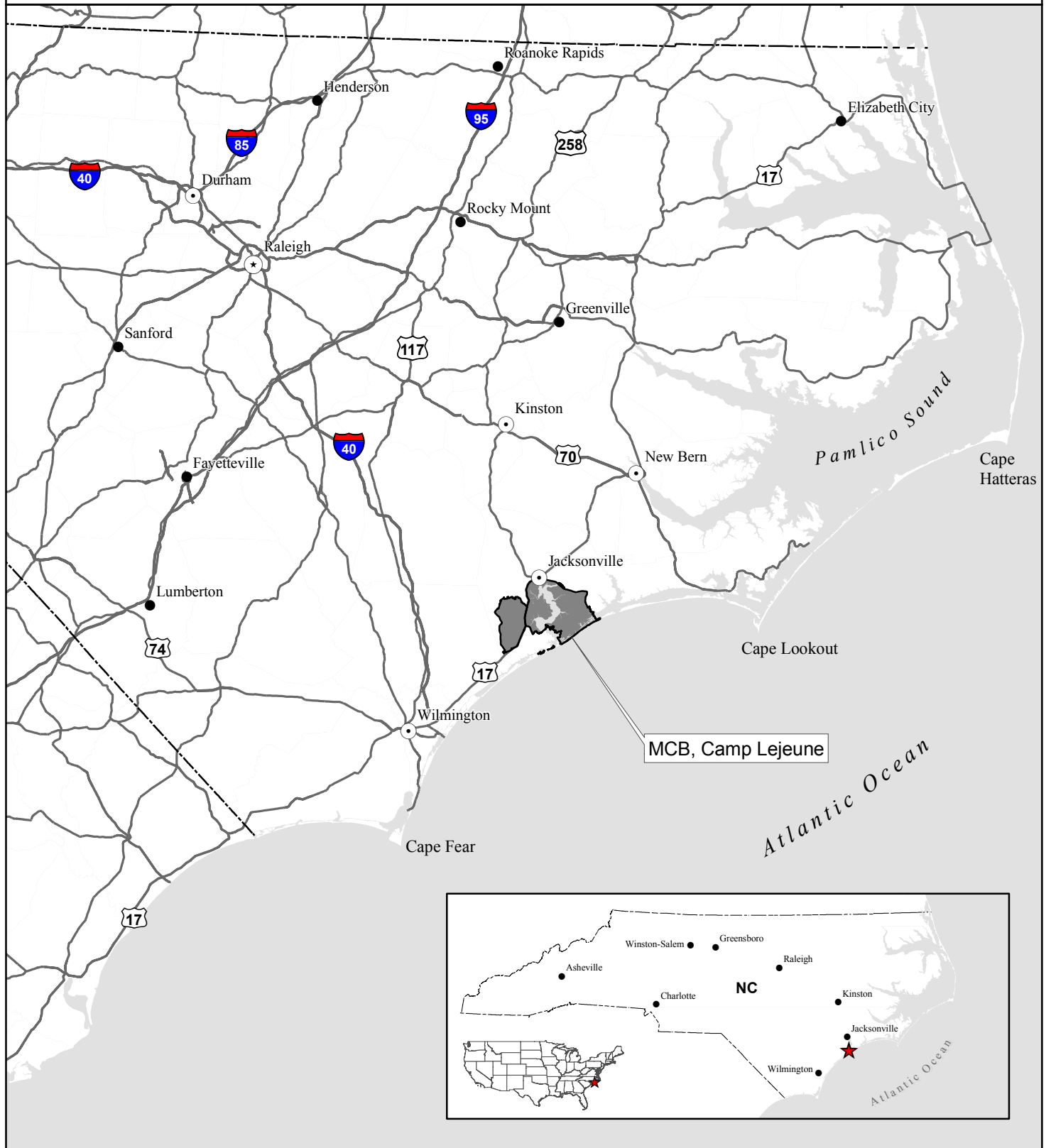
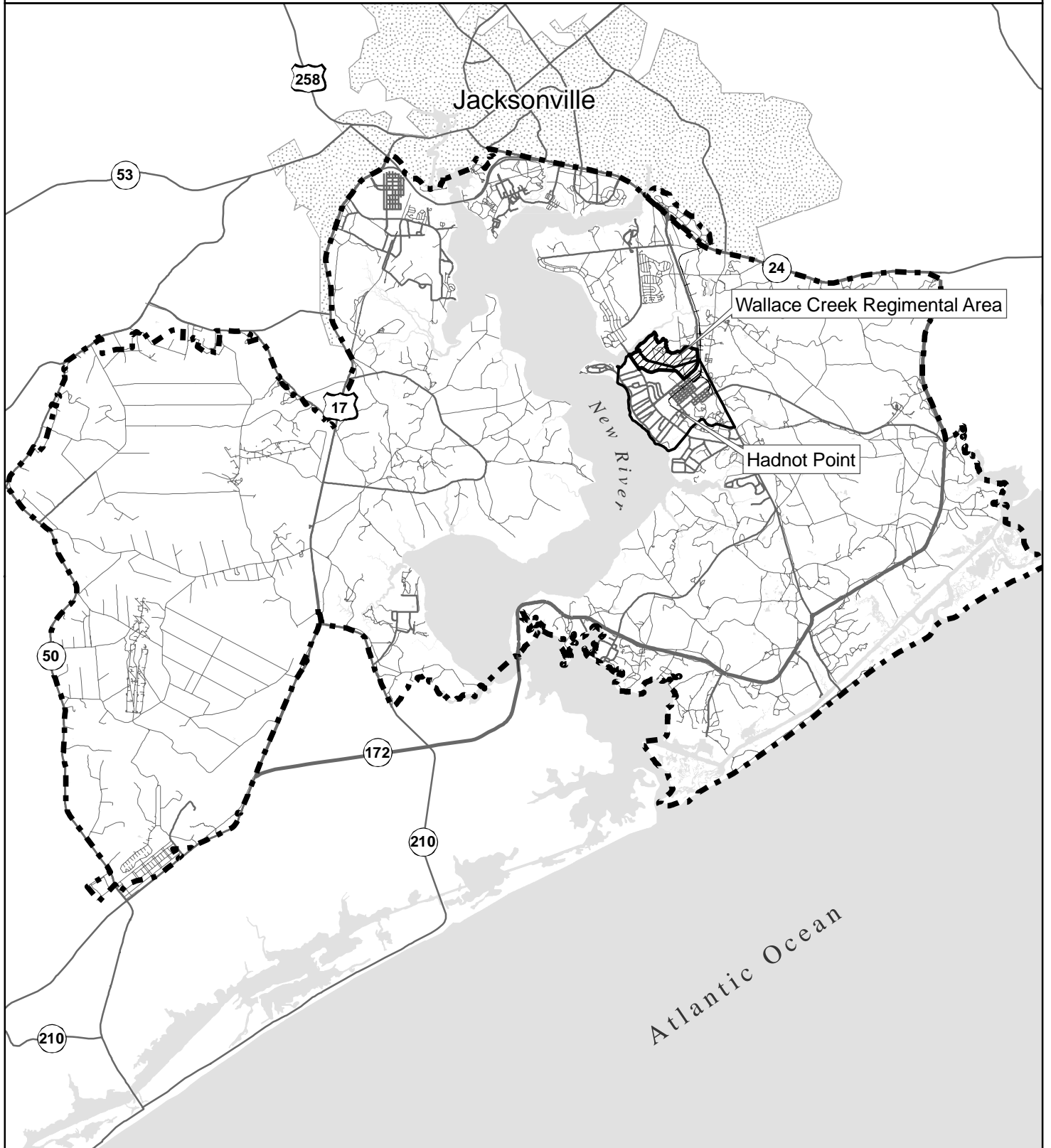






Figure 1-1

Location of Wallace Creek Regimental Area



-  Wallace Creek Regimental Area
-  Hadnot Point
-  MCB Camp Lejeune
-  Roads

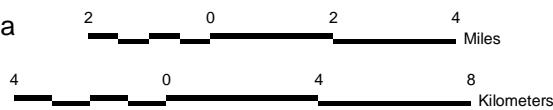


Figure 1-2

Current plans call for two existing infantry battalions to be collocated with the two new infantry battalions under the operational control of a Regimental Command. Consolidating battalion functions within a Regimental Area would not only accommodate the mission and training requirements for the two new battalions and the two existing battalions, but it would let each battalion have its command post closer to their barracks, allowing for better management of Marines.

The two new infantry battalions and Regimental Headquarters have requirements for both housing and operations and support facilities in order to be mission-ready. The need for specific components of the proposed 21 MILCON projects at the Wallace Creek Regimental Area is described next.

1.2.1 Operations Facilities

A maintenance/operations complex is needed for each of the battalions and the Regimental Headquarters. Five MILCON projects are proposed to meet operational needs and carry out operational initiatives of the new and existing units within the Wallace Creek Regimental Area. Routine training operations for the additional personnel associated with the proposed action would be conducted at existing training facilities within the installation. However, there is a need for several new indoor simulated marksmanship trainers to accommodate the training requirements of the incoming personnel.

1.2.2 Housing

The incoming personnel could either live off-base or live in on-base bachelor enlisted quarters (BEQs) and military family housing. It is estimated that approximately 854 Marines would live off-base. Ninety-five Marines would likely reside in existing on-base housing. It is anticipated that approximately 1,151 single enlisted personnel would require housing on-base in BEQs. There is also a need for BEQ housing for the single enlisted marines from the two existing battalions who would relocate to the Wallace Creek Regimental Area from the Hadnot Point area.

In addition to providing housing for incoming personnel and the two relocated infantry battalions, more BEQs are needed to address existing bachelor quarter space deficiencies in the nearby 2d Marine Division units. This need is outlined in the Commandant of the Marine Corps' goal to reduce BEQ deficiencies. In the Commandant of the Marine Corps's 2006 BEQ Campaign Plan, Marine leaders are directed to ensure that BEQ policies and goals are consistent with the Commandant of the Marine Corps's intent to build unit cohesion. The underlying principle of the BEQ Campaign Plan is that proper matching of units to adequate housing is essential to developing unit cohesion, maintaining unit integrity, and improving quality of life. To meet the need for housing single enlisted personnel, 27 BEQs are proposed in thirteen MILCON projects.

1.2.3 Support Facilities

Several support facilities are required to meet the day-to-day needs of the units: messhall, medical/dental clinic, and indoor fitness facility. Three MILCON projects are proposed to satisfy the supporting needs of the Marines who would be working within the Wallace Creek Regimental Area.

1.3 THE ENVIRONMENTAL REVIEW PROCESS

1.3.1 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 environmental assessment (EA) or environmental impact statement (EIS) for any federal action, except those actions that are determined to be “categorically excluded” from further analysis.

An EIS is prepared for those federal actions that may significantly affect the quality of the human environment. An EA is a concise public document that provides sufficient analysis for determining whether the potential environmental impacts of a proposed action are significant, resulting in the preparation of an EIS, or not significant, resulting in the preparation of a Finding of No Significant Impact (FONSI). Thus, if the USMC were to determine that the proposed action would have a significant impact on the quality of the human environment, an EIS would be prepared.

The intent of this EA is to assess the potential environmental effects of the proposed construction, operation, and maintenance of facilities and infrastructure at the Wallace Creek Regimental Area. The Commanding Officer, MCB Camp Lejeune is the decision maker with regard to the proposed action. As a result, information and analyses documented in this EA will be used to support the Commanding Officer of MCB Camp Lejeune in making one of three decisions: approve the proposed action, approve the proposed action with modification(s), or disapprove the proposed action.

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 (MCO) P5090.2A, Change 1, which provides the Marine Corps’ internal operating instructions on how it implements the provisions of NEPA

1.3.2 Scoping and Alternatives Development

The Environmental Impact Working Group at 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, April 2000). Over the course of several meetings, the Environmental Impact Working Group met to review proposals including the proposed facilities and infrastructure at the Wallace Creek Regimental Area (MCB Camp Lejeune, September 2005; MCB Camp Lejeune, August 2006; MCB Camp Lejeune, October 2006a). At these meetings, the Environmental Impact Working Group determined that an EA would be the appropriate level of documentation to comply with NEPA for the proposed action.

The NEPA team held a project kickoff meeting on March 8, 2007; the team included representatives from the MCB Camp Lejeune Environmental Management Division, the MCB Camp Lejeune Installation Development Division, Naval Facilities Engineering Command (NAVFAC) Mid-Atlantic Division, and the EA preparer. The NEPA team discussed 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 to be addressed in the EA should include: land use, coastal zone, socioeconomics, community facilities and services, transportation, air quality, noise, infrastructure and utilities, cultural and natural resources, and hazardous materials and waste management.

1.3.3 Agency Coordination and Permit Requirements

In addition to NEPA, other laws, regulations, permits, and licenses may be applicable to the proposed construction, operation, and maintenance of facilities and infrastructure at the Wallace Creek Regimental Area at MCB Camp Lejeune. Specifically, the proposed action may require:

- Federal Coastal Consistency Determination concurrence by North Carolina Department of Environment and Natural Resources, Division of Coastal Management
- Clean Water Act, Section 404 (Discharges of Dredge or Fill Material) Permit, US Army Corps of Engineers
- Clean Water Act, Section 401 Water Quality Certification, North Carolina Department of Environment and Natural Resources, Division of Water Quality
- Erosion and Sedimentation Control Plan approval by North Carolina Department of the Environment and Natural Resources, Division of Land Resources, Land Quality Section
- Stormwater Management Permit from the North Carolina Department of Environment and Natural Resources, Division of Water Quality
- Non-Discharge Sewer Extension Permit from the North Carolina Department of Environment and Natural Resources, Division of Water Quality, Non-Discharge Branch

- Water Connection Permit from the North Carolina Department of Environment and Natural Resources, Public Water Supply Section
 - Clean Air Act, Title V Construction and Operation Permit from the North Carolina Department of Environment and Natural Resources, Division of Air Quality
 - Concurrence from the North Carolina State Historic Preservation Officer (NC SHPO) on cultural resources effects findings
-

1.4 RELATED PROJECTS AND ENVIRONMENTAL DOCUMENTATION

Other relevant NEPA documents, have been, or are being, prepared for projects involving recent personnel increases, facility construction near the proposed Wallace Creek Regimental Area. These NEPA documents are listed below. Chapter 5, Cumulative Impacts, provides descriptions of these other proposed actions and identifies potential cumulative impacts associated with the proposed action addressed in this EA.

1.4.1 Previously Prepared NEPA Documents for MCB Camp Lejeune

- 4th Marine Expeditionary Brigade Complex, FONSI signed 12 October 2004
 - Force Structure Review Group Initiatives for FY 2005, FONSI signed 22 August 2005
 - D-30 Range EA, FONSI signed 8 March 2006
 - Marine Special Operations Command (MARSOC) Complex, FONSI signed 17 August 2007
-

1.4.2 NEPA Documents Currently in Preparation for MCB Camp Lejeune

- P-1047 Bachelor Enlisted Quarters
- Wastewater System Upgrades and Modifications
- Security Gate Upgrades, Road Improvements, and Landfill Expansion

2 PROPOSED ACTION AND ALTERNATIVES

The Council on Environmental Quality *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act* establish a number of policies for federal agencies, including "...using the NEPA process to identify and assess reasonable alternatives to the proposed action that will avoid or minimize adverse effects of these actions on the quality of the human environment" (40 CFR 1500.2 (e)). The proposed action involves the construction, operation, and maintenance of a four-battalion regimental complex to accommodate the influx of approximately 2,100 personnel to MCB Camp Lejeune. This proposed action is needed to meet the operational and training mission of four collocated infantry battalions with a Regimental Headquarters. These operational and training mission requirements are the foundation for developing criteria to evaluate various alternatives to the proposed action.

2.1 FACTORS USED IN THE EVALUATION OF ALTERNATIVES

Factors that must be met for an alternative to be a reasonable option for fulfilling the purpose and need for the proposed action are shown below.

Evaluation Factors

1. The site must be large enough to accommodate facility requirements for a four-battalion regimental complex that keeps all four battalions together with their Regimental Headquarters
2. The regiment must be in the vicinity of its command, the 2d Marine Division, which is in the Hadnot Point area
3. The location must not displace existing ranges and maneuver areas
4. The alternative must provide adequate operational space in accordance with Anti-Terrorism/Force Protection standards

With these four factors in mind, alternative locations for the proposed facilities were examined. Three sites were initially identified as potentially meeting the evaluation factors: Wallace Creek, Wallace Creek East, and Cogdel's Creek. The No Action Alternative was also evaluated.

2.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, facilities and infrastructure would not be constructed at the Wallace Creek Regimental Area and existing personnel levels would remain the same. There are no existing facilities at MCB Camp Lejeune that could support the introduction of two new

infantry battalions and Regimental Headquarters even on an interim or short-term basis. The two existing battalions would remain in their present location in Hadnot Point and would not be collocated with the two new battalions at the Wallace Creek Regimental Area.

The No Action Alternative fails to meet evaluation factors as listed in Subchapter 2.1. Ultimately, it cannot support the operational and training needs of two new infantry battalions and Regimental Headquarters that are required for mission-readiness. For these reasons, it is not considered a reasonable solution for satisfying the purpose and need for the proposed action as stated in Subchapter 1.3. However, it does provide a baseline against which to measure the potential impacts of the proposed action. Furthermore, this comparison is required by both the Council on Environmental Quality NEPA implementing regulations and the USMC policy for compliance with NEPA (MCO P5090.2A, Change 1 [USMC, January 2008]). Therefore, the No Action Alternative is evaluated in subsequent sections of this EA.

2.3 ALTERNATIVES CONSIDERED BUT DISMISSED

Several alternatives for fulfilling the purpose and need of the proposed action were considered but dismissed from further study. First, the USMC considered renovating and modernizing existing facilities. However, a review of existing facilities at MCB Camp Lejeune revealed that none met the basic facilities requirements for the new units, even with modernization or renovation. Moreover, there are no existing facilities available for renovation in the Hadnot Point area.

Next, the USMC considered leasing facilities off-base in the local community. In order to meet the space requirements, facilities would need to have a space of approximately 178,000 sq m (approx 1,916,000 sq ft), in addition to parking. Leasing would involve the daily transport of personnel and equipment. This daily transport requires increased logistical effort that would negatively affect training and ultimately mission effectiveness. Even considering these logistical problems, no suitable off-base facilities are available that could provide for housing and operations with appropriate anti-terrorism/force protection measures. As a result, on-base construction is preferred and off-base alternatives were dismissed from further study.

In the site selection process, the USMC searched for alternative locations that were upland areas (non-wetland areas) to avoid impacting wetlands from facility and infrastructure construction. However, due to the nature of the topography and hydrology of MCB Camp Lejeune, wetlands are interspersed throughout the installation. A site that could provide space for a consolidated compound, large enough for four collocated battalions and Regimental Headquarters in a configuration that avoids all wetlands, is not available anywhere on the installation. Therefore, there are no other alternatives available that would allow the layout of the Regimental Area to completely avoid impacts to wetlands while at the same time meeting the evaluation factors listed in Subchapter 2.1.

Alternative site locations for the four-battalion regimental area were identified at Wallace Creek East and Cogdel's Creek (Figure 2-1, Alternatives Considered but Dismissed). Siting the required facilities and infrastructure at Wallace Creek East would be impeded by a major power/natural gas utility easement through the site (evaluation factors 1 and 4). In addition, Wallace Creek East was not large enough (only 106 ha [262 ac]) to fit all four battalions with Regimental Headquarters (evaluation factor 1). Therefore, this site was eliminated as a viable alternative.

Cogdel's Creek was assessed as a potential site for the regimental area. This area was dismissed from further consideration because it was not large enough (only 116 ha [288 ac]) to fit all four battalions with Regimental Headquarters (evaluation factor 1). Furthermore, there are trails used for tank maneuvers at the site that would need to be relocated to ensure enough room for the proposed facilities (evaluation factor 3).

2.4 DETAILED DESCRIPTION OF THE PROPOSED ACTION

The proposed action is to construct, operate, and maintain a four-battalion regimental complex in the Wallace Creek area to accommodate the influx of approximately 2,100 personnel to MCB Camp Lejeune. Locating the regimental facilities at the Wallace Creek site would allow the 21 required MILCON projects to be arranged in a central location (evaluation factor 1). The Wallace Creek site is in the vicinity of the 2d Marine Division (evaluation factor 2). No ranges or maneuver areas would be impacted from proposed development at Wallace Creek (evaluation factor 3). (The skeet range is a recreational facility.) The Wallace Creek site is large enough to provide for the proper standoff distances between facilities and public streets/parking areas. These standoff distances are required for compliance with anti-terrorism/force protection standards (evaluation factor 4). For these reasons, development of regimental facilities and infrastructure at the Wallace Creek area would meet the operational and training requirements of the two new infantry battalions, the new Regimental Headquarters, and two existing infantry battalions already stationed at MCB Camp Lejeune. The two existing infantry battalions would move from their present facilities at the Hadnot Point area of MCB Camp Lejeune to the Wallace Creek Regimental Area and would be collocated with the new battalions.

2.4.1 Design Process for Wallace Creek Regimental Facilities and Infrastructure

The development of the site plan for the layout of the regimental facilities and infrastructure was a lengthy process. This process involved numerous revisions to generate the best layout that would meet the operational needs of the regiment while minimizing environmental impacts. The process started with a week-long functional analysis design charette, which took place from June 4 to June 8, 2007. A design charette is an intense series of planning meetings and design sessions

where a team of design professionals work with the users to come up with a workable solution that is supported by the entire team.

This Wallace Creek Master Plan Functional Analysis Design Charette included participants from many disciplines. Representatives from Navy and USMC civil service personnel, military personnel, and consultants all contributed to the design process with regard to their area of expertise. The civil service personnel included the following disciplines: facility planners, environmental planners and scientists, utility managers, and infrastructure managers. Military personnel attended as future users of the regimental facilities and infrastructure. Design professionals included: project managers, engineers (civil, mechanical, and electrical), architects, and interior designers. Environmental professionals covered a wide array of resources: NEPA, threatened and endangered species, cultural resources, wetlands, installation restoration, clean-up, and remediation.

Each master plan concept initially was developed using the most current information available on environmental resources and the locations of existing facilities within the project area. The intent of using this information was to avoid and/or minimize impacts to sensitive resources and existing land uses. Preliminary environmental resource information taken into consideration included: streams, National Wetlands Inventory mapping, known occurrences of threatened and endangered species, historic structures, and known contaminated sites. The notable existing facilities that factored into the design process were roads and utilities, a recreational skeet range, military working dog facility, and pesticide storage facility.

Three different master plan concepts, Concept 1A, Concept 1B, and Concept 1C, were initially presented for review, deliberation, and comment by the design charette participants. Input on these first three master plan concepts was incorporated and a second set of refined master plan concepts was presented: Concept 2A and Concept 2B. From this second set of master plan concepts, Concept 2B was selected to become the Wallace Creek Master Plan Final Concept (MCB Camp Lejeune, July 2007).

During the summer and fall of 2007, field surveys were conducted for the presence of wetlands and cultural resources. Also, a focused site investigation was performed for environmental contamination by hazardous and toxic waste or munitions and explosives of concern. Results of these surveys and investigation were used to further revise the layout of the Wallace Creek Master Plan Final Concept (MCB Camp Lejeune, July 2007).

The Wallace Creek Master Plan Final Concept is a conceptual plan (MCB Camp Lejeune, July 2007). Additional engineering design level detail, construction plans, and specifications would be needed before this proposed project could be built. The conceptual plan contains approximate locations and sizes of proposed facilities and infrastructure, which form the basis for analyses in this EA.

If design plans should be developed for construction purposes, MCB Camp Lejeune would work closely with the design-build contractor and representatives from the regulatory community to explore prudent and reasonable wetlands avoidance and minimization strategies. Mitigation plans, including on-site wetland restoration and/or creation, may be required by the permit

Alternatives Considered but Dismissed







-  Wallace Creek Regimental Area
-  MCB Camp Lejeune
-  Roads
-  Streets (Detailed)



Figure 2-1

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process administered by the US Army Corps of Engineers. The wetlands permit would be tiered and benchmarks would be met for each phase of construction, since this would be a multi-year construction project. Corresponding wetland mitigation, if required, would be accomplished for each construction phase.

The proposed action has three basic components for the purpose of analyzing potential impacts: construction of new facilities, installation of new infrastructure and utilities, and demolition of existing buildings and structures. These three components are described in detail in the following subchapters.

2.4.2 Proposed Wallace Creek Regimental Facilities

The Wallace Creek project area is approximately 223 ha (551 ac). The proposed action would involve construction on slightly more than half of this project area, roughly 122 ha (302 ac) (Figure 2-2, Wallace Creek Regimental Area). The current preferred layout uses a centralized approach to the collocated battalion and regimental facilities with shared infrastructure and supporting facilities. In this way, less land would be developed than a scenario with four separate battalion compounds and regimental area.

The four battalions would be arranged around a central operational/maintenance area, where the motor transportation shops, electronic/communication maintenance shops, and armories are proposed to be located. The proposed indoor marksmanship trainers and supply warehouses are also configured centrally, in order to readily serve the entire regiment. The proposed messhall and medical/dental clinic are located where they would be convenient to other patrons outside the regimental area. Finally, each battalion and company headquarters would be located near the BEQs that would house the Marines assigned to that battalion.

Design and construction of the 21 proposed MILCON projects would be expected to begin in 2008 and continue through 2010 and possibly beyond. However, preliminary conceptual design for several MILCON projects was programmed for FY07 and FY08.

The design of facilities in the MILCON projects would incorporate available types of new sustainable materials and the use of energy-saving systems and materials wherever possible. These MILCON projects are intended to be built so as to achieve the US Green Building Council's minimum or higher certification in the Leadership in Energy and Environmental Design. The construction phase would involve the removal of timber, clearing and grubbing, earthwork, fill, and grading throughout 122 ha (302 ac) of the larger project area.

The size of proposed facilities to be constructed would be approximately 177,421 sq m (1,909,744 sq ft). Many of the new facilities are proposed as multistory buildings (e.g., BEQs), so the area of the footprint within the complex that these facilities would cover is approximately 80,728 sq m (868,949 sq ft). The actual size of facilities may differ once preliminary engineering begins. However, the listed sizes reflect what the needs are for space. Specific project elements are listed in Table 2.4-1.

Table 2.4-1

Proposed Facilities and Infrastructure at Wallace Creek

Project	Facility	Facility Components	Size (sq m)
FY 2007 MILCON PROJECTS			
P-1213 ¹	Messhall	Messhall Telecommunications room	2,908
P-1220 ²	3/9 Maintenance/Operations Complex	Battalion headquarter building General supply warehouse Electronic/communication maintenance shop Motor transportation shop Armory Indoor marksmanship trainer Telecommunication room Company headquarters building Hazmat storage shelter Telephone exchange building	8,597
P-1225 ³	Bachelor Enlisted Quarters	Bachelor enlisted quarters 1 Bachelor enlisted quarters 2 Bachelor enlisted quarters 3 Telecommunications room	13,482
FY 2008 MILCON PROJECTS			
P-137 ⁴	Bachelor Enlisted Quarters	Bachelor enlisted quarters 1 Bachelor enlisted quarters 2 Water distribution building Telecommunications room	9,276
P-1087 ⁵	Bachelor Enlisted Quarters	Bachelor enlisted quarters 1 Bachelor enlisted quarters 2 Telecommunications room	9,090
P-1156 ⁶	2/9 Maintenance/Operations Complex	Battalion headquarters building General supply warehouse Electronic/communication maintenance shop Motor transportation shop Armory Indoor marksmanship trainer Telecommunications room Company headquarters building Hazmat storage shelter Telephone exchange building Relocate weather shelters	8,773

Wallace Creek Regimental Area

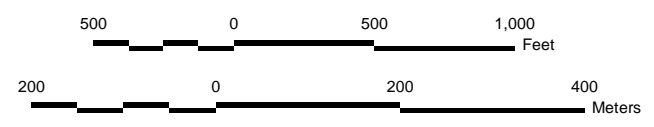
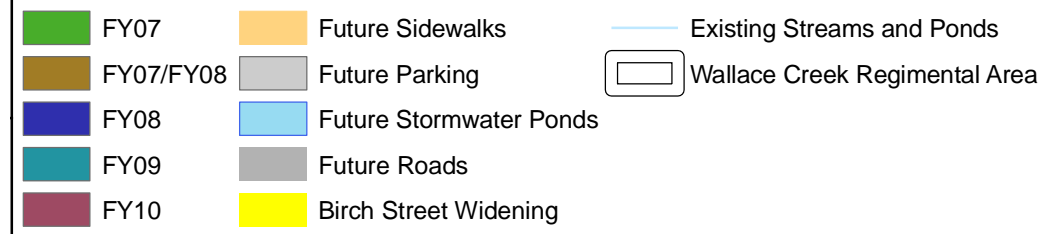
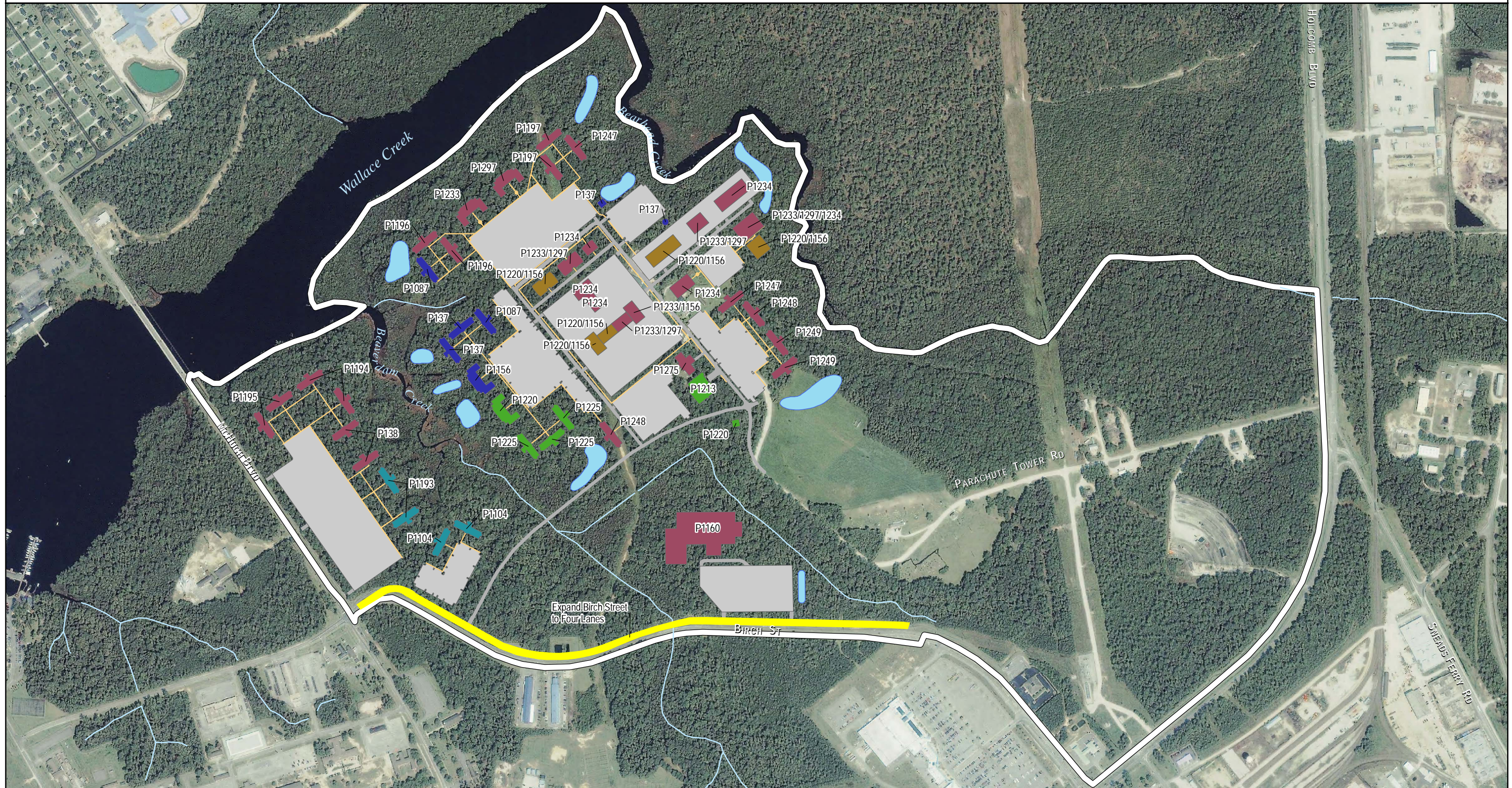


Figure 2-2

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Table 2.4-1, continued
Proposed Facilities and Infrastructure at Wallace Creek

Project	Facility	Facility Components	Size (sq m)
FY 2009 MILCON PROJECTS			
P-1104 ⁷	Bachelor Enlisted Quarters	Bachelor enlisted quarters 1 Bachelor enlisted quarters 2 Telecommunications room	9,440
P-1193 ⁸	Bachelor Enlisted Quarters	Bachelor enlisted quarters 1 Bachelor enlisted quarters 2 Telecommunications room	9,440
FY 2010+ MILCON PROJECTS			
P-138 ⁹	Bachelor Enlisted Quarters	Bachelor enlisted quarters 1 Bachelor enlisted quarters 2 Telecommunications room	8,989
P-1160 ¹⁰	Indoor Fitness Facility	Indoor Fitness Facility Telecommunications room	8,364
P-1194 ¹¹	Bachelor Enlisted Quarters	Bachelor enlisted quarters 1 Bachelor enlisted quarters 2 Telecommunications room	8,989
P-1195 ¹²	Bachelor Enlisted Quarters	Bachelor enlisted quarters 1 Bachelor enlisted quarters 2 Telecommunications room	8,989
P-1196 ¹³	Bachelor Enlisted Quarters	Bachelor enlisted quarters 1 Bachelor enlisted quarters 2 Telecommunications room	8,989
P-1197 ¹⁴	Bachelor Enlisted Quarters	Bachelor enlisted quarters 1 Bachelor enlisted quarters 2 Telecommunications room	8,989
P-1233 ¹⁵	1/9 Maintenance/Operations Complex	Battalion headquarter building General supply warehouse Electronic/communication maintenance shop Motor transportation shop Armory Indoor marksmanship trainer Telecommunication room Company headquarters building Hazmat storage shelter	8,283
P-1234 ¹⁶	9 th Marines Regimental Maintenance/Operations Complex	Regimental headquarter building General supply warehouse Electronic/communication maintenance shop Motor transportation shop Indoor marksmanship trainer Telecommunication room Hazmat storage shelter Armory	6,417

Table 2.4-1, continued

Proposed Facilities and Infrastructure at Wallace Creek

Project	Facility	Facility Components	Size (sq m)		
FY 2010+ MILCON PROJECTS, continued					
P-1247 ¹⁷	Bachelor Enlisted Quarters	Bachelor enlisted quarters 1 Bachelor enlisted quarters 2 Telecommunications room Personal equipment cleaning station	9,588		
P-1248 ¹⁸	Bachelor Enlisted Quarters	Bachelor enlisted quarters 1 Bachelor enlisted quarters 2 Telecommunications room Personal equipment cleaning station	9,588		
P-1249 ¹⁹	Bachelor Enlisted Quarters	Bachelor enlisted quarters 1 Bachelor enlisted quarters 2 Telecommunications room Personal equipment cleaning station	9,588		
P-1275 ²⁰	Medical/Dental Clinic	Medical clinic Dental clinic Telecommunications room	1,348		
P-1297 ²¹	4/9 Maintenance/Operations Complex	Battalion headquarter building General supply warehouse Electronic/communication maintenance shop Motor transportation shop Armory Indoor marksmanship trainer Telecommunication room Company headquarters building Hazmat storage shelter	8,294		
TOTAL			177,421		
<p>Notes:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <ol style="list-style-type: none"> 1. DD Form 1391 for P-1213, 12 December 2006 2. DD Form 1391 for P-1220, 12 December 2006 3. DD Form 1391 for P-1225, 12 December 2006 4. DD Form 1391 for P-137, 3 January 2007 5. DD Form 1391 for P-1087, 3 January 2007 6. DD Form 1391 for P-1156, 24 January 2007 7. DD Form 1391 for P-1104, 18 June 2007 8. DD Form 1391 for P-1193, 18 June 2007 9. DD Form 1391 for P-138, 8 January 2007 10. DD Form 1391 for P-1160, 9 March 2005 </td> <td style="width: 50%; vertical-align: top;"> <ol style="list-style-type: none"> 11. DD Form 1391 for P-1194, 11 July 2006 12. DD Form 1391 for P-1195, 17 July 2006 13. DD Form 1391 for P-1196, 17 July 2006 14. DD Form 1391 for P-1197, 17 July 2006 15. DD Form 1391 for P-1233, 6 April 2007 16. DD Form 1391 for P-1234, 10 April 2007 17. DD Form 1391 for P-1247, 30 August 2007 18. DD Form 1391 for P-1248, 30 August 2007 19. DD Form 1391 for P-1249, 30 August 2007 20. DD Form 1391 for P-1275, 27 August 2007 21. DD Form 1391 for P-1297, 29 August 2007 </td> </tr> </table>				<ol style="list-style-type: none"> 1. DD Form 1391 for P-1213, 12 December 2006 2. DD Form 1391 for P-1220, 12 December 2006 3. DD Form 1391 for P-1225, 12 December 2006 4. DD Form 1391 for P-137, 3 January 2007 5. DD Form 1391 for P-1087, 3 January 2007 6. DD Form 1391 for P-1156, 24 January 2007 7. DD Form 1391 for P-1104, 18 June 2007 8. DD Form 1391 for P-1193, 18 June 2007 9. DD Form 1391 for P-138, 8 January 2007 10. DD Form 1391 for P-1160, 9 March 2005 	<ol style="list-style-type: none"> 11. DD Form 1391 for P-1194, 11 July 2006 12. DD Form 1391 for P-1195, 17 July 2006 13. DD Form 1391 for P-1196, 17 July 2006 14. DD Form 1391 for P-1197, 17 July 2006 15. DD Form 1391 for P-1233, 6 April 2007 16. DD Form 1391 for P-1234, 10 April 2007 17. DD Form 1391 for P-1247, 30 August 2007 18. DD Form 1391 for P-1248, 30 August 2007 19. DD Form 1391 for P-1249, 30 August 2007 20. DD Form 1391 for P-1275, 27 August 2007 21. DD Form 1391 for P-1297, 29 August 2007
<ol style="list-style-type: none"> 1. DD Form 1391 for P-1213, 12 December 2006 2. DD Form 1391 for P-1220, 12 December 2006 3. DD Form 1391 for P-1225, 12 December 2006 4. DD Form 1391 for P-137, 3 January 2007 5. DD Form 1391 for P-1087, 3 January 2007 6. DD Form 1391 for P-1156, 24 January 2007 7. DD Form 1391 for P-1104, 18 June 2007 8. DD Form 1391 for P-1193, 18 June 2007 9. DD Form 1391 for P-138, 8 January 2007 10. DD Form 1391 for P-1160, 9 March 2005 	<ol style="list-style-type: none"> 11. DD Form 1391 for P-1194, 11 July 2006 12. DD Form 1391 for P-1195, 17 July 2006 13. DD Form 1391 for P-1196, 17 July 2006 14. DD Form 1391 for P-1197, 17 July 2006 15. DD Form 1391 for P-1233, 6 April 2007 16. DD Form 1391 for P-1234, 10 April 2007 17. DD Form 1391 for P-1247, 30 August 2007 18. DD Form 1391 for P-1248, 30 August 2007 19. DD Form 1391 for P-1249, 30 August 2007 20. DD Form 1391 for P-1275, 27 August 2007 21. DD Form 1391 for P-1297, 29 August 2007 				

Facility components in the 21 MILCON projects fall into three general categories: operations facilities, housing, and support facilities.

Operations Facilities

A maintenance/operations complex is proposed for each of the four battalions and the Regimental Headquarters. Each maintenance/operations complex would include: a headquarters building, general supply warehouse, electronic/communication maintenance shop, motor transportation shop, armory, indoor marksmanship trainer, and hazardous material storage shelter. The four battalion maintenance/operations complexes would each have a company headquarters building. One of the maintenance/operations complex MILCON projects would include a telephone exchange building.

These maintenance/operations complexes would provide the space that is needed for administration, storage, drive-through equipment maintenance bays, communications/electronic equipment repair, and secure weapons armories. Other features would include: vehicle wash platforms, oil/water separators, shower and locker areas, recyclable collection area, and sewage pumping station. Built-in equipment at the motor/transportation shops would include a vehicle exhaust system, waste oil storage tank, 15-ton hydraulic lifts, and 10-ton bridge crane.

Housing

Twenty-seven BEQs are proposed to meet the need for housing. The proposed BEQs would house single enlisted personnel from the two new infantry battalions as well as existing personnel from the two existing infantry battalions. These four battalions would be collocated in the Wallace Creek Regimental Area. In addition, these barracks could be used to house existing personnel from other 2d Marine Division units and to address existing bachelor quarter space deficiencies. Each BEQ would house approximately 200 Marines in two-person rooms with semiprivate bathrooms. Recreational areas would be built near the BEQs, including lighted basketball and volleyball courts.

Support Facilities

A messhall, medical/dental clinic, and indoor fitness facility would be built to meet the day-to-day needs of the Marines who would be working within the Wallace Creek Regimental Area. The messhall would be a dining facility for enlisted personnel. The medical/dental clinic would provide primary medical and dental care, preventative medicine, acute care, and deployment health assessments. The indoor fitness facility would provide exercise areas, space for equipment and gear storage, laundry facility, and shower and locker areas.

2.4.3 Proposed Infrastructure and Utilities

Several infrastructure features are proposed for the Wallace Creek Regimental Area (Figure 2-2). New paved parking lots would cover approximately 24.1 ha (59.5 ac). New paved roadways in the complex would be roughly 2.9 km (1.8 mi) in length and would cover approximately 4.0 ha (9.8 ac). Of these new roadways, one new 0.8 km- (0.5 mi-) road would connect Parachute Tower Road with Birch Street. This new road would require a bridge or a culvert to cross Beaver Dam Creek. Three footbridges would also be constructed to cross Beaver Dam Creek. Intersection improvements, such as turning lanes and traffic signals, would be added to the McHugh Boulevard and Birch Street intersection. Approximately 1.3 km (0.8 mi) of Birch Street would be widened to four lanes from its intersection with McHugh Boulevard to the existing four-lane section of Birch Street.

Sidewalks around buildings would cover approximately 9,384 sq m (101,009 sq ft). Proposed stormwater ponds would be about 2.7 ha (6.8 ac) in size. Throughout the regimental area, there would be exterior lighting, security fencing and gates, building signs, and roadway signs. Upon completion of construction, landscaping features would be added.

New utilities would be installed to connect the proposed facilities with the installation's existing network of utilities. Primary and secondary electricity distribution would include transformers. Steam distribution lines would be installed. The new facilities would be serviced by telephone, fiber optic, and natural gas lines. Fire protection waterlines and fire hydrants would be installed throughout the project area. A new elevated water tank with water distribution lines is proposed to meet the need for potable water. Wastewater lines would be installed to connect the area to the installation's existing wastewater treatment facility at French Creek. Finally, solid waste that is not reused or recycled would be transported to the installation's landfill on Piney Green Road.

2.4.4 Proposed Demolition of Existing Facilities

Certain existing facilities would need to be demolished in order to make room for proposed facilities. These include: pesticide storage facility and associated structures, military working dog kennels, and recreational skeet range.

Camp Lejeune has recently identified new locations for the military working dog kennels and the skeet range that are outside of the proposed Wallace Creek project area. The affected environment for these replacement facilities is similar to actions being analyzed within the *Environmental Assessment for Temporary Beddown of Proposed Increase in End Strength, MCB Camp Lejeune, North Carolina* and the *Environmental Assessment for Security Gate Upgrades, Road Improvements, Landfill Expansion, and Relocation of Skeet Range, MCB Camp Lejeune, North Carolina*, respectively. Therefore, these new replacement facilities have been included for impact analysis in these documents.

2.5 EVALUATION OF ALTERNATIVES

Table 2.5-1 summarizes the beneficial and adverse impacts of the two alternatives considered, the No Action Alternative and the proposed action. Under the No Action Alternative, construction of the Wallace Creek Regimental Area would not take place and personnel levels at MCB Camp Lejeune would remain the same.

The proposed action is to construct, operate, and maintain a four-battalion regimental complex in the Wallace Creek area to accommodate the influx of approximately 2,100 personnel to MCB Camp Lejeune. Development of regimental facilities and infrastructure at the Wallace Creek area would meet the operational and training requirements of the two new infantry battalions, the new Regimental Headquarters, and two existing infantry battalions already stationed at MCB Camp Lejeune.

Table 2.5-1
Evaluation of Alternatives

Impact	No Action Alternative	Proposed Action
Land Use and Coastal Zone Management	No construction would occur and land use patterns would remain the same; current land use within project area is consistent with policies designed to protect the coastal zone	<p>Land use would change from mixed forest to developed areas; change would be consistent with the designated land use classification, which is operational and training facilities; change to developed areas would match nearby developed land use in Hadnot Point</p> <p>Pesticide storage and associated structures, military working dog kennels, and recreational skeet range would be demolished to make room for proposed facilities</p> <p>Consistent with applicable coastal zone policies</p>
Socioeconomics	No influx of personnel and no resulting impact to demographics, income and employment, or housing	<p>Net gain of approximately 2,100 military personnel and approximately 1,963 family members, which would represent a 1.5 percent increase in the tri-county region (Onslow, Carteret, and Pender Counties)</p> <p>Short-term benefits on the local economy due to construction, long-term economic gains due to gain in job, indirect and induced impacts to economic sectors</p> <p>Given the vacancy rate for area housing in the tri-county area, community housing could meet the expected demand for off-base housing</p> <p>No disproportionately adverse impacts to minorities, low-income populations, and children</p>
Community Facilities and Services	No influx of personnel and no resulting impact to community facilities and services; Onslow County has initiated a redistricting process to balance elementary school populations and is opening a new elementary school in August 2008 with a capacity of 765 students	<p>Minor impacts to emergency services and hospitals</p> <p>Additional expenses for local school districts, due to the projected increase in enrollment of approximately 708 children; Onslow County has initiated a redistricting process to balance elementary school populations and is opening two new elementary schools in August 2008 and in 2009 with a combined capacity of 1,605 students</p> <p>Active recreational skeet range would be demolished; no adverse impacts to recreational facilities</p>

Table 2.5-1, continued
Evaluation of Alternatives

Impact	No Action Alternative	Proposed Action
Transportation and Traffic	No construction within the Wallace Creek area would occur and the on-base transportation system would not change; however, road improvements associated with a separate proposed project would help reduce traffic congestion in the area	Minor short-term impacts to traffic flow during construction; expected increase in traffic in the Wallace Creek area would have minor impacts due to construction of additional roads and other road improvements
Air Quality	Levels of air emissions currently generated and existing air quality would remain the same; the region is expected to remain in attainment for all criteria pollutants	Short-term construction impacts resulting in fugitive dust emissions; minor, long-term mobile emissions due to privately owned vehicles or Marines commuting from areas off-base and from operation of standard heating equipment in new buildings; the region is expected to remain in attainment for all criteria pollutants
Noise	Existing noise conditions on Base would remain relatively unchanged	Short-term construction related noise impacts; noise generation would be similar to noise generated by other construction projects on Base
Infrastructure and Utilities	No construction would occur and infrastructure and utility conditions would remain in their present state	Proposed action would create a demand for utilities that could be met by available capacities; minor impacts to water supply, wastewater, electricity, natural gas, solid waste, or stormwater
Cultural Resources	Historic and archaeological resources would not be affected because there would be no facility development or ground disturbing activities	No historic structures within the area of potential effects would be impacted and no archaeological sites are eligible for the National Register

Table 2.5-1, continued
Evaluation of Alternatives

Impact	No Action Alternative	Proposed Action
Natural Resources	No construction of facilities would take place; natural resources would not be impacted within the Wallace Creek Area	<p>Minor impacts to geology, topography, soils, or water resources, due in part to best management practices and erosion and sedimentation control plans</p> <p>Approximately 0.09 ha (0.22 ac) of wetlands would be impacted by the proposed a road crossing Beaverdam Creek and the widening of Birch Street; approximately 17 meters (156 feet) of streams would be impacted</p> <p>Roughly 0.09 ha (0.22 ac) of floodplains would be impacted by a BEQ (P-138), new roadway, and the widening of Birch Street; stormwater management ponds would limit the loss of existing flood storage capacity</p> <p>Removal of 64 ha (158 ac) of mixed pine-hardwood habitat would occur within the 162 ha of forest present within the project area; adverse impacts on wildlife not expected to affect the stability of local wildlife populations</p> <p>Minor adverse impact on migratory bird populations; no impacts to federally-listed threatened and endangered species</p>
Hazardous Materials and Waste Management	Existing conditions in hazardous materials and waste management and at contaminated sites would not change	<p>Minor adverse impacts from hazardous materials, waste management, or existing contaminated sites</p> <p>No radiation exposure hazard for personnel working in the project area near IR Site 19</p> <p>Recent sampling data indicates arsenic levels near IR Sites 19, 20, and 25 are within acceptable risk levels; however, a recommendation has been made that a human health risk assessment be conducted to confirm this data evaluation</p> <p>A duplicate sample from one of the soil surface locations at IR Site 20 had an elevated level of trichloroethene, which needs to be confirmed</p> <p>Facilities proposed within IR Sites 19 and 20 include maintenance operations facilities and a medical/dental clinic; a messhall and BEQ would be constructed near these IR Sites but outside of their boundaries; the proximity of the messhall and BEQs may require stricter remediation goals</p> <p>A parking lot would overlay IR Site 25; several BEQs would be within the footprint of the skeet range, which could require remediation for lead</p> <p>Additional investigations are programmed for FY 2008 for IR Site 19 an ASR Site 2.82. Prior to construction activities, all appropriate approvals from USEPA and NCDENR would be received</p>

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3 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 construction, operation, and maintenance of a four-battalion regimental complex at the Wallace Creek Regimental Area and associated influx of personnel at MCB Camp Lejeune, North Carolina.

3.1 LAND USE AND COASTAL ZONE MANAGEMENT

3.1.1 Land Use

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

The proposed project site is approximately 223 ha (551 ac) and currently supports a number of land uses. Forested areas (approximately 142 ha [351 ac]) are located across the site with the largest areas of forest located within the western portion of the site. These areas primarily consist of mixed pine and hardwood species with loblolly being the most common pine, and sweet gum and black gum being the most common hardwoods. Forested areas support recreational uses such as hiking and mountain-biking and also provide non-road access to training areas for heavy equipment that cannot travel on paved surfaces (e.g., tanks). These areas generally contain trail systems of various sizes depending on the intended use.

Other recreational uses supported by the site include a skeet shooting range and paintball course that occupies a large area in the center of the site and a drive-in movie theater located near the eastern boundary. The skeet range also supports training uses by Tactical Landing Zone Sparrow.

Additional training facilities and activities currently in the proposed project area include a dog training facility and a few office/storage buildings. The historical significance of these buildings is addressed in Subchapter 3.8.

The proposed site contains wetlands, floodplains, and historic and archaeological resources. These items are addressed in detail in Subchapters 3.9 and 3.8, respectively. The eastern third of the proposed site is crossed by Parachute Tower Road, which is discussed further in Subchapter 3.4.

3.1.2 Coastal Zone Management

The coastal zone is rich in natural, commercial, recreational, ecological, industrial, and aesthetic resources. As a result, it is protected by legislation for the effective management of its resources. The Coastal Zone Management Act (CZMA) of 1972 (16 United States Code [USC] § 1451, et seq., as amended) provides assistance to states, in cooperation with federal and local agencies, for developing land and water use programs in the coastal zone.

CZMA policy 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 CZMA federal consistency requirements if the federal activity will affect any land or water or natural resource in the state's coastal zone, including reasonably foreseeable effects.

The North Carolina Coastal Area Management Act (CAMA) of 1974 was passed in accordance with the federal CZMA. 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 mile) 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
- 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.

Onslow County Coastal Management Policies

The CAMA requires 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 county has zoning controls applicable to only one special area, Golden Acres in Stump Sound Township. The county does, however, require review of subdivisions, providing for minimum standards, enforced by the county Planning Department. Incorporated areas within the county implement their own zoning regulations. Onslow County's *Citizen's Comprehensive Plan for Onslow County*, adopted in 2003, also addresses land use planning in relation to the Coastal Area Management Act (Onslow County Planning and Development Department, April 2003).

3.2 SOCIOECONOMICS

The region of influence (ROI) for socioeconomics was defined as the tri-county region of Onslow, Carteret, and Pender Counties. Although Onslow County estimates that 90 percent of the total military population associated with Camp Lejeune lives within Onslow County (Onslow County, February 2000), the proposed site for the Wallace Creek Regimental Area is located in an area of the Base that may be associated with higher relative influences of Carteret and Pender Counties.

3.2.1 Demographics

There are several major Marine Corps commands and one Navy command aboard MCB Camp Lejeune, making it one of the largest populated bases in the world. A recent estimate of the total active-duty population of the Base is 42,241 active duty personnel. On-base civilian employees add 4,627 personnel. There are over 45,160 family members of active duty personnel. Approximately 67,967 federal retirees and family members reside in the Jacksonville area (MCB Camp Lejeune, January 2007).

The military population of Camp Lejeune has long been an essential element of the demography and economy of both Jacksonville and Onslow County. As the base population has grown, it has become an increasing influence on the demographics of Pender and Carteret Counties. Table 3.2-1 shows more than two decades worth of estimates of the military population associated with MCB Camp Lejeune. In the context of a total tri-county population of 250,820 in 2000 (US Census Bureau, May 2007), the predominance of the military population is apparent. Moreover, there has been a notable increase in the military population within the ROI since 2000.

Table 3.2-1

Military Population in the MCB Camp Lejeune Vicinity 1985-2006

Year	Active Duty Personnel	Total Family Members of Active Duty Personnel	Total Retired & Family Members	Civilian Employees	Total
1985 ¹	43,304	31,674	33,351	4,489	112,818
1990 ¹	44,026	52,565	25,033	4,691	126,315
1991 ¹	46,001	54,871	25,678	4,470	131,020
1996 ¹	41,110	57,000	23,970	4,800	126,880
2001 ²	37,491	53,051	42,012	4,851	137,405
2003 ³	37,220	53,614	42,564	4,883	138,280
2005 ⁴	43,974	38,719	64,891	4,321	151,905
2006 ⁵	42,241	45,160	67,967	4,627	159,995
Sources: 1. Onslow County, February 2000. 2. USMC, 2001. 3. USMC, November 2007 4. MCB Camp Lejeune, October 2005. 5. MCB Camp Lejeune, January 2007.					

Table 3.2-2 shows the total population for the ROI, recent trends, and year 2010 population projections. Onslow County has the largest population within the ROI. Jacksonville City is wholly located within Onslow County. For all three counties, there was an approximately 30 percent increase in population in the 1980s. Whereas the population in Onslow County remained relatively unchanged between 1990 and 2000, the populations of Pender and Carteret Counties grew by 42.4 percent and 12.9 percent, respectively. The annexation of the MCB Camp Lejeune population more than doubled the City of Jacksonville's population between 1990 and 2000, which otherwise remained stable during the course of the last decennial census. Although population numbers of Pender and Carteret Counties do not compare to Onslow County, they are steadily increasing. In fact, Pender County has the largest projected increase (27.2 percent) in population out of the entire ROI. This steady increase in population in Pender County may be due to its proximity to MCB Camp Lejeune.

Census data on the 2000 racial and ethnic make-up of the ROI are summarized in Table 3.2-3. The white and black populations of Onslow County are proportionate to North Carolina as a whole. However, Carteret County has the largest white population and the smallest black or African American population out of the entire ROI. Persons of Hispanic origin are more numerous in Onslow County (7.2 percent) and Jacksonville (10.0 percent) than in the state and Pender and Carteret Counties.

Table 3.2-2
Population Trends 1980-2010

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

Note: n/a = not available
 Sources: 1. US Census Bureau, 1990.
 2. US Census Bureau, May 2007.
 3. North Carolina State Demographics Unit, May 2007.

Table 3.2-3
Race and Ethnicity 2000 (percent)

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

Notes: 1. Having origins in any of the black racial groups of Africa.
 2. Includes individuals of two or more races.
 3. Hispanic origin, may be of any race.
 Source: US Census Bureau, May 2007.

3.2.2 Income and Employment

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

Median household and family incomes, as well as percentages of persons living below the poverty level, as reported from the 2000 Census (and projected to 2005 where available), are shown in Table 3.2-4. Carteret County income data are most similar to the state income levels in 2000; Pender and Onslow Counties and Jacksonville City all had lower incomes than the state in 2000. However, Onslow County had median incomes more similar to the state as a whole in 2005. Jacksonville City had the highest percentage of persons below poverty while Carteret County had the lowest percentage. Jacksonville City and Onslow County had the lowest median household income.

Table 3.2-4
Income and Poverty

Jurisdiction	2000			2000 Per Capita Income
	Median Household Income	Median Family Income	Percent of Persons Below Poverty	
Pender County	35,902	41,633	13.6	17,882
Carteret County	38,344	45,499	10.7	21,260
Onslow County	33,756	36,692	12.9	14,853
Jacksonville City	32,544	33,763	14.1	14,237
North Carolina	39,184	46,335	12.3	20,307
Jurisdiction	2005			2005 Per Capita Income
	Median Household Income	Median Family Income	Percent of Persons Below Poverty	
Onslow County	41,242	44,956	18.2	17,123
North Carolina	40,729	49,339	15.1	20,307
Source: US Census Bureau, May 2007.				

Total employment in the tri-county area is 149,311, with Onslow County contributing 65.8 percent (98,304 jobs), followed by Carteret County at 23.8 percent (35,601 jobs), and Pender County at 10.3 percent (15,406 jobs). Onslow County offers a different employment character than is typical for North Carolina as a whole. In 2005, government sector jobs represented 56.7 percent of the jobs in Onslow County, significantly more than the state’s share at 15.7 percent. Pender County and Carteret County more closely matched the state at 16.9 percent and 14.5 percent, respectively. Whereas military jobs comprise 77.4 percent of the government jobs in Onslow County, military jobs comprise 8.2 percent of the government jobs in Carteret County and 4.3 percent of the government jobs in Pender County, as compared to 15.7 percent of government jobs in North Carolina as a whole (US Department of Commerce, June 2007).

As seen in Table 3.2-5, compared to North Carolina as a whole, the ROI, and Carteret County in particular, is less involved in manufacturing, reflecting in part their distance from both major population centers and the state’s principal transportation networks. The educational, health and social services sector is the largest employer in the tri-county region. Construction and retail trade industries provide a higher share of employment within the ROI than they do in the state.

Table 3.2-5
Employment by Principal Private Industries 2000

Industry Description	Number of Employees			
	Pender County	Carteret County	Onslow County	North Carolina
Manufacturing	2,632	2,043	2,682	755,252
Agriculture, forestry, fishing and hunting, and mining	630	805	996	61,185
Wholesale Trade	645	733	943	131,330
Construction	2,468	3,042	5,022	312,038
Retail Trade	2,367	3,495	7,496	439,868
Information	253	494	1,393	89,797
Finance, insurance, real estate, and rent and leasing	749	1,643	2,234	231,222
Professional, scientific, mgmt., administrative, and waste mgmt. services	1,313	1,894	3,224	296,075
Educational, health and social services	2,704	4,881	10,865	733,440
Arts, entertainment, recreation, accommodation and food services	953	2,776	4,790	265,585
Other Services (except public administration)	1,089	1,394	2,564	176,908
Source: US Census Bureau, May 2007.				

Average annual pay is significantly lower in the ROI than for North Carolina as a whole, as shown in Table 3.2-6. On average, federal jobs provide the highest wages in the tri-county region and in the state. Although the average annual pay for federal jobs in Carteret County and the state is higher than in Onslow County, the average annual pay for federal jobs in Onslow County grew much faster from 2004 to 2005, at a rate of 9.7 percent.

Table 3.2-6
Average Annual Pay 2004-2005

	2004	2005	Percent Change
Pender County			
All Industries	23,951	25,188	5.2
Federal Government	35,914	36,183	0.7
State Government	30,524	31,569	3.4
Local Government	29,058	30,507	4.9
Private Industry	22,133	23,408	5.7
Carteret County			
All Industries	23,596	24,290	2.9
Federal Government	50,705	53,075	4.7
State Government	30,688	31,220	1.7
Local Government	31,237	31,608	1.2
Private Industry	21,463	22,185	3.4
Onslow County			
All Industries	23,969	24,803	3.5
Federal Government	34,278	37,620	9.7
State Government	24,764	21,636	-12.7
Local Government	29,899	30,736	2.8
Private Industry	20,803	21,506	3.4
North Carolina			
All Industries	34,791	35,912	3.2
Federal Government	50,808	52,288	2.9
State Government	35,999	36,998	2.8
Local Government	33,098	34,176	3.3
Private Industry	34,634	35,764	3.3
Source: Based on Department of Labor, Bureau of Labor Statistics, May 2007.			

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

3.2.3 Housing

MCB Camp Lejeune has ten different housing areas, which include approximately 4,450 family housing units. 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, August 2005).

Table 3.2-7 presents selected housing statistics. The 2000 census recorded 55,726 total housing units in Onslow County, of which 27 percent were built during the previous decade (US Census Bureau, May 2007). Within the ROI, Pender County had the lowest total housing units at 20,798; however, the percentage of owner occupied units (82.6 percent) was higher than any other county in the ROI and in the state as a whole. In 2000, Onslow County occupied housing accounted for 48,122 units while Pender County occupied housing was 16,054 units. In Onslow County, rental units accounted for almost 42 percent of the occupied units, as compared to the state proportion of 31 percent and Carteret and Pender Counties' proportions of 23 and 17 percent respectively. In 2000, the average household size in Onslow County was 2.72, compared to 2.49 for the state and for Pender County (US Census Bureau, May 2007). Carteret County had the smallest household size at 2.31.

Table 3.2-7

Housing Units 2000

Jurisdiction	Total Units	Occupied Units		Percent Vacant	Median	
		Percent Owner	Percent Renter		Gross Rent \$ ¹	Value ²
Pender County	20,798	82.6	17.4	22.8	491	86,900
Carteret County	40,947	76.6	23.4	38.4	511	106,400
Onslow County	55,726	58.1	41.9	13.6	518	78,200
North Carolina	3,523,944	69.4	30.6	11.1	548	108,300
Notes: 1. Gross monthly rent. 2. Value of owner-occupied units. Source: US Census Bureau, May 2007.						

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

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

3.2.4 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.

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.”

Table 3.2-3 presents the racial and ethnic characteristics of the tri-county region compared to the state of North Carolina, 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, Pender and Onslow Counties have similar racial and ethnicity population characteristics. The relative proportions of blacks or African Americans, and American Indians and Alaska natives are lower in Carteret County in comparison to the ROI, Jacksonville City, and all of North Carolina.

Children do not reside near or spend any time in the vicinity of the proposed Wallace Creek Regimental Area. The location for the proposed complex is within federal property with access restricted to military personnel and others as authorized by military authority.

3.3 COMMUNITY FACILITIES AND SERVICES

3.3.1 Emergency Services

MCB Camp Lejeune

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

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, August 2005).

Onslow County

Onslow County Department of Emergency Services consolidates under one department several emergency service agencies: the Emergency 911 Communications Center, Emergency Management Office, Emergency Medical Services (EMS), Hazardous Materials Management, Fire Marshal's Office, and Safety and Security (Onslow County Emergency Services, May 2007). The Emergency Services Department coordinates with nine volunteer rescue squads and 20 volunteer fire departments.

Onslow County Sheriff's Office provides public safety services throughout most of the county, excluding MCB Camp Lejeune, Marine Corps Air Station New River, Hofmann State Forest, Hammock Beach State Park, and the county's six municipalities, including the City of Jacksonville. The sheriff's office is organized into 13 principal divisions, units, and programs and is headquartered on Mill Avenue in Jacksonville (Onslow County Sheriff's Office, May 2007).

Pender County

Pender Volunteer EMS and Rescue is charged with providing emergency medical services, crash rescue, search and rescue, and medical transport services across the 2,220 square kilometers (857 square miles) of Pender County. Pender EMS and Rescue assets include six paramedic ambulances, two paramedic quick response vehicles, two heavy rescue trucks, and four patient care transport trucks. Seventy full-time and 33 part-time employees, along with volunteer members, staff the program (Pender EMS & Rescue, Inc., May 2007).

Pender County Sheriff's Department is the principal law enforcement agency of Pender County. The sheriff's department patrols the county, investigates crimes, apprehends criminals,

and provides custody or control for arrested defendants, both pre-trial and sentencing. The Sheriff is responsible for courtroom security, service of civil process, transportation of prisoners, mental patients, and service of criminal papers. The Pender County Sheriff's Department is located at 605 E. Fremont Street in Burgaw, NC (Hampstead Chamber of Commerce, May 2007).

Carteret County

The Emergency Services Department of Carteret County serves as a liaison between the County and the 15 EMS providers in Carteret County. The County's EMS and rescue squads are a combination of both paid and independently chartered private, non-profit corporations that provide emergency medical and rescue services to local government within designated EMS and Rescue districts. The County's volunteer fire departments are independently chartered private, non-profit corporations that provide firefighting to local government within designated fire districts (Carteret County Emergency Services, May 2007).

The Sheriff's Department patrols unincorporated areas of Carteret County, responds to calls for service, and investigates crimes in these areas. The Sheriff's Department also serves criminal papers and civil papers, provides courtroom security, and operates the E-911 communications center. The Sheriff is also responsible for the operation of the county jail in Beaufort, NC. The Teen Court program also reports to the Sheriff (Carteret County Sheriff, May 2007).

3.3.2 Hospitals

MCB Camp Lejeune

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

Onslow County

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

Pender County

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

Carteret County

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

3.3.3 Schools

School-age children of military families residing on Base attend the MCB Camp Lejeune Dependents Schools system. Camp Lejeune Dependents Schools operate five elementary schools, one middle school, and one high school. Table 3.3-1 shows the approximate yearly capacity and enrollment of students and approximate yearly staff among these schools. Total enrollment in Camp Lejeune Dependents Schools varies yearly.

Camp Lejeune Dependents Schools receives 100 percent of its funding from the federal government through a direct Department of Defense (DoD) appropriation. The \$32 million budget includes \$29 million for civilian labor and \$3 million for other school expenses (USMC, 2005).

Table 3.3-1
Schools in the MCB Camp Lejeune Dependents Schools District – 2006-2007 School Year

School (Grades)	Approximate Yearly Capacity	Projected Yearly Enrollment	Approximate Yearly Staff
Bitz Intermediate (PK-5) ¹	600	544	70
DeLalio (PK-5)	340	321	33
Johnson Primary (PK-2) ¹	800	787	100
Tarawa Terrace 1 (PK-1)	400	235	35
Tarawa Terrace 2 (KN-5)	525	356	44
Brewster Middle (6-8)	840	570	53
Lejeune High (9-12)	800	442	50
Total	4305	3255	385

Notes: 1. Bitz Intermediate (PK-5) and Johnson Primary (PK-2) are new schools.
Source: Dargan, James –Camp Lejeune Dependents Schools, April 2006.

Onslow County

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

Onslow County's public schools currently include 18 elementary schools, 8 middle schools, 7 high schools, and one alternative school, the Onslow County Learning Center (Onslow County Schools, August 2006). For the 2006-2007 school year, the total enrollment was approximately 27,014 students and the total membership was approximately 22,461 students (Grantham, January 2008). (Membership is the actual headcount of students enrolled and is a snapshot of one particular day.)

Table 3.3-2 provides the student membership and school capacity for the elementary, middle, and high schools in the Onslow County public school system.

Table 3.3-2

Onslow County Public School Membership and Capacity – 2006-2007 School Year

Schools	Capacity	Membership	
	Students	Students ¹	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
Notes: ¹ ADM for June 2007. Source: Grantham, January 2008; Hudson, February 2008.			

The data in Table 3.3-2 indicate that membership in Onslow County elementary schools exceeds capacity by 12 percent. The middle and high schools are operating near capacity, with membership at approximately 98 percent of available capacity. Generally, the school system is at maximum capacity at all 34 schools. Onslow County Schools is currently redistricting the elementary schools to balance the capacities and enrollments. In addition, two new elementary schools are being constructed. Meadow View Elementary School will open for the 2008-2009 school year with a capacity of 805 students and Stateside Elementary School will open in 2009 with a capacity of 800 (Hudson, February 2008 and Hudson, June 2008). The effect of Camp Lejeune military families on the Onslow County School's population is recognized as a significant factor when it comes to exceeding capacity. Approximately one-third of the students

in the Onslow County public school system are military connected and some of those students move into or out of the school system or move between schools within the system during the school year (Hollamon, January 2008).

Onslow County public schools operate on a total budget of approximately \$188 million. The per student expenditure was \$7,588 for the 2006-2007 school year, including the child nutrition program (Hollamon, January 2008). MCB Camp Lejeune supports the Onslow County schools system by contributing 40 percent of the net proceeds from Camp Lejeune’s sale of timber products. Although timber sales do not produce revenue every year, in fiscal year 2005, this contribution totaled \$28,784 (USMC, 2005).

Pender County

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

Table 3.3-3 provides the student membership and school capacity for the elementary, middle, and high schools in the Pender County public school system.

Table 3.3-3

Pender County Public School Membership and Capacity – 2006-2007 School Year

Schools	Capacity	Membership	
	Students	Students ¹	Percent of Capacity
Elementary	3,258	3,517	107.9
Middle	1,936	1,821	94.1
High	2,065	2,293	111.0
Total	7,259	7,631	105.1
Note: Elementary schools total include the Rocky Point Primary School. Topsail Elementary school is a new school and there is no 06-07 data for this school. Source: Pender County Schools, May 2007.			

The data in Table 3.3-3 indicate that membership in Pender County elementary schools exceeds capacity by 8 percent and the high schools exceed capacity by 11 percent. The middle schools are operating near capacity, with membership at approximately 94 percent of available capacity. Generally, the school system is at maximum capacity at all 16 schools. For the 2005-2006 school year, Pender County public schools operated on a total budget of approximately \$63 million. The per student expenditure was \$7,142 for the 2005-2006 school year, including the child nutrition program (Chestnutt, May 2007).

Carteret County

During the 2005-2006 school year, there were five religious schools in Carteret County serving grades kindergarten to 12 (North Carolina Division of Non-Public Education, May 2007). Total enrollment for the five non-public schools was 425 students. Carteret County's public schools currently include eight elementary schools, four middle schools, three high schools, one primary school, and one alternative school (Bridges Alternative School) (Carteret County Schools, May 2007). For the 2006-2007 school year, the total enrollment was approximately 7,695 students (Courtney, May 2007).

Table 3.3-4 provides the student enrollment and school capacity for the elementary, middle, and high schools in the Carteret County public school system.

Table 3.3-4

Carteret County Public School Enrollment and Capacity – 2006-2007 School Year

Schools	Capacity	Enrollment	
	Students	Students ²	Percent of Capacity
Elementary ¹	5,096	3,870	75.9
Middle	2,392	1,725	72.1
High	2,967	2,671	90.0
Total	10,455	8,266	79.1
Notes: ¹ Includes the Morehead Primary School ² Student enrollment numbers based on the State's determination as of October 2006. *The Bridges Alternative School enrollment/capacity is not included Source: Carteret County Schools, May 2007.			

The data in Table 3.3-4 indicate that the school system is generally operating under capacity. The enrollment in Carteret County high schools is operating at 90 percent capacity, which is near capacity. For the 2005-2006 school year, Carteret County public schools operated on a total budget of approximately \$74 million. The per student expenditure was \$8,444 for the 2005-2006 school year, including the child nutrition program (Ipock, May 2007).

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, August 2005). Impact aid provides the school district a payment in lieu of these lost taxes to assist with the basic educational needs of its students.

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

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

The Onslow County school district reported 8,664 federally connected students for the 2006-2007 school year (Hollamon, January 2008). Of the 8,619 federally connected students reported in the 2005-2006 school year, 6,652 were children of active-duty military personnel and 1,967 were children of civilian personnel. 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, May 2006). The remainder was associated with Marine Corps Air Station Cherry Point and Seymour Johnson Air Force Base. Onslow County Schools received \$2.8 million in federal impact aid in FY 2007 (Hollamon, January 2008).

Carteret County received \$16,247 in federal impact aid in 2005, considerably less than Onslow County. Pender County did not report any federal impact aid in 2005. It is reasonable to assume that the school district does not educate at least 400 federally connected children or the federally connected children do not make up at least three percent of the school district's total average daily attendance (FedSpending.org, May 2007).

3.3.5 Recreational Facilities

MCB Camp Lejeune

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

- An archery range
- A skeet/trap shooting range
- Two marinas
- Two campgrounds
- Picnic areas
- Horse stables
- Two golf courses
- 124 athletic fields
- 62 tennis courts

- 21 handball/racquetball/squash courts
- 39 basketball courts
- A bowling center
- Two physical fitness centers
- A swimming/surfing beach complex
- A fishing pier
- Five swimming pools
- Three movie theaters
- Six hobby shops
- Four recreation/community centers
- A youth center

Onslow County

The Onslow County Parks and Recreation Department operates seven district parks, four regional beach access sites on North Topsail Beach, and a kayak and canoe paddling trail (Onslow County Parks and Recreation Department, April 2006). 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 mi) kayak and canoe paddling trail travels the New River stopping at the Rhodestown Landing, the Burton Industrial Park Landing, and finally, the New River Waterfront Park in Jacksonville (Onslow County Parks and Recreation Department, April 2006).

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 Camp Lejeune. The City of Jacksonville operates parks, playgrounds, recreational centers, a skate park, and a system of trails and greenways.

Pender County

Pender County's Holly Shelter Game Preserve is the largest state-controlled hunting preserve on the East Coast. Bird watching, turtle watching, and dolphin and whale watching are among the favorite pastimes on Topsail Island. In central and western Pender County, strawberry and blueberry farms offer pick-your-own opportunities in May and June. On Topsail Island, a wide range of beach cottages, townhouses, condominiums, and motels, plus campgrounds for tents, trailers, and recreational vehicles (RV campers) are available. The Kirkwood Camp and Conference Center also offers meeting facilities and accommodations in a beautiful woodland setting for group retreats and conferences (Pender County Tourism, May 2007).

Carteret County

Carteret County has seven parks that offer athletic fields, play lots, picnic shelters, and comfort stations. In addition to the parks, there are several picnic areas, two water access areas in Beaufort, NC, and a fishing pier and beach access on Harkers Island (Carteret County Parks and

Recreation, May 2007). Harkers Island is home to the Cape Lookout National Seashore. This park offers a variety of things to do including: shelling, fishing, swimming, camping, birding, horse watching, hunting, and hiking (National Park Service, May 2007).

3.4 TRANSPORTATION AND TRAFFIC

The main roads in the vicinity of Camp Lejeune are US 17 and NC Route 24 (Figure 1-1). US 17 runs roughly north-south, connecting Jacksonville with Wilmington, North Carolina 82 km (51 mi) to the south and New Bern, North Carolina 58 km (36 mi) to the north. NC Route 24 is an east-west road, connecting Jacksonville with Morehead City, North Carolina to the east and Fayetteville, North Carolina to the west. Other public roads near Camp Lejeune include NC Route 210 and NC Route 172. A portion of NC Route 172 is aligned through the southern area of the Base.

Access to Camp Lejeune is primarily provided by four major gates: Holcomb Boulevard/Main Gate from NC Route 24, Piney Green Gate from NC Route 24, Triangle Outpost Gate from NC Route 172, and Sneads Ferry Gate from NC 172. Construction vehicles are encouraged by the Base to use the Piney Green Gate.

The proposed project area is accessed via Holcomb Boulevard, a major entrance road to MCB Camp Lejeune. This road crosses the proposed project area along the eastern third of the site. Further access to the site can be achieved via Birch Street and Parachute Tower Road as well as Main Service Road.

Traffic in the Hadnot Point area is somewhat typical of a commercial urban area. Table 3.4-1 shows 2003 level of service (LOS) data for intersections in the Hadnot Point area. The LOS data are useful in understanding how well an intersection is operating, with LOS A indicating the best and LOS F the worst.

Table 3.4-1

Level of Service Values for Intersections Near the Proposed Project Area

Location	LOS ¹
Intersections Near Proposed Wallace Creek Regimental Area	
McHugh Boulevard/Gonzales Boulevard	B
Sneads Ferry Road/Lyman Road	C
Sneads Ferry Road/Gonzales Boulevard	B
Notes: 1. Data reflect the lowest LOS from three recorded times: AM peak hour, Midday peak hour, and PM peak hour.	
Source: Ramey Kemp & Associates, June 2003.	

Under a separate project (Proposed Security Gate Upgrades, Road Improvements, and Landfill Expansion) described in Subchapter 1.4, the USMC is planning to construct and upgrade the Main Gate and Piney Green Gate and make associated road improvements to Old Saw Mill Road and Piney Green Road. 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.

3.5 AIR QUALITY

3.5.1 National Ambient Air Quality Standards and Attainment Status

Both government and the general public are concerned about the quality of the air we breathe. Air quality is of concern relative to the proposed action because its implementation has the potential to introduce air pollutants to the atmosphere. Each state implements programs to monitor and control air pollutant emissions in accordance with the requirements of the 1970 Clean Air Act (CAA) via State Implementations Plans and permitting requirements.

The US Environmental Protection Agency (USEPA), under requirements of the CAA as amended in 1977 and 1990, established National Ambient Air Quality Standards (NAAQS) for six contaminants, referred to as criteria pollutants (40 CFR Part 50). These are: carbon monoxide, lead, nitrogen dioxide, particulate matter (PM), ozone, and sulfur oxides. Ozone is formed as a result of complex photochemical reactions in the atmosphere between volatile organic compounds, nitrogen oxides, and oxygen. Therefore, ozone is controlled by strictly limiting emissions of volatile organic compounds and nitrogen oxides in areas where ozone is a problem.

The NAAQS include primary and secondary standards. Primary standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings. The primary and secondary standards are listed in Table 3.5-1. The North Carolina Department of Environment and Natural Resources (NCDENR) has an additional standard for total suspended particulates, which is also included in Table 3.5-1.

Areas that meet the NAAQS for a criteria pollutant are designated as being in "attainment." Where the criteria pollutant level exceeds the NAAQS, those areas are designated as being in "nonattainment."

Table 3.5-1

National Ambient Air Quality Standards

Pollutant	Averaging Time	NAAQS	
		Primary NAAQS	Secondary NAAQS
Carbon Monoxide	8 Hour	9 ppm (10 mg/m ³)	None
	1 Hour	35 ppm (40 mg/m ³)	None
Lead	Quarterly Average	1.5 µg/m ³	Same as Primary Standard
Nitrogen Dioxide	Annual Arithmetic Mean	0.053 ppm (100 µg/m ³)	Same as Primary Standard
Particulate Matter (PM ₁₀)	Annual Arithmetic Mean	Revoked	-
	24 Hour	150 µg/m ³	-
Particulate Matter (PM _{2.5})	Annual Arithmetic Mean	15 µg/m ³	Same as Primary Standard
	24 Hour	35 µg/m ³	-
Ozone	8 Hour	0.075 ppm (157 µg/m ³)	Same as Primary Standard
	1 Hour	0.12 ppm (235 µg/m ³)	
Sulfur Oxides	Annual Arithmetic Mean	0.03 ppm (80 µg/m ³)	-
	24 Hour	0.14 ppm (365 µg/m ³)	-
	3 Hour	-	0.50 ppm (1,300 µg/m ³)
North Carolina TSP Standard	Annual Geometric Mean	75 µg/m ³	
	24 Hours	150 µg/m ³	-

Notes: ppm = parts per million, µg/m³ = micrograms per cubic meter
Source: USEPA, May 2007.

Camp Lejeune and Onslow County are located in the Southern Coastal Plain Intrastate Air Quality Control Region (defined in 40 CFR Part 81.152), which is comprised of 13 counties. Each of the 13 counties that make up this region has been designated as being in attainment for all criteria pollutants (40 CFR Part 81.334).

Under Title V of the CAA, Camp Lejeune is required to obtain a Title V operating permit, which is issued by the NCDENR Division of Air Quality under the provisions of Article 21B of Chapter 143, General Statutes of North Carolina as amended and 15A North Carolina Administrative Code (NCAC) Subchapters 2D and 2Q. Camp Lejeune's "Air Quality Federal Title V and State Operation Permit" and "Air Quality State Construction Permit" authorizes the Base to operate and construct certain emission sources and associated air pollution control devices. This permit involves intensive monitoring, record keeping, and reporting requirements for approximately 800 different sources, such as external and internal combustion sources, surface coating operations, and engine testing operations.

3.5.2 General Conformity

The Clean Air Act Amendments (CAAA) of 1990 expand the scope and content of the CAA's conformity provisions by providing a more specific definition of conformity. As stipulated in CAAA Section 176(c), conformity is defined as "conformity to the State Implementations Plan's purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of such standards."

The USEPA published final rules on general conformity that apply to federal actions in areas designated nonattainment for any of the criteria pollutants under the CAA (40 CFR Parts 51 and 93) in the November 30, 1993 *Federal Register*. Since the proposed action would occur within an attainment area, this rule is not applicable to the project.

3.6 NOISE

Noise is one of the most common environmental issues associated with military operations such as weapons firing, demolitions, and aircraft operations. Noise levels are measured in units called decibels (dB). 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.

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 1 - acceptable for noise sensitive land uses
- Noise Zone 2 – normally not recommended for noise sensitive land uses
- Noise Zone 3 – not recommended for noise sensitive land uses (US Army Center for Health Promotion and Preventative Medicine [USACHPPM], November 2005)

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

The most recent noise study completed for MCB Camp Lejeune is a June 2007 study prepared by the USACHPPM to include existing and future noise contours (USACHPPM, June 2007). According to the contours of the June 2007 noise study, the project area is situated in Noise Zone 2 with C-weighted day-night average sound levels between 62 and 70 C-weighted decibel (dBC). There are no noise sensitive receptors, such as family housing, hospitals, or schools, within the immediate vicinity of the proposed project area. There are BEQs within the proposed project area.

3.7 INFRASTRUCTURE AND UTILITIES

3.7.1 Water Supply

The proposed project area is within the Hadnot Point community water system, which obtains water from 31 groundwater wells located on Base. Groundwater is pumped from the Castle Hayne aquifer, approximately 55 m (180 ft) below the ground. This water is pumped from the wells to a water treatment plant located on the main portion of the Base. As the raw water enters the storage reservoir, sodium hypochlorite is added to the water to protect against microbial contamination. Treated water is pumped from the reservoir and distributed throughout the Hadnot Point community water system. The Hadnot Point water treatment plant (WTP) has a 19 million liter per day (mld) (5 million gallons per day [mgd]) treatment capacity. The estimated average annual demand on the Hadnot Point WTP is 10.8 mld (2.85 mgd) (Sides, 2004/2005, in DoN, August 2005).

3.7.2 Wastewater

Wastewater at Camp Lejeune is conveyed to the wastewater treatment plant (WWTP) located in the French Creek area. The WWTP's process and sludge handling systems were designed for an average daily flow of 57 mld (15 mgd), and are currently processing approximately 19 mld (5 mgd) (Whited, February 2008). Camp Lejeune's National Pollutant Discharge Elimination System (NPDES) permit allows the discharge of up to 57 mld (15 mgd) through a diffuser into the New River. A portion of the wastewater residuals (bio-solids) is applied to approximately 690 ha (1,705 ac) of the Base's forested lands and open areas under Camp Lejeune's Residuals Application Program (MCB Camp Lejeune, Environmental Management Department, July 2006).

Under a separate project (Proposed Wastewater System Modifications and Upgrades) described in Subchapter 1.4, the USMC is planning to construct a series of upgrades and modifications to the existing wastewater collection and treatment system at MCB Camp Lejeune. These upgrades and modifications will provide parallel force main river crossings at the New River, Scales Creek, Northeast Creek, and Wallace Creek; construct a new lift station near Parachute Tower Road with a connection to the existing wastewater line; and replace an existing force main near Gonzales Boulevard. Additionally, the USMC will be constructing a new force main from US 17 along Verona Loop Road through the K Range area, under the New River and connecting to an existing force main that ultimately discharges to the WWTP at French Creek. The USMC also plans to construct a new pump station at the newly established MARSOC complex and near Verona Loop Road. Together these improvements to the wastewater system will improve the efficiency of the existing wastewater collection and treatment system. Specifically, the improvements will provide a backup system in the event of breakage or damage to the existing force main, while maintaining sufficient wastewater disposal capacity to support existing

operations on Base as well as the future needs of tenant commands, Base operations, and residents. These upgrades and modifications will facilitate the ability of MCB Camp Lejeune to meet the increasing demands on the Base wastewater disposal infrastructure resulting from planned population growth.

3.7.3 Electricity

The Progress Energy Company (formerly Carolina Power and Light Company) is the primary provider of electricity to Camp Lejeune, with Jones-Onslow Electric Membership Corporation as an additional source. There are no electrical supply or capacity issues at Camp Lejeune (Caston, January 2007).

3.7.4 Natural Gas

Piedmont Natural Gas is the local provider of natural gas to Camp Lejeune. There are no issues with natural gas capacity.

3.7.5 Solid Waste

Solid waste that is not reused or recycled is transported to the Base landfill located on Piney Green Road. Solid waste is visually monitored prior to entering the landfill. Waste that can be recycled is diverted to one of several recycling facilities: materials recovery, compost recycling, wood waste recycling, and construction and demolition debris recycling (MCB Camp Lejeune, Environmental Management Department, August 2006b). The rate of solid waste disposal at Camp Lejeune is rather variable, but averages approximately 3,583 metric tons per month (3,950 tons per month) (MCB Camp Lejeune, Public Works Division, July 2006).

The Base landfill is divided into five phases, with each phase expected to provide the capacity for five years of waste. Phase I of this landfill was used from 1998 to 2004. Phase II has been in operation since 2004 and is expected to close around 2010 (MCB Camp Lejeune, Public Works Division, July 2006). Phase III of the landfill is expected to be ready in late 2008, and should accommodate another five to six years of solid waste disposal capacity. Phases IV and V would be constructed when the previous phase nears its capacity. The Base landfill is expected to remain open until roughly 2030 (MCB Camp Lejeune, Environmental Management Department, January 2007).

3.7.6 Stormwater

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

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

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

3.8 CULTURAL RESOURCES

Camp Lejeune manages a variety of historic and prehistoric cultural resources. They 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 Department, August 2006a). In addition to extensive archaeological resources, Camp Lejeune also manages historic architectural properties. Camp Lejeune was constructed during the mobilization of the Marine Corps during World War II, and many of its buildings and developed areas remain as they were originally constructed and retain a high degree of historical integrity (MCB Camp Lejeune, Environmental Management Department, August 2006a).

3.8.1 Historic Resources

The proposed project area includes a historic district that was identified as being eligible for listing on the National Register of Historic Places (NHRP) during a historic architectural evaluation of Camp Lejeune's World War II-era construction. The Parachute Training Historic District, which is significant for its association with the paratroop training mission of Camp Lejeune during World War II (criterion A) and for embodying the distinctive characteristics of a specialized building developed by the military for the training of its personnel in particular skills (criterion C), consists of three discontinuous contributing resources: PT-4, PT-5, and PT-6.

Figure 3-1, Cultural Resources at the Wallace Creek Regimental Area, shows the locations of these resources. PT-4, PT-5, and PT-6 are the only extant resources of Camp Lejeune's parachute training facilities, which were established in mid-1942. Each of these three facilities originally consisted of a 76-m (250-ft) tall steel training tower supported by concrete footers at the corners of a two-story equipment building; the steel towers no longer stand. The North Carolina State Historic Preservation Office (NC SHPO) concurred that the Parachute Training Historic District is eligible for inclusion in the NRHP in June 2004 (Brook, June 2004) (Appendix A). For each building, the NRHP boundary extends 15.2 m (50 ft) from each elevation and includes the concrete footers (Dixon and Bowers, February 2000). The roadway running along the three buildings, Parachute Tower Road, is considered a non-contributing element in the district.

3.8.2 Archaeological Resources

Archaeological surveys of all high-probability soils within the project area have been undertaken. Three potentially eligible archaeological sites were identified within the boundaries of the proposed project area: 31ON1059, 31ON1077, and 31ON1132. These areas were discussed at the project kickoff meeting held at MCB Camp Lejeune on Thursday, 08 March 2007. Phase II field survey and evaluation of these sites was completed in November 2007. Preliminary results of the survey indicate that all three sites do not meet the NRHP criteria for eligibility (Appendix A). Consultation with the NC SHPO on the final results of the Phase II survey was initiated by a letter from MCB Camp Lejeune to the NC SHPO on April 9, 2008 (Appendix A).

3.9 NATURAL RESOURCES

3.9.1 Geology, Topography, and Soils

Geology at the proposed project area consists of marine deposits that form a weakly dissected alluvial plain. The deposits are mostly clean sand and clayey sand, layered with deposits of clay and marine shells. Along the coast, stream sediment deposition and natural shore processes develop and maintain beaches, swamps, and mud flats.

Two primary geomorphic surfaces are identified at the project area:

- Pamlico surface, elevations of 0 to 7.6 m (0 to 25 ft) in narrow strips along the New River and its tributaries
- Talbot surface, elevations of 7.6 to 13.7 m (25 to 45 ft) underlying most of mainside Camp Lejeune

Topography at the proposed project area is variable. Generally speaking, the area is characterized by upland areas with gradual to moderate slopes toward inland watercourses. Upland area elevation generally ranges between 7.6 to 13.7 m (25 to 45 ft) above mean sea level while wetland area elevation ranges between 0 to 7.6 m (25 ft) above mean sea level.

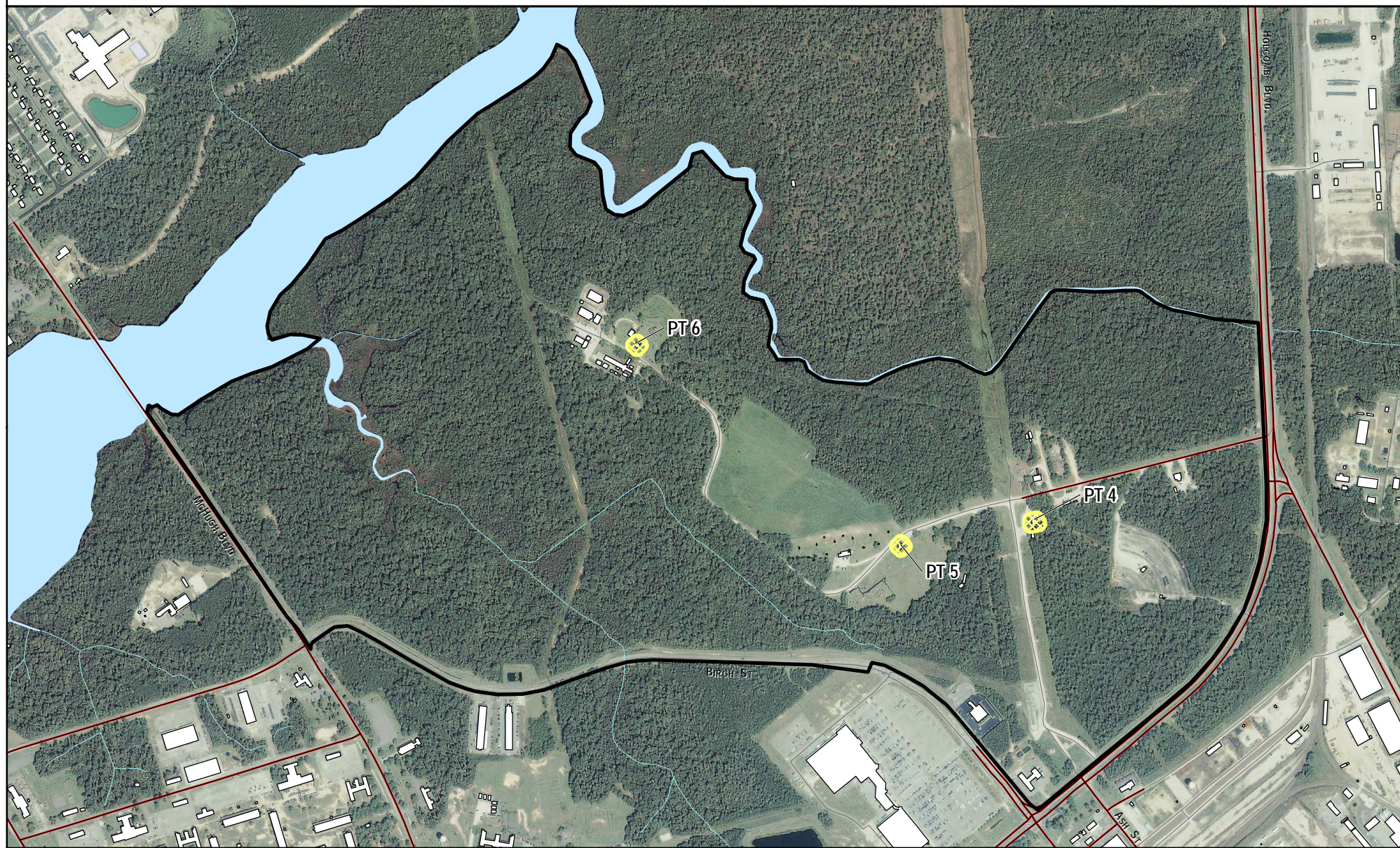
Soils at the proposed project area consist of Muckalee loam in wetland areas and change to Marvyn loamy fine sand, Pactolus fine sand, Onslow loamy fine sand, and Baymeade fine sand as one moves upward in elevation (Barnhill, July 1992). US Department of Agriculture Natural Resources Conservation Service soil descriptions for the soil types found in the proposed project area are summarized in Table 3.9-1.





Table 3.9-1

Summary of Soil Classes

Map Unit Name	Map Unit Description
Baymeade fine sand, 0 to 6 percent slopes	The Baymeade series consists of deep, well drained soils with moderately rapid permeability. They formed in loamy and sandy marine sediments of the lower Coastal Plain. Slopes range from 0 to 12 percent.
Marvyn loamy fine sand, 6 to 15 percent slopes	The Marvyn series consists of deep, well drained, moderately permeable soils that formed in loamy marine sediments on Coastal Plain uplands. Slope ranges from 0 to 15 percent.
Muckalee loam	The Muckalee series consists of poorly drained moderately permeable soils formed in loamy and sandy alluvium. These soils are on floodplains of streams in the Coastal Plain. Slopes range from 0 to 2 percent.
Onslow loamy fine sand	The Onslow series consists of moderately well drained and somewhat poorly drained soils that formed from moderately fine-textured Coastal Plain sediments. These soils are on nearly level to slightly convex divides of uplands. Slopes range from 0 to 3 percent.
Pactolus fine sand	The Pactolus series consists of moderately well drained and somewhat poorly drained soils that formed from sandy fluvial and marine sediments. Slopes range from 0 to 6 percent.
Source: US Department of Agriculture, Natural Resources Conservation Service, May 2007.	

Cultural Resources at the Wallace Creek Regimental Area



-  Cultural Resource 50 foot Boundary
-  Existing Building
-  Wallace Creek Regimental Area
-  Existing Streams and Ponds

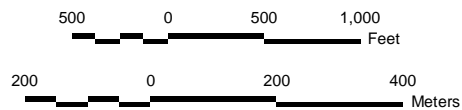


Figure 3-1



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3.9.2 Water Resources

No standing water bodies are located in the proposed project area; however, the surface water features located within the proposed project area include Wallace Creek, Beaverdam Creek, and Bearhead Creek. The water resources in the project area are shown on Figure 3-2, Water Resources at the Wallace Creek Regimental Area. These three tributaries flow into the New River and are considered inland waters as they have no direct access with the ocean. Approximately 1,822 m (5,978 linear ft) of intermittent streams and 8,830 m (28,970 linear ft) of perennial streams can be found throughout the project area in association with wetlands.

The creeks and portions of the New River closest to the project area are designated “Prohibited Areas” for shellfishing. “Prohibited Areas” are those areas that are administratively closed for the harvesting of shellfish for any purposes related to human consumption. 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).

High-density development near SA waters requires that there be no direct outlet channels or pipes to SA waters unless permitted in accordance with 15A NCAC 2H .0126. Additionally, BMPs must be infiltration systems designed to control the runoff from all surfaces generated by one and one-half inches of rainfall. Runoff in excess of the design volume must flow overland through a vegetative filter with a minimum length of 50 ft measured from mean high water of SA waters (15A NCAC 02H). There are no SA waters within the project area.

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” (NSW) 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” (HQW) are waters rated as excellent based on biological or physical/chemical characteristics (15A NCAC 02B). The North Carolina Marine Fisheries Commission has further designated these areas as “primary nursery areas” (15A NCAC 3N.0002). 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 (NC Division of Marine Fisheries, August 2006). There are no primary nursery areas within the project area. The closest primary nursery area is on the other side of the New River, directly to the west of the project area, approximately 1,250 m (4,100 ft) away. “Special secondary nursery areas” are located adjacent to “secondary nursery areas” but closer to the open waters of our

sounds and the oceans. The majority of the year when juvenile species are abundant, these waters are closed to trawling. There are no special secondary nursery areas within the project area. The lower reaches of Wallace Creek are considered special secondary nursery areas.

Wallace Creek

Wallace Creek is classified as SB, surface waters that are used for primary recreation, including frequent or organized swimming and all SC uses. In addition, Wallace Creek is considered NSW and is a tributary of the New River, generally flowing in a westward direction. Wallace Creek forms the western boundary of the proposed project.

Beaverdam Creek

Beaverdam Creek is also classified as SB and is considered NSW. Beaverdam Creek is a tributary of the New River and flows in a westward direction. The creek forms the northern boundary of the proposed project area.

Bearhead Creek

Bearhead Creek is located near the southwest extent of the proposed project area. Similar to Wallace and Beaverdam Creeks, it is classified as SB and is considered NSW. Bearhead Creek is a tributary of the New River and generally flows in a westward direction.

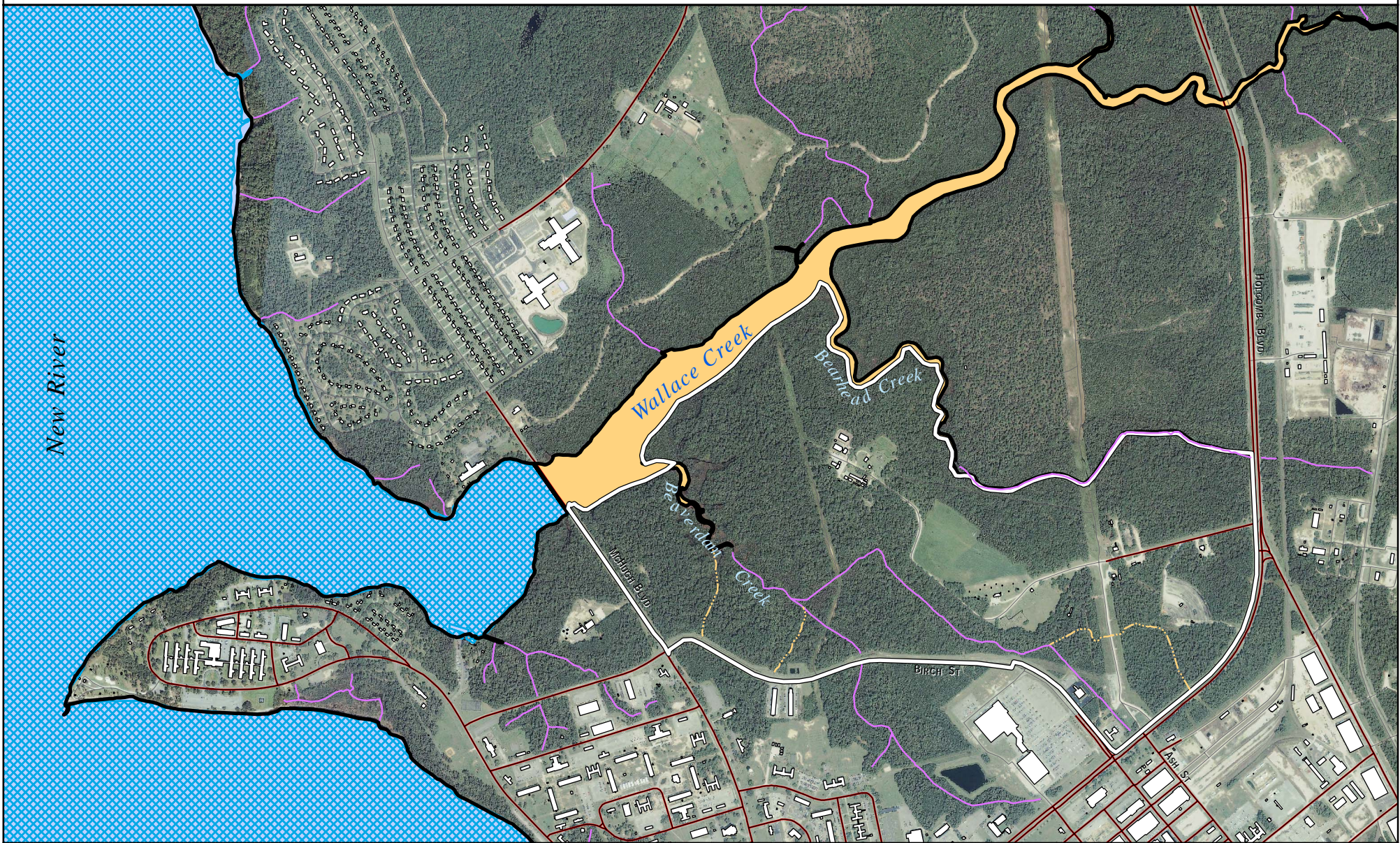
New River




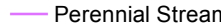

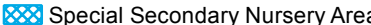

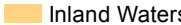
The proposed project area is not located directly adjacent to the New River, but all of the creeks described previously flow into the river. Within the New River estuary, all waters downstream from the Atlantic Coastline Railroad Trestle and north of Grey Point to the New River are classified as SC. In addition, all waters draining to the New River north of Grey Point are considered NSW. The New River and most tributary streams of the New River south of the City of Jacksonville have the additional designation of HQW (15A NCAC 3N.0002) and primary nursery areas (15A NCAC 3N.0002). The section of the New River nearest to the proposed project area is considered a special secondary nursery area (see Figure 3-2).

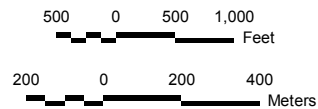
Groundwater

All of Onslow County, including Camp Lejeune, falls within the freshwater portion of the Castle Hayne aquifer. This aquifer is surficial or unconfined in that it overlies deeper aquifers confined by clay sediments. The Castle Hayne aquifer ranges 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 – 1.9 kiloliters per minute (200-500 gallons per minute) (NCDENR, Division of Water Resources, May 2007).

Water Resources at the Wallace Creek Regimental Area



-  Existing Building
-  Wallace Creek Regimental Area
-  Intermittent Stream
-  Perennial Stream
-  Shellfish Prohibited Area
-  Special Secondary Nursery Areas
-  Coastal Waters
-  Inland Waters



Water Classifications
 Wallace Creek – is classified as SB and is considered "Nutrient Sensitive Waters" (NSW)
 Bearhead Creek – is classified as SB and is considered NSW
 Beaverdam Creek – is classified as SB and is considered NSW
 New River – is classified as SC (from the Atlantic Coastline Railroad Trestle to Grey Point) and is considered NSW.



Figure 3-2

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3.9.3 Wetlands and Floodplains

Wetlands

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

Development is proposed for roughly 122 ha (302 ac) of the entire 223 ha (551 ac) project area, although a much broader area, 383 ha (946 ac), was field surveyed to determine wetland boundaries in April 2007 (NAVFAC Atlantic, November 2007). The US Army Corps of Engineers, Wilmington District personnel field verified the delineated wetland boundaries at Wallace Creek on 3 May 2007. There were 99 ha (245 ac) wetland acres delineated in the Wallace Creek area.

The Wallace Creek project area includes three wetland systems: estuarine, riverine, and palustrine. The majority of the delineated wetlands were palustrine forested (90 ha [223 ac] or 91 percent) and occur along the floodplain of Wallace Creek and in association with stream tributaries of Bearhead Creek and Beaverdam Creek. Palustrine scrub-shrub wetlands (1.8 ha [4.5 ac]) and one isolated, emergent wetland (0.5 ha [1.3 ac]), were associated with a power line right of way in the project area. Estuarine wetlands 5 ha (12.4 ac) were found in proximity to Wallace Creek, while riverine wetlands 1.3 ha (3.14 ac) were identified in the upper reaches of Beaverdam Creek. Of the 223 ha (551 ac) project area, approximately 39 ha (97 ac) are wetlands. Figure 3-3, Wetlands and Floodplains at Wallace Creek Regimental Area, shows the wetlands, which have been identified and delineated within the project area.

Floodplains

Executive Order 11988, *Floodplain Management*, sets forth the responsibilities of federal agencies for reducing the risk of flood loss or damage to personal property, minimizing the impacts of flood loss, and restoring the natural and beneficial functions of floodplains. This order was issued in furtherance of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. Floodplains and flood hazard zones are generally present throughout MCB Camp Lejeune near the New River and its creeks and estuaries.

The 100-year floodplain for Beaverdam and Bearhead Creeks extend southeastward into the Wallace Creek Regimental Project Area. Approximately 32 ha (80 ac) of floodplains are present in the project area (Figure 3-3).

3.9.4 Vegetation

Camp Lejeune encompasses approximately 37,352 ha (92,300 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. All forested land is managed by the Base's Forest Management Program. The Forest Management Program staff is responsible for all timber harvests associated with timber management and construction projects involving the removal of merchantable timber. The Base contributes 40 percent of the net proceeds from the sale of timber products to the Onslow County Schools System in accordance with 10 US Code 2665. However, the Forest Management Program does not have net proceeds every year. Fire also plays a deciding role in the vegetation communities of Camp Lejeune, affecting canopy and understory density and species composition.

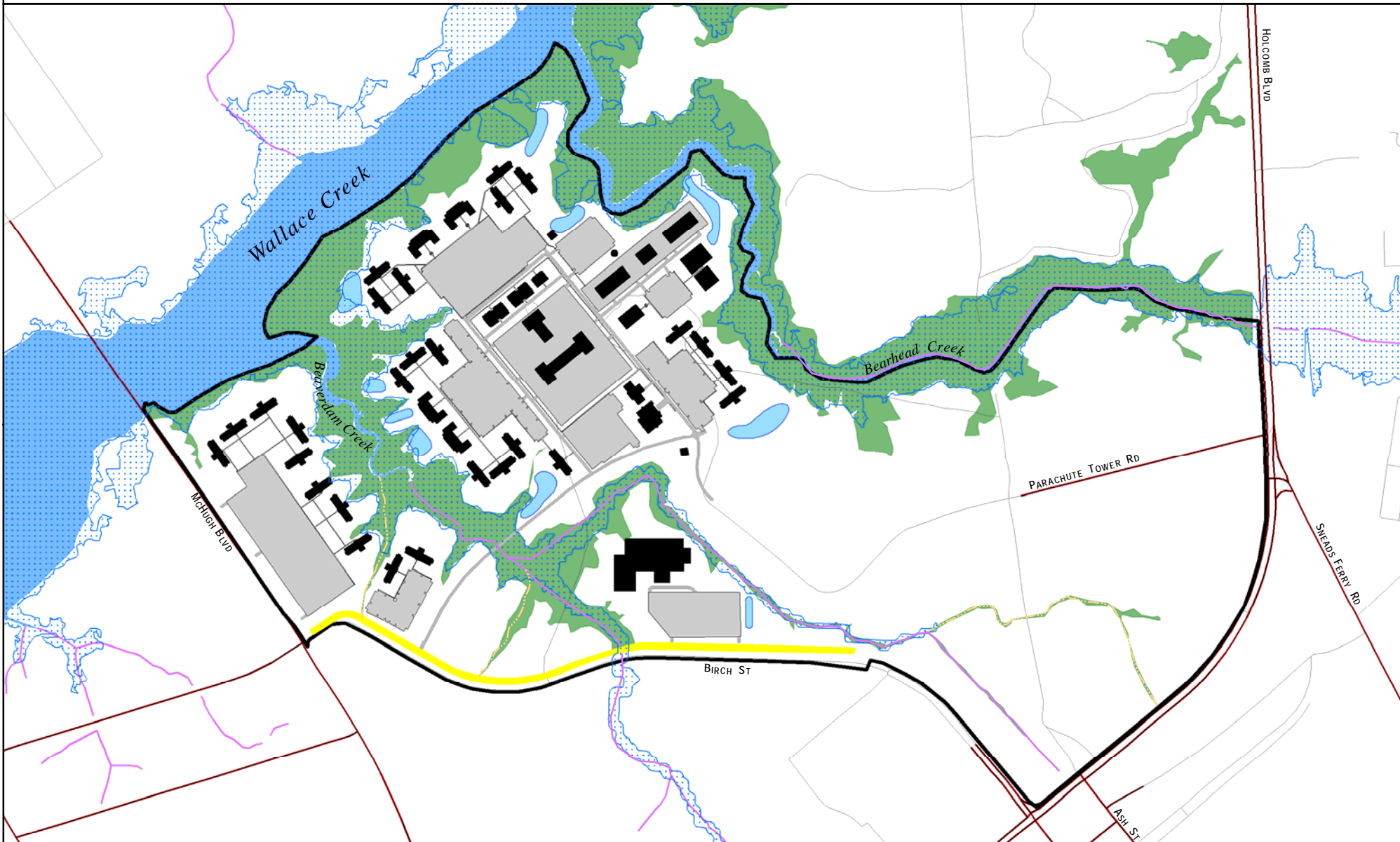
Generally speaking, upland areas within the proposed project area are characterized by highly productive pine and mixed pine/hardwood forests. The most common tree species in this area are loblolly pine (*Pinus taeda*), white oak (*Quercus alba*), tulip poplar (*Liriodendron tulipifera*), and sweetgum (*Liquidambar styraciflua*). In the shrub layer American holly (*Ilex opaca*), redbay (*Persea borbonia*), and sweetgum (*Liquidambar styraciflua*) are present. Common herbaceous species of the upland area include western brackenfern (*Pteridium aquilorum*) and longleaf woodoats (*Chasmanthium sessiliflorum*). Wetland areas throughout the Wallace Creek area contain dominant tree species of sweetgum (*Liquidambar styraciflua*), black gum (*Nyssa sylvatica*), red maple (*Acer rubrum*), and pond pine (*Pinus serotina*). Shrub layer primarily consists of waxmyrtle (*Morella cerifera*) and redbay (*Persea borbonia*). The herbaceous layer of wetlands is made up of cinnamon fern (*Osmunda cinnamomea*) and lizard's tail (*Saururus cernuus*) (MCB Camp Lejeune. November 2007).

According to these vegetative types, the communities most likely present at the upland portion of the project site include dry coniferous woodlands (loblolly/slash pine forest) with their pocosin shrubs, loblolly pines, and sweetgum populations. The wetland portion of the project site includes vegetation indicative of coastal plain riverine aquatic communities and small wetland communities.

3.9.5 Wildlife

Wildlife at Camp Lejeune is typical of that found in the southeastern Coastal Plain of North Carolina. Mammals commonly found in forested habitat include white-tailed deer (*Odocoileus virginianus*), eastern gray squirrel (*Sciurus carolinensis*), opossum (*Didelphis virginiana*), southern flying squirrel (*Glaucomys volans*), and raccoon (*Procyon lotor*). The forested habitat within the project area ranges in age from approximately 50 to 100 years and is contiguous with

Wetlands and Floodplains at the Wallace Creek Regimental Area



- 100-Year Floodplain
- Jurisdictional Wetlands
- Future Buildings
- Future Sidewalks
- Future Parking
- Future Stormwater Ponds
- Future Roads
- Birch Street Widening
- Wallace Creek Regimental Area
- Intermittent Stream
- Perennial Stream

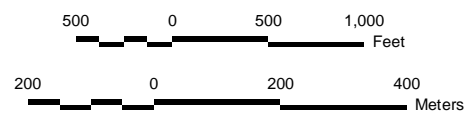


Figure 3-3



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other forested areas on Base. Many reptiles and amphibians, from the diminutive pine wood snake (*Rhadinaea flavilata*) to the oak toad (*Bufo quercicus*), are abundant throughout the Base.

Birds common to the area include mourning dove (*Zenaida macroura*), northern bobwhite quail (*Colinus virginianus*), mockingbird (*Mimus polyglottos*), American robin (*Turdus migratorius*), catbird (*Dumetella carolinensis*), and various sparrows (*Fringillidae*) and warblers (*Parulidae*). Pairs of osprey (*Pandion haliaetus*) occupy nests scattered along the shores of the New River and its larger tributaries.

A multi-species scientific management strategy is used to maintain habitat requirements for several game and non-game species within Camp Lejeune. Game species include eastern wild turkey (*Meleagris gallopavo*), white-tailed deer (*Odocoileus virginianus*), black bear (*Ursus americanus*), fox squirrel (*Sciurus niger*), western gray squirrel (*Sciurus griseus*), bobwhite quail (*Colinus virginianus*), eastern cottontail (*Sylvilagus floridanus*), raccoon (*Procyon lotor*), wood duck (*Aix sponsa*), largemouth bass (*Micropterus salmoides*), bluegill (*Lepomis macrochirus*), red-ear sunfish (*Lepomis miniatus*), and channel catfish (*Ictalurus punctatus*). Non-game species management is focused on eastern bluebird (*Sialia sialis*), purple martin (*Progne subis*), least tern (*Sterna antillarum*), various neo-tropical migrant birds, and a variety of reptiles and amphibians (USMC, November 2001).

The Migratory Bird Treaty Act (MBTA) of 1918 was enacted to conserve migratory birds. The MBTA prohibits the taking, killing, or possessing of migratory birds unless permitted by regulation.

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

- 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
- Assess and document through the project planning process, using NEPA when applicable, the effect of the proposed action on species of concern
- Engage in early planning and scoping with the USFWS relative to potential impacts of a proposed action to proactively address migratory bird conservation, and to initiate appropriate actions to avoid or minimize the take of migratory birds

The Memorandum of Understanding points to several regional reports and plans to identify species of concern. MCB Camp Lejeune biologists have compiled these reports and used them to prepare a list of the species of concern that could potentially occupy the habitat in the area of the

proposed action. This list is provided in Appendix B. Chapter 4 of this EA provides an assessment of the likelihood of population level effects on these species.

3.9.6 Threatened and Endangered Species

The Endangered Species Act of 1973 and subsequent amendments provide for the conservation of threatened and endangered species of animals and plants, and the habitats in which they are found. The Endangered Species Act prohibits jeopardizing endangered and threatened species or adversely modifying critical habitats essential to their survival. Section 7 of the act requires consultation with the National Marine Fisheries Service and USFWS to determine whether any endangered or threatened species under their jurisdiction may be affected by the proposed action (USMC, January 2008). The Marine Corps ensures that consultations are conducted as required with USFWS 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 (USMC, January 2008).

Camp Lejeune is home to seven federally listed threatened and endangered species. Camp Lejeune’s threatened and endangered species program focuses on protection, management, and monitoring of the federally listed species found at the Base and listed in Table 3.9-3 (USMC, January 2007). None of the listed species are known to occur within the proposed project area. Furthermore, there is no designated critical habitat on MCB Camp Lejeune.

Table 3.9-2
Federal Threatened and Endangered Species – MCB Camp Lejeune

Common Name	Scientific Name	Status
Leatherback sea turtle	<i>Dermochelys coriacea</i>	Endangered
Loggerhead sea turtle	<i>Caretta caretta</i>	Threatened
Green sea turtle	<i>Chelonia mydas</i>	Threatened
Piping plover	<i>Charadrius melodus</i>	Threatened
Red-Cockaded woodpecker	<i>Picoides borealis</i>	Endangered
Seabeach amaranth	<i>Amaranthus pumila</i>	Threatened
Rough-leaved loosestrife	<i>Lysimachia asperulaefolia</i>	Endangered
Source: USMC, January 2007.		

Camp Lejeune currently supports 84 active red-cockaded woodpecker (RCW) clusters (USMC, January 2007). The *2006 RCW Camp Lejeune Recovery Plan* was developed to manage and direct continuing RCW growth on the Base. Camp Lejeune will maintain an established recovery goal of 173 RCW clusters. The nearest RCW cluster is located 2.6 km (1.6 mi) away from the project area.

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. There are no known rough-leaved loosestrife plants within the proposed project area.

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 (USMC, November 2001). The location of this bald eagle nest is over 10.5 km (6.5 mi) from the proposed project area. This is well outside the outermost protective buffer in which activity restrictions apply. Bald eagles would be expected to fish along the New River (USMC, January 2008). The USFWS recently removed the Bald eagle from the Endangered Species List. Bald eagles will continue to be protected by the Bald and Golden Eagle Protection Act and the MBTA.

Besides those species listed in Table 3.9-3, coastal goldenrod (*Solidago villosicarpa*) is a federal species of concern and is therefore considered a species at risk. A pilot program has been initiated by DoD, in cooperation with the USFWS and North Carolina state agencies, to proactively manage species at risk on military bases reducing the need to list those species. Coastal goldenrod is being monitored and managed at Camp Lejeune as a project under this program. A field survey conducted from November 29 through December 4, 2007 concluded that there are no known coastal goldenrod plants within the proposed project area (Ten Brink, January 2008).

3.10 HAZARDOUS MATERIALS AND WASTE

3.10.1 Hazardous Materials and Waste Management

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

The various departments and divisions within MCB Camp Lejeune generally order hazardous materials through the supply system. Purchases of hazardous materials not available from the

supply system can be obtained through outside vendors after it has been approved by the Authorized Users Lists Committee prior to purchase by government credit card. Implementation of the Hazardous Materials Management System has helped reduce the amount of hazardous materials purchased. Excess or shelf-life expired hazardous materials are brought to Environmental Management Department's Resource Conservation and Recovery Section for characterization. These materials are recycled if possible, or disposed of, mostly through the Defense Reutilization and Marketing Office. The Defense Reutilization and Marketing Office disposes of hazardous wastes via shipment to a licensed treatment, storage and disposal facility (Hamilton, January 2008).

A pesticide control shop (Solid Waste Management Unit [SWMU]-43) is located within the proposed project area (Figure 3-4, Contaminated Sites at Wallace Creek Regimental Area). Various pesticides are stored at this facility for use at several locations on the base. SWMU-43 has undergone a Resource Conservation and Recovery Act (RCRA) Facility Investigation (July 2006). Approximately 52 tons of soil impacted by chlorinated pesticides was removed by the Base Remedial Action Contract, as part of the Interim Measures at SWMU 43 in June 2007.

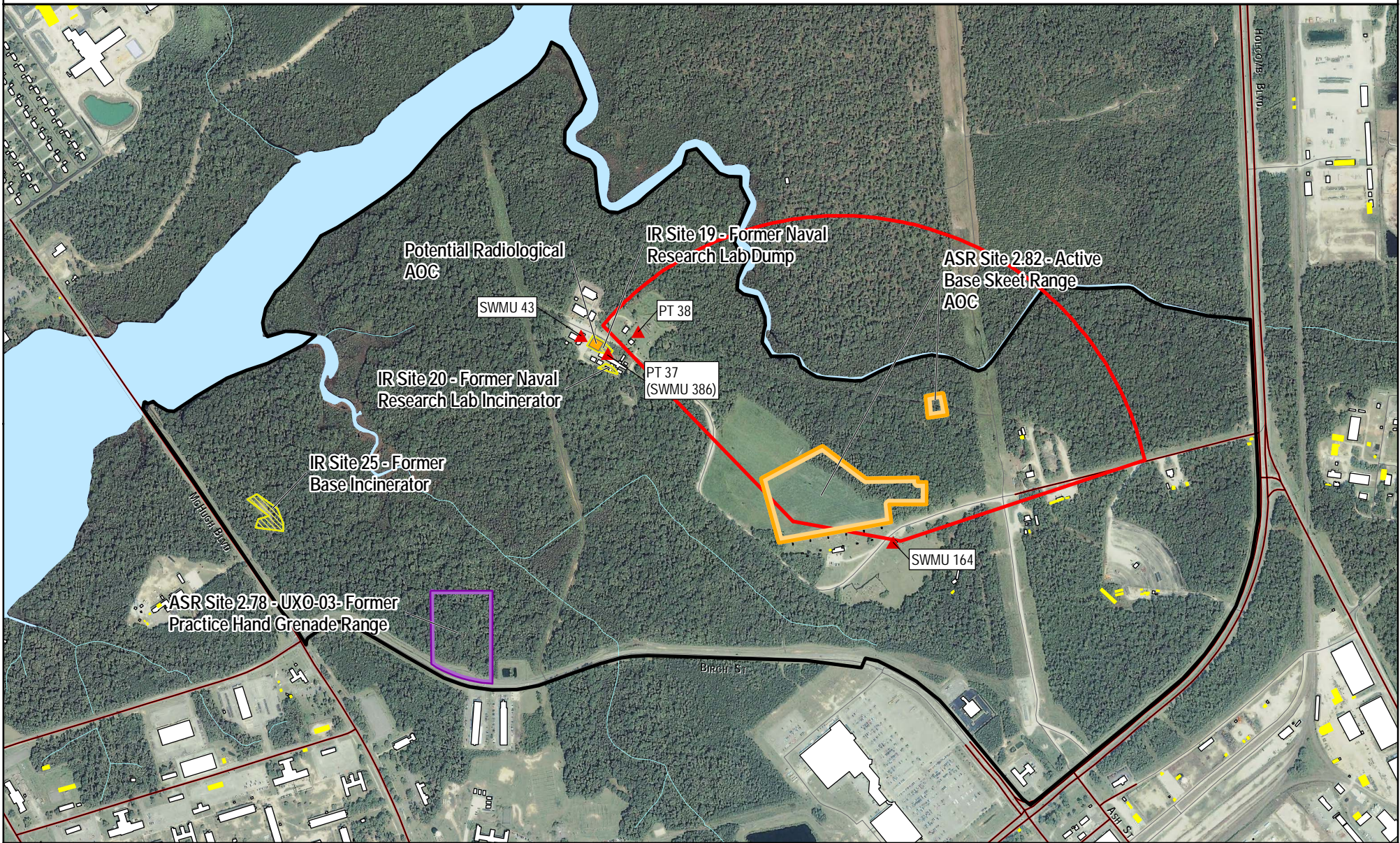
3.10.2 Contaminated Sites

As shown in Figure 3-4, three installation restoration (IR) sites, IR Site 19 – Former Naval Research Lab Dump, IR Site 20 – Former Naval Research Lab Incinerator, IR Site 25 - Former Base Incinerator, as well as ASR Site 2.82 - Active Base Skeet Range and ASR Site 2.78 - Former Practice Hand Grenade Range, are located within the project area. Below is a brief description of each site location, the period of operation, and the results of a recent focused site investigation that was completed within the project area. The focused site investigation was conducted between June and September 2007 at the Wallace Creek Regimental Area by NAVFAC Mid-Atlantic in an effort to determine the potential presence or absence of munitions and explosives of concern and hazardous and toxic waste within the project area and to determine subsequent human health risks (NAVFAC Mid-Atlantic, February 2008). The investigation assessed all of the sites discussed herein.

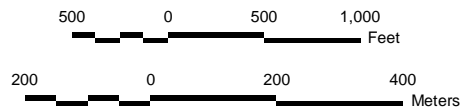
IR Site 19 – Former Naval Research Lab Dump

IR Site 19 is located off of Parachute Tower Road near the far northwest corner of the active base skeet range fan and encompasses approximately 0.8 to 1.2 ha (2 to 3 ac). The dump operated during the period 1956-1960 and was associated with the former Navy Medical Facility Research Laboratory (Building PT-37) (Figure 3-4). Materials that were disposed of at the facility included radioactive dosed animals (iodine-131), empty tanks, and scrap metal. The boundary of IR Site 19 also encompasses SWMU 43 (Pesticide Control Shop). Underground storage tank (UST) – PT37 is also located near IR Site 19 and in front of the Building PT37 (Figure 3-4).

Contaminated Sites at the Wallace Creek Regimental Area



- ▲ SWMU
- Radiological Area of Concern (AOC)
- ▨ IR Sites
- ▭ Former Hand Grenade Range
- ▭ ASR Site 2.82 - Active Skeet Range AOC



- ▭ Existing Building
- ▭ Demolished Building
- ▭ Wallace Creek Regimental Area
- Existing Streams and Ponds
- ▭ Active Base Skeet Range



Figure 3-4

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According to a Naval Energy and Environmental Support Activity letter dated May 22, 1981, beta buttons containing strontium-90, animal remains dosed with strontium-90, as well as soil impacted by strontium-90 (approximately 160 pounds) were removed from a disposal pit area northwest of the Naval Research Lab area/Pesticide Control Shop. Samples were analyzed for strontium-90 and cesium-137. No further action was recommended for this dump in the RCRA Facility Assessment Report. However, the Naval Energy and Environmental Support Activity letter of May 22, 1981 also stated that personnel interviews generated concern that “[r]adioactive material may be present in a man-made pit located in the hazardous material dump site.” The Naval Research Lab also used iodine-131 in metabolic studies according to the Initial Assessment Study (NAVFAC Mid-Atlantic, February 2008).

On May 30, 2007, Naval Sea Systems Command Detachment, Radiological Affairs Support Office (RASO) was contacted by Naval Facilities Engineering Service Center concerning the Naval Energy and Environmental Support Activity letter of May 22, 1981. RASO, in June 2007, determined that no comprehensive follow-on report was ever issued following the Naval Energy and Environmental Support Activity letter of May 22, 1981 (NAVFAC Mid-Atlantic, February 2008).

Naval Sea Systems Command Detachment RASO and a contractor from New World Technology then visited MCB Camp Lejeune from July 23 to 25, 2007 to evaluate several sites associated with the former Navy Medical Facility Research Laboratory. During the site visit, radiological instrument measurements were taken at the Insect Vector Compound (Buildings PT-37 and PT-38), and designated burial site in the northwest corner of the Insect Vector Compound. Concrete samples were taken from the concrete pad adjacent to Building PT-37 and the Building PT-38 concrete pad (old incinerator). Soil samples were taken at the surface and at a 4-ft depth in the northwest corner of the Insect Vector Compound. The concrete and soil samples were analyzed by a certified laboratory for strontium-90. Radioactivity was not detected above natural background levels (NAVFAC Mid-Atlantic, February 2008).

Based on historical information and previous and recent radiological survey and sampling results, Naval Sea Systems Command Detachment RASO concluded there is no radiation exposure hazard for personnel working in the areas discussed in the previous paragraph. However, additional investigation for potential radioactive material was recommended by Naval Sea Systems Command Detachment RASO in the area as shown in Figure 3-4. A radiological investigation to be performed by Naval Sea Systems Command Detachment RASO and their associated contractors is programmed for FY2008.

Soil and groundwater at IR Site 19 were also sampled and analyzed for a range of constituents as part of the recent focused site investigation. For construction support purposes, a preliminary human health risk screening was conducted by comparing the maximum concentrations of detected constituents to USEPA Region IX Industrial Preliminary Remediation Goals (PRGs) for soil samples and to North Carolina Groundwater Quality Standards for groundwater samples.

Results indicated that arsenic concentrations exceeded Industrial PRGs at three surface soil locations. Since organic arsenic compounds have been used as pesticides, the area of arsenic impact on the north side of Building PT-37 may be associated with the past site operations of the pesticide shop (NAVFAC Mid-Atlantic, February 2008).

The SWMU 43 RCRA Facility Investigation (July 2006) also included a human health risk assessment that contained an evaluation of arsenic in soils. The maximum arsenic concentration reported in the surface soils at IR Site 19 during the 2007 investigation was less than the maximum concentration as well as the 95% Upper Confidence Level reported during the SWMU 43 RCRA Facility Investigation.

Based upon comparison with historical data from SWMU 43 and the human health risk assessment, the arsenic levels reported within the vicinity of IR Site 19 as a result of the investigation were determined to be within acceptable risk. However, it was recommended that a human health risk assessment be conducted on the data collected at IR Site 19 in order to confirm this data evaluation for arsenic. No impacts to subsurface soils and shallow groundwater (site-related) were reported (NAVFAC Mid-Atlantic, February 2008).

IR Site 20 – Former Naval Research Lab Incinerator

IR Site 20 is located southeast of IR Site 19 and encompasses approximately 0.2 ha (0.5 ac). The Former Naval Research Lab Incinerator operated during the period 1956-1960. Materials that were disposed of at the facility included ash and debris from the research lab. No Further Action was recommended for this facility in the 1996 RCRA Facility Assessment Report.

IR Site 20 was also investigated as part of the recent focused site investigation. Soil and groundwater at the IR Site 20 was sampled and analyzed for a range of constituents. Results of the sampling indicated that arsenic concentrations exceeded Industrial PRGs at four surface soil locations. Since organic arsenic compounds have been used as pesticides, the area of arsenic impact on the south side of Building PT-38 may be associated with the past site operations of the pesticide shop (NAVFAC Mid-Atlantic, February 2008).

When compared to the results of the SWMU RCRA Facility Investigation and subsequent human health risk assessment, the maximum arsenic concentration reported in the surface soils at IR Site 20 was less than the maximum concentration reported at SWMU 43 and only slightly more than the 95% Upper Confidence Level. Based upon comparison with historical data from SWMU 43 and the previous risk assessment, the arsenic levels reported within the vicinity of IR Site 20 as a result of the site investigation were determined to be within acceptable risk. However, it was recommended that a human health risk assessment be conducted on the data collected at IR Site 20 in order to confirm this data evaluation for arsenic (NAVFAC Mid-Atlantic, February 2008).

An elevated detection of trichloroethene was reported in the duplicate sample from one of the soil surface locations; however, it may have been an anomaly or an isolated sampling. It was

recommended that a confirmatory sampling be conducted in the area around this location to confirm if the trichloroethene concentrations in the surface soils are within an acceptable risk. No impacts to shallow groundwater (site-related) were reported (NAVFAC Mid-Atlantic, February 2008).

IR Site 25 - Former Base Incinerator

IR Site 25 is located off of McHugh Boulevard south of Wallace Creek and on the west side of the project area. The site encompasses approximately 0.2 ha (0.5 ac). The Former Base Incinerator operated during the period 1940-1960. Materials that were disposed of at the facility included burned trash and melted glass. No further action was recommended for this facility in the 1996 RCRA Facility Assessment Report; however, no prior environmental sampling had been conducted at the site.

Soil and groundwater was sampled at IR Site 25 during the recent site investigation. Results show that arsenic concentrations exceeded industrial PRGs at two surface soil locations and two subsurface soil locations. Since trace levels of pesticides were reported in the soils at IR Site 25, the area of arsenic impact may be associated with the past pesticide use within the vicinity of the former incinerator. Since the incinerator operated before the promulgation of environmental regulations it is possible that pesticide disposal activities also occurred in this area. The site investigation report recommended that a human health risk assessment be conducted on the data collected at IR Site 25 in order to evaluate if the arsenic concentrations are within an acceptable risk. No impacts to shallow groundwater (site-related) were reported (NAVFAC Mid-Atlantic, February 2008).

ASR Site 2.82 - Active Base Skeet Range

The Active Base Skeet Range is located off of Parachute Tower Road and in the central part of the proposed project area. The skeet range site encompasses approximately 60.3 ha (149 ac). Materials potentially present in the surface soils at the site include small-arms munitions constituents such as lead shot. Limited soil sampling in the vicinity of the Skeet Range was conducted in 2001 during an Area of Concern Background Study. The results of the study indicated the presence of lead in surface soils. In addition, soil and groundwater sampling were conducted at the UST-PT5 (SWMU 164) located immediately southeast of the range shooting points and Parachute Tower Road. Soils collected during the UST-PT5 investigation indicated the presence of Total Petroleum Hydrocarbons and Total Benzene, Toluene, Ethylbenzene, and Xylenes in groundwater. These results indicate that UST-PT5 is leaking (NAVFAC Mid-Atlantic, February 2008).

Results of the recent site investigation indicated that lead concentrations exceeded Industrial PRGs at nine surface soil locations and two shallow groundwater locations. The area of lead impact was generally within shot-fall region of the range, approximately 4.8 ha (11.8 ac). Additional sampling of surface soils and groundwater and a risk assessment were recommended

to address this area of elevated lead concentrations. There were no lead exceedances reported in subsurface soils (NAVFAC Mid-Atlantic, February 2008).

ASR Site 2.78 - Former Practice Hand Grenade Range

The Former Practice Hand Grenade Range (Site unexploded ordnance-03), is located off Birch Street and McHugh Boulevard. Only the northern portion of the site is within the proposed project area. This area is approximately 2 ha (5 ac). No prior sampling has occurred in the vicinity of this site. Potential hazards at this site include munitions and explosives of concern and munitions constituents (NAVFAC Mid-Atlantic, February 2008).

Results of the recent site investigation show no exceedances of Industrial PRGs in surface and subsurface soils. In addition, 17 total metals and 15 dissolved metals were detected in the shallow groundwater; however, none exceeded the North Carolina Groundwater Quality Standards (NAVFAC Mid-Atlantic, February 2008). An anomaly investigation to determine if unexploded ordnance exists at the site is programmed for FY2008.

4 ENVIRONMENTAL CONSEQUENCES

This chapter presents an analysis of the potential impacts upon various components of the environment that could result from the proposed action. The proposed action consists of the construction, operation, and maintenance of a four-battalion regimental complex at the Wallace Creek Regimental Area and associated influx of personnel at MCB Camp Lejeune, North Carolina. Following a format similar to Chapter 3, Chapter 4 discusses the No Action Alternative and the proposed action.

4.1 LAND USE AND COASTAL ZONE MANAGEMENT

4.1.1 Land Use

No Action Alternative

Impacts to land use would not occur under the No Action Alternative because land use patterns would not change. If the No Action Alternative were to be implemented, facilities supporting the two new infantry battalions and Regimental Headquarters would not be constructed. Other physical facilities at Camp Lejeune would remain, in the near term, the same as they are today.

Proposed Action

Construction projects associated with the Wallace Creek Regimental Area would total approximately 177,421 sq m (1,909,744 sq ft). Many of the new facilities would be multistory buildings (e.g., BEQs); therefore, the area of the footprint that the facilities would cover is smaller than the total building space. The footprint of the new facilities would be approximately 80,728 sq m (868,949 sq ft). Development of facilities would take place on roughly 122 ha (302 ac) of the entire 223 ha (551 ac) project area.

New paved parking lots would cover approximately 24 ha (59 ac). New paved roadways would be roughly 2.9 km (1.8 mi) in length and would cover approximately 4 ha (9.8 ac). The Birch Street road widening would total 1.3 km (0.8 mi) in length and would cover approximately 2 ha (5 ac). Sidewalks around each building would cover about 9,384 sq m (101,009 sq ft). Proposed stormwater ponds would be about 3 ha (7 ac) in size.

The land use classification would essentially remain the same: operational and training facilities. However, construction of facilities, infrastructure, and utilities would result in a change to the project area from mixed forest to developed areas. Some existing facilities would need to be demolished in order to make room for the proposed facilities. These include the pesticide storage facility and associated structures, military working dog kennels, and recreational skeet range. Camp Lejeune has recently identified new locations for the military working dog kennels and the skeet range that are outside of the proposed Wallace Creek project area.

4.1.2 Coastal Zone Management

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

The proposed action was reviewed to determine its consistency with the applicable requirements of the North Carolina Coastal Area Management Act (CAMA). As detailed in the Coastal Consistency Determination in Appendix C, the proposed action is not located in an Area of Environmental Concern (AEC).

The following is an analysis of the applicability of the CAMA AEC policies to the proposed action and the action's consistency with those policies, when applicable.

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

The Wallace Creek project area includes three types of wetlands: estuarine, riverine, and palustrine. The majority of wetlands in the project area are palustrine forested wetlands along the floodplain of Wallace Creek and in association with stream tributaries of Bearhead Creek and Beaverdam Creek. Estuarine wetlands are found in proximity to Wallace Creek, while riverine wetlands are in the upper reaches of Beaverdam Creek. Under the proposed action, estuarine wetlands would be avoided, and mitigation for palustrine wetlands would be implemented as required by wetland permit requirements.

The proposed action would impact 0.09 ha (0.22 ac) of wetlands. MCB Camp Lejeune would obtain the necessary permits prior to construction and would implement mitigations as required by the permit conditions. Wetland and stream impacts would be limited to a road crossing and the intent is to design the crossing to meet conditions of Nationwide Permit 14, not to exceed 0.2 ha (0.5 ac) of wetland fill and 45.7 linear meters (150 linear feet) of stream impact. MCB Camp Lejeune has not developed the specific design and mitigation plan. However, land within the project area 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 Department of Defense lands (including the Greater Sandy Run Wetland Mitigation Bank on Camp Lejeune) and lands of other entities would be considered for mitigation purposes when consistent with the US Environmental Protection Agency, US Army Corps of Engineer, North Carolina Division of Water Quality guidelines, and/or permit provisions.

The upper reaches of Wallace Creek, Bearhead Creek, Beaverdam Creek and their tributaries are inland waters. The lower reaches of Wallace Creek are estuarine. 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. Therefore, these policies are not applicable to the proposed action.

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

The project area for the proposed action is not within an ocean hazard area. Therefore, policies on ocean hazard areas are not applicable.

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

The construction of the proposed facilities would not affect areas where there are small surface water supply watersheds or public water supply well fields. Therefore, policies protecting public water supplies are not applicable.

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

15A NCAC 07H.0505 (Coastal Areas That Sustain Remnant Species). There are no federally-listed threatened or endangered species that are located within the project area. However, the proposed project would require the clearing of approximately 64 ha (158 ac) of mixed pine-hardwood forest. This policy is not applicable.

15A NCAC 07H.0506 (Coastal Complex Natural Areas). Camp Lejeune has two designated natural areas: the CF Russell Longleaf Pine Natural Area and the Wallace Creek Natural Area. Both have been designated and registered as natural areas by the North Carolina Natural Heritage Program. However, both are located well beyond the project limits of the project area. This policy is not applicable.

15A NCAC 07H.0507 (Unique Coastal Geologic Formations). No unique geological formations are located within the proposed project area. This policy is not applicable.

15A NCAC 07H.0508 (Use Standards). There are no fragile coastal natural or cultural resources within the project area. Implementing the proposed action would not cause irreversible damage to natural systems or cultural resources, scientific, educational, or associative values, or aesthetic qualities. This policy is not applicable.

15A NCAC 07H.0509 (Significant Coastal Archaeological Resources). Three potentially eligible archaeological sites were identified within the boundaries of the proposed project area: 31ON1059, 31ON1077, and 31ON1132. Results of the Phase II field survey indicate that all three sites do not meet the National Register of Historic Places criteria for eligibility. MCB Camp Lejeune has requested concurrence that implementation of the proposed action would not affect any National Register of Historic Places-eligible archaeological sites. This policy is not applicable.

15A NCAC 07H.0510 (Significant Coastal Historic Architectural Resources). The Parachute Training Historic District and its three contributing resources, PT-4, PT-5, and PT-6, would all remain intact and protected by a 15.2 m (50 ft) buffer. The project is consistent with this policy.

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

The proposed action was analyzed to determine the applicability of the CAMA's General Policy Guidelines and the action's consistency, when applicable. As detailed in the Coastal Consistency Determination in Appendix C, three of the eleven policies are applicable to the proposed action. Consistency with these applicable policies is addressed as follows:

15A NCAC 07M.0500 (Post-Disaster Policies)

These policies require that all state agencies prepare for disasters and coordinate their activities in the event of a coastal disaster. MCB, Camp Lejeune, Base Order P3440.6E, Destructive Weather, addresses how MCB Camp Lejeune would prepare for potential disasters and would respond in the event of a disaster, including coordination with North Carolina emergency services. The proposed action is consistent with these policies.

15A NCAC 07M.0700 (Mitigation Policy)

North Carolina's mitigation policy states that "Coastal ecosystems shall be protected and maintained as complete and functional systems by mitigating the adverse impacts of development as much as feasible, by enhancing, creating, or restoring areas with the goal of improving or maintaining ecosystem function and areal proportion." Impacts would 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 forest habitat and wildlife losses due to development of this site. 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 1,546 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 dollars 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.

Based on the conceptual plan for the layout of regimental facilities at Wallace Creek, the proposed action has the potential to adversely impact jurisdictional wetlands and waters of the US at MCB Camp Lejeune. The proposed action would impact approximately 0.09 ha (0.22 ac) of jurisdictional wetlands in the Wallace Creek Regimental Area. Other wetlands are present along the site boundary. 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.

The proposed project would be designed to avoid impacts to wetlands and waters of the US. 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 Department of Defense lands (including the Greater Sandy Run Wetland Mitigation Bank on Camp Lejeune) and lands of other entities would be considered for mitigation purposes when consistent with the US Environmental Protection Agency, US Army Corps of Engineer, 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. These permits would include the Clean Water Act, Section 404 wetland permit from the US Army Corps of Engineers (Nationwide or Individual Permit depending on the quantity of wetlands and waters of the US affected) and the Clean Water Act, Section 401 Water Quality Certification from the North Carolina Department of Environment and Natural Resources, Division of Water Quality.

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.

Chapter 11 of Marine Corps Order P5090.2A, Change 1 (USMC, January 2008), requires the use of native plants in landscaping. Native plant species would be used for landscaping to the extent practicable. No non-native, invasive vegetation would be used in any temporary or permanent landscaping.

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.

Other permits and approvals for the proposed action include:

- Erosion and Sedimentation Control Plan approval by North Carolina Department of the Environment and Natural Resources, Division of Land Resources, Land Quality Section
- Stormwater Management Permit from the North Carolina Department of Environment and Natural Resources, Division of Water Quality
- Non-Discharge Sewer Extension Permit from the North Carolina Department of Environment and Natural Resources, Division of Water Quality, Non-Discharge Branch
- Water Connection Permit from the North Carolina Department of Environment and Natural Resources, Public Water Supply Section
- Clean Air Act, Title V Construction and Operation Permit from the North Carolina Department of Environment and Natural Resources, Division of Air Quality
- Concurrence from the NC SHPO on cultural resources effects findings

The proposed action would be consistent with this policy.

15A NCAC 07M.0800 (Coastal Water Quality Policies)

Stormwater runoff would be managed and controlled in accordance with State-approved sedimentation/erosion and control plans and stormwater permits. These permits are issued by the NCDENR and reflect the most up-to-date requirements outlined in the State's Best Management Manual. In addition, since MCB Camp Lejeune is located in Onslow County which is considered a Phase II Coastal County, the Base must follow the requirements that are found in stormwater requirements 15A NCAC 02H.1005.

MCB Camp Lejeune is currently covered under a Phase I NPDES stormwater permit. This permit required the Base to develop and implement a Stormwater Pollution Prevention Plan which recommends measures to minimize pollutants from entering stormwater runoff from Base industrial activities.

Under the NPDES 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 and landscaping in select areas. This vegetation would aid in the control of stormwater runoff and to assure effective and continuous control of erosion and pollution.

As a result, the proposed action is not expected to impair coastal water quality. The project would not be located in primary or secondary nursery areas. Implementation of the proposed action would be consistent with coastal water quality policies.

The Marine Corps, through the Coastal Consistency Determination process, has determined that implementing the proposed action would be fully consistent with the applicable policies of the North Carolina Coastal Management Act. The North Carolina Division of Coastal Management concurred with this determination (see Appendix C).

4.2 SOCIOECONOMICS

Socioeconomics encompass population, income and employment, and housing. Impacts on these fundamental socioeconomic resources can also influence other components such as public services provisions.

4.2.1 Demographics

No Action Alternative

Under the No Action Alternative, the Wallace Creek Regimental Area would not be constructed and existing personnel levels at Camp Lejeune would remain the same. Therefore, there would be no impact on demographics.

Proposed Action

By 2010, when the proposed action is fully implemented, there would be a net gain to Camp Lejeune of approximately 2,100 military personnel. This would represent about a 5 percent increase from the existing 42,241 active duty personnel at Camp Lejeune. The incoming personnel would include approximately 115 officers and 1,985 enlisted personnel (Padgett, December 2006). Using factors provided by the Marine Corps, there would be approximately 82 married officers accompanied by approximately 212 dependents. Of the enlisted personnel, about 834 would be married and would be accompanied by about 1,751 dependents. There would be approximately 1,963 dependents associated with the proposed action (Brewer, September 2007).

The total incoming population of about 4,063 persons, comprising the new MCB Camp Lejeune personnel and their dependents, would be new to the region, or in-migrants. This population gain would potentially be realized in Onslow, Carteret, and Pender Counties. The population gain would represent a 1.5 percent increase in the existing tri-county region population (of 262,887 in 2006).

An estimated 787 of the 1,963 dependents associated with incoming personnel would be school-age children. Impacts of the added number of school-age children in the local school systems are discussed below, in Subchapter 4.3.3.

4.2.2 Income and Employment

No Action Alternative

Under the No Action Alternative, the Wallace Creek Regimental Area would not be constructed and existing personnel levels at Camp Lejeune would remain the same. Therefore, there would be no impact on income and employment.

Proposed Action

Under the proposed action, approximately 2,100 new military positions would be created at Camp Lejeune. These jobs would represent about one percent of the overall tri-county labor force (149,311 in 2005, see Subchapter 3.2.2). Based on average Marine Corps basic pay rates by grade for FY 2007, these new jobs would produce approximately \$64 million in annual payroll (assuming all positions created in FY 2007) (USMC, December 2007). The average pay for the personnel would be about \$30,449, which is approximately \$5,689 higher than the average annual pay in the tri-county ROI (\$24,760 in 2005, see Table 3.2-6).

An economic model, IMPLAN Pro, was used to estimate the gain associated with the long-term influx of 2,100 personnel and short-term construction expenditures associated with the proposed action (IMPLAN, 2007). The IMPLAN Pro model is based on regional information derived from data bases of federal agencies, such as the U.S. Bureau of Economic Analysis. The model was constructed to include Onslow, Carteret, and Pender counties. Because 2004 is the most recent data available for these counties, the output data is in 2004 dollars (but is adjusted for the timeline for implementation of the proposed action). The IMPLAN Pro econometric model operates by estimating the direct impact, indirect impacts, and induced impacts of specific economic activity. Direct effects relate to the initial economic activity, in this case the predicted influx of personnel and expenditure of dollars for new construction. An indirect effect is the inter-industry effects predicted in response to the Marine Corps' expenditures (i.e., construction contractor's expenditures in the local economy on such things as supplies, food, furnishings, and other merchandise and various services). An induced effect is a change in household spending in response to the Marine Corps' expenditures.

The modeled long-term direct impact of the influx of 2,100 federal Department of Defense personnel in the region would be \$129.9 million annually (2004 dollars, including payroll, benefits, and other forms of compensation). The induced impact would add another \$59.6 million annually (2004 dollars) from spending and recirculation of disposable income in a multitude of sectors such as real estate/housing, general merchandise and retail stores, and

service industries such as food, vehicle maintenance, banking, etc. An estimated 747 average annual full- and part-time jobs with a combined income of \$17.0 million (2004 dollars, wage and salary) would be supported by the induced impact. An additional \$15 million (2004 dollars) in property type income (i.e., payments from interest, rents, royalties, dividends, and profits) and \$4.7 million (2004 dollars) would be realized in indirect business taxes annually. (The model was run as if the influx of all personnel would occur in 2008.)

Additional residents in the local community would correspondingly increase the demand for community services and facilities, which would increase the need for government expenditures. The influx of personnel would have a positive impact on the generation of tax revenues for the tri-county ROI. The total estimated annual federal government tax impact is estimated at \$24.0 million and the state and local government tax impact is estimated at \$10.3 million. Additional tax impacts would occur during the construction phase.

The estimated \$716.7 million in expenditures for the 21 proposed MILCON projects was modeled with adjustments made for the timeline for implementation of these projects (fiscal years 2007 through 2010) and to express the expenditures in 2004 dollars (for a total of \$659.4 million in direct expenditures). The results of the modeling, shown in Table 4.2-1, indicate that the total short-term regional economic impact of the construction activity would be \$913.8 million in expenditures supporting an estimated total of 12,866 full- and part-time jobs. In addition, the total value added would be \$467.9 million in payments to factors of production/gross regional product to include labor income (employee compensation plus proprietor's income), other property type income (rent, dividends, interest, profits), and indirect business taxes (taxes collected by businesses on behalf of government). The employee compensation, at \$348.9 million, would account for approximately three quarters of the total value added. The construction activity would result in a gain of an estimated \$59.2 million in federal government taxes and \$37.6 million in state and local government taxes.

Table 4.2-1

Regional Economic Impact Resulting from MILCON Projects (2004 dollars)

	Total Industry Output (\$000)	Employment	Total Value Added (\$000)
Direct Effects	659,379.0	9,678.0	319,202.7
Indirect Effects	105,009.8	1,415.1	56,188.7
Induced Effects	149,373.1	1,872.3	92,474.4
Total Effects	913,761.9	12,965.5	467,865.8
Source: IMPLAN Professional Version 2.0, Copyright 1999-2007.			

Once the funds are used for construction of the four-battalion regimental complex in the Wallace Creek area, these dollars would no longer be circulating through the regional economy (i.e., due to leakages such as savings, payment of taxes, or purchases of goods and services outside the region) and the economic gains would no longer be realized.

The indirect and induced impacts would be realized in a variety of economic sectors, particularly utilities, architectural and engineering services, wholesale trade, truck transportation, construction materials, merchandise stores/retailers, real estate, health care, food and drinking establishment, and other stores and services.

4.2.3 Housing

No Action Alternative

Existing housing conditions would not change under the No Action Alternative. The Wallace Creek Regimental Area would not be constructed and existing personnel levels at Camp Lejeune would remain the same. Thus, no impacts to housing would occur.

Proposed Action

Under the proposed action, the gain of approximately 4,063 persons, including military personnel and dependents, would generate a commensurate requirement for housing. The proposed action would construct 27 BEQs to meet the need for housing single enlisted personnel. For this analysis, it is assumed that all of the single enlisted personnel (1,151) would reside on base. Of the rest of the military personnel (949), using data provided by MCB Camp Lejeune, under a worst case scenario, approximately 90 percent (854) would live off base with their dependents (1,767) (MCB Camp Lejeune, October 2006b). Although Camp Lejeune has been addressing the military housing shortfall through Public Private Venture housing initiatives, housing requirements that could not be accommodated by military housing would result in housing demand within the tri-county ROI.

Under these assumptions, at least 854 units of off-base housing would be needed in the ROI. The vacancy rates for area housing (17.4 percent for the tri-county area, see Table 3.2-7) indicate that the community housing market could meet this demand. Furthermore, private entities in the community could respond to an increased demand in housing by 2010, when the proposed action would be fully implemented. Military personnel residing in community housing receive Basic Allowance for Housing in addition to basic pay. For personnel with dependents, these range from a low of \$815 per month for a Private First Class (E2) to a high of \$1,472 per month for a Brigadier General (O7) and above (DoD, April 2007). Overall, impacts to housing conditions would be expected to be minor and would resolve as the private housing market adjusts.

4.2.4 Environmental Justice

No Action Alternative

Implementation of the No Action Alternative would maintain the status quo at Camp Lejeune. No changes would occur that would affect minority populations, low-income populations, or children. Thus, no impacts to environmental justice issues would occur under the No Action Alternative.

Proposed Action

As evaluated in accordance with Executive Orders 12898 and 13045, 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 Camp Lejeune or in Onslow County. This includes minorities, low-income populations, and children. As a result, the proposed action would not result in impacts to minority populations, low-income populations, and children.

4.3 COMMUNITY FACILITIES AND SERVICES

4.3.1 Emergency Services

No Action Alternative

Under the No Action Alternative, demands on existing emergency services are expected to remain the same. Camp Lejeune would continue to meet these demands. No impacts to emergency services would occur.

Proposed Action

Overall, the demand for fire protection and law enforcement would continue to be met by Camp Lejeune. Adverse impacts to emergency services in the community as a result of immigration would be minor.

4.3.2 Hospitals

No Action Alternative

Under the No Action Alternative, the demand for and provision of health care would remain the same. No impacts to Camp Lejeune or other area hospitals are expected.

Proposed Action

A medical/dental clinic would be constructed as part of the proposed action to serve the personnel working within the Wallace Creek Regimental Area. The clinic would provide primary medical and dental care, preventative medicine, acute care, and deployment health assessments. Demand for and provision of health care services would increase slightly as a result of the population gain associated with the proposed action, resulting in minor adverse impacts on area hospitals.

4.3.3 Schools

No Action Alternative

Under the No Action Alternative, the proposed action would not be implemented and existing personnel levels at Camp Lejeune would remain the same. Therefore, there would be no impact on schools.

Proposed Action

As previously mentioned, it is estimated that there would be a gain of 787 school-aged children as a result of the establishment of new positions at the Wallace Creek Regimental Area. While the Camp Lejeune Dependent School system has capacity to accommodate additional school age children, there would be increased demand for area public and private schools for those in-migrant military families that reside off-base. A conservative estimate is that 90 percent, or 708 of the in-migrant children, would attend local area schools. As indicated in Tables 3.3-1, 3.3-2, 3.3-3, membership/enrollment at schools within the ROI are operating near, at, or in excess of their capacities. The estimated increase in student population would exacerbate this situation and result in overcrowding. Affected local area school districts would receive some additional funding for the influx of federally connected students through the federal impact aid program described in Subchapter 3.3.4. However, these funds generally do not cover full per-pupil costs received through property taxes because the amount of impact aid available for dispensation by the department depends on Congressional approval. Therefore, local school districts likely would incur additional expenses associated with the projected increase in enrollment under the proposed action.

In response to high population growth rates in the area due to regional trends, as well as from growth at Camp Lejeune, Onslow County Schools has initiated a redistricting process that will serve to balance elementary school populations by moving children from overcrowded schools to ones with excess capacity. In addition, two new schools are being constructed. Meadow View Elementary School is scheduled to open in August 2008 with a capacity of 805 students and Stateside Elementary School will open in 2009 with a capacity of 800 students (Hudson, February 2008 and Hudson, June 2008). The Marine Corps is also working with the local school districts to identify ways to minimize any potential effects.

4.3.4 Recreational Facilities

No Action Alternative

Under the No Action Alternative, a Wallace Creek Regimental Area would not be constructed and existing personnel levels at Camp Lejeune would remain the same. Therefore, there would be no impact to on- or off-base recreational facilities.

Proposed Action

An indoor fitness facility would be constructed under the proposed action. The facility would provide exercise areas, space for equipment and gear storage, laundry facility, and shower and locker areas.

Under the proposed action, the recreational skeet range would be demolished. Camp Lejeune has recently identified a new location for the skeet range that is outside of the proposed Wallace Creek project area. The affected environment for this replacement facility is similar to actions being analyzed within the *Environmental Assessment for Security Gate Upgrades, Road Improvements, Landfill Expansion, and Relocation of Skeet Range, MCB Camp Lejeune, North Carolina*. Therefore, this new replacement facility has been included for impact analysis in that document.

If the proposed action were implemented, there would be no adverse impacts to on or off-base recreational facilities.

4.4 TRANSPORTATION AND TRAFFIC

No Action Alternative

The on-base transportation system would not change under the No Action Alternative. There would be no increase in transportation of goods or the number of commuters to the project area. Existing traffic conditions in the vicinity of the project area would remain the same. Thus, no impacts to traffic conditions and transportation would occur.

Proposed Action

Under the proposed action, construction-related car, truck, and other heavy vehicle traffic would increase during the construction phase at the Wallace Creek Regimental Area project area. This would cause minor short-term impacts to traffic flow that would not have a lasting effect on the Base's transportation network.

Construction of the Wallace Creek Regimental Area would alter the existing roadway network at MCB Camp Lejeune. The existing Birch Street would be widened for most of its length between the proposed fitness center (P-1160) and Holcomb Boulevard. Two new roadways would also be constructed under this alternative. One would be an access road for the Wallace

Creek Regimental Area and the other would be a loop road within the Regimental Area. The access road would connect the Wallace Creek Regimental Area with Birch Street and would be approximately 845 m (2,770 ft) long. The loop road would loop to the north from the access road and would be approximately 1,234 m (4,050 ft) long.

Once construction has been completed, daily traffic to the Wallace Creek Regimental Area project area would increase due to additional commuters. However, this increase in traffic is expected to result in a minor adverse impact because of the aforementioned roadway improvements. In addition, under a separate proposed project, security gate upgrades at Main Gate and Piney Green Gate and road improvements to Old Saw Mill Road and Piney Green Road will help reduce traffic congestion due to additional commuters.

New parking lots are also included in the proposed action to accommodate the parking demand at the Wallace Creek Regimental Area.

4.5 AIR QUALITY

No Action Alternative

Physical facilities would remain the same under the No Action Alternative. Accordingly, levels of air emissions currently generated by activities on the Base and existing air quality conditions at Camp Lejeune would remain roughly the same. Similarly, the Southern Coastal Plain Intrastate Air Quality Control Region is expected to remain in attainment for all criteria pollutants. Hence, no impacts to air quality would occur under the No Action Alternative.

Proposed Action

Long- and short-term impacts to air quality for criteria pollutants from the proposed action would be considered minor. Emission thresholds associated with the Federal CAA conformity requirements are the primary means of assessing the significance of air quality impacts and do not apply to the proposed action because the proposed project area is in attainment for all criteria pollutants listed in Table 3.5-1. Potential impacts are evaluated based on estimated direct and indirect emissions associated with the construction and operation of the Wallace Creek Regimental Area. The CAA requires that the USEPA promulgate rules to ensure that Federal actions conform to the appropriate State Implementation Plan. These rules also are only applicable to non-attainment areas, and are therefore not relevant to this proposed project since Onslow County is in attainment for all criteria pollutants. However, due to the large scale of this project, emissions estimates were calculated and are provided below. No lead containing materials or leaded gasoline would be used under the proposed action; therefore, lead emissions would be zero.

Short-Term Emissions

There would be minor and short-term impacts to air quality from the construction of the proposed Wallace Creek Regimental Area as summarized in Table 4.5-1. These impacts would be related to emissions from worker privately owned vehicles, mobile sources utilized at the site (i.e., construction vehicles and petroleum-fueled equipment) and from fugitive dust emissions. These impacts would be temporary in nature and would cease following the completion of construction activities and therefore, would not result in the proposed project area falling into non-attainment status under the CAA.

The greatest emissions would occur during the final year of construction when the largest amount of facilities are built (2010). Emissions calculations for 2007-2009 are in compliance with the most stringent emissions *de minimis* thresholds for all criteria pollutants. With the exception of PM₁₀ emissions, estimated criteria pollutant emission for 2010 would be within the *de minimis* thresholds set for marginal/moderate nonattainment areas. Particulate matter emissions would be greatly reduced and controlled using standard management practices (e.g., routine sweeping and wetting).

Table 4.5-1

Wallace Creek Short-Term Air Emission Totals - Years 2007 – 2010 (tons/year)

(Construction, Worker Commute)

Year	Volatile Organic Compounds	Carbon Monoxide	Nitrogen Oxides	Sulfur Dioxide	PM ₁₀	PM _{2.5}
2007	4.12	7.90	15.34	1.71	40.33	4.80
2008	5.78	8.00	19.43	2.24	61.66	7.23
2009	0.55	2.48	5.28	0.62	4.25	0.72
2010	21.84	28.88	74.16	8.55	522.38	56.18

Long-Term Emission

There would be minor long-term impacts to air quality as a result of privately owned vehicles of Marines commuting from areas off-base and from the operation of standard heating equipment in the newly constructed facilities. Estimated long-term annual emissions resulting from the proposed action are presented in Table 4.5-2. Long-term emissions calculations are in compliance with the most stringent emissions *de minimis* thresholds for all criteria pollutants. These emissions are considered to be minor.

Table 4.5-2

Wallace Creek Long-Term Emission Totals (tons/year)
(Commute, Air Operations)

Volatile Organic Compounds	Carbon Monoxide	Nitrogen Oxides	Sulfur Dioxide	PM ₁₀	PM _{2.5}
2.24	24.70	7.56	0.30	0.74	0.74

4.6 NOISE

No Action Alternative

Under the No Action Alternative, existing noise conditions on the Base would remain relatively unchanged. There would be no noise impacts under the No Action Alternative.

Proposed Action

The proposed action would not include weapons firing, demolition, or aircraft noise. The noise generated by the proposed action would be associated with the construction phases of the project. Construction activities that would impact community noise levels include noise from construction equipment operating at the site and construction/delivery vehicles traveling to and from the site. Noise levels at a given receptor location would depend on the type and number of pieces of construction equipment being operated and the receptor's distance from the construction site. Small increases in noise levels along the truck routes would be expected as a result of the operation of delivery trucks and other construction vehicles. Noise impacts would vary widely, depending on the phase of construction and the specific task being undertaken. Phases of construction that would generate noise include: land clearing and excavations, foundation and capping, erection of structural steel, and construction of exterior walls. Increased noise levels would be greatest during the early stages of each construction phase, although these periods would be of relatively short duration. Under these circumstances, the noise generated would be similar to noise generated by other construction projects on the Base.

The proposed action would construct residential uses (BEQs) in a Noise Zone 2 area. Land use compatibility guidelines outlined in the MCBCL Range Compatible Use Zone state that residential use is conditionally compatible in a Noise Zone 2 if measures are taken to achieve a noise level reduction of 25dB from outside to inside. Mitigation measures such as mechanical ventilation and appropriate construction materials would be included in the design phase of the proposed project. Further, as with the existing BEQs located in Noise Zone 2 areas, the military occupants would normally be at work during the day hours when military noise sources such as weapons firing would be most active. In addition, military personnel would be expected to be

less sensitive to military noise than the general public. Therefore, construction of BEQs in a Noise Zone 2 area would result in a minor adverse impact.

4.7 INFRASTRUCTURE AND UTILITIES

4.7.1 Water Supply

No Action Alternative

Water would continue to be provided by the Hadnot Point WTP under the No Action Alternative. The demand for water would not change and no impacts to the water supply are expected.

Proposed Action

The proposed action would have no adverse impacts on water supply. The Hadnot WTP is one of the Base's largest water supply and treatment systems. The Hadnot WTP has a capacity of 19 mld (5 mgd) and an estimated average demand of 10.8 mld (2.85 mgd). Based on recently calculated water usage rates for a similarly sized project, the MARSOC Complex, it is estimated that the proposed action would generate a water demand of approximately 0.515 mld (0.136 mgd). The demand created by operation of facilities is expected to be within the available capacity of the Hadnot WTP.

Existing waterlines run along McHugh Blvd. and Birch Road and have sufficient capacity to serve the Regimental complex for domestic water requirements. Water will be fed to a new 946,353 liter (250,000 gallon) elevated water tank funded by FY'08 project P-137. Water for fire suppression shall be distributed from fire hydrants and to sprinkler systems inside of buildings.

4.7.2 Wastewater

No Action Alternative

Under the No Action Alternative, there would be no development of the Wallace Creek Regimental Area. Wastewater processing would remain unchanged and no impacts would occur.

Proposed Action

The advanced WWTP located in the French Creek area presently processes 19 mld (5 mgd). The WWTP was designed for and is permitted to discharge up to 57 mld (15 mgd). Based on similar wastewater generation rates from the MARSOC Complex, it is anticipated that the proposed action would generate approximately 0.75 mld (0.19 mgd) of wastewater (2.82 mld

[0.74 mgd] peak flow). Therefore, the WWTP could accommodate the additional wastewater generated by operation and maintenance of the proposed Wallace Creek Regimental Area. In addition, the planned wastewater system upgrades and modifications proposed by the USMC under a separate project and described in Subchapter 1.4 will further reduce the likelihood of adverse effects.

A gravity collection system will service the Wallace Creek Regimental Area. This will drain to a proposed sewer lift station that will pump to the proposed lift station adjacent to the utility corridor to the east, north of its intersection with Parachute Tower Road (described in Subchapter 1.4). The regimental complex pump station shall be sized to handle the flows from FY'08 through the final FY'10 project build-out.

4.7.3 Electricity

No Action Alternative

Under the No Action Alternative, there would be no development of the Wallace Creek Regimental Area. The demand for electricity would not change and no impacts would occur.

Proposed Action

Detailed engineering has yet to be performed, and specific electrical demands have yet to be determined; however, the demand for additional electricity at the proposed Wallace Creek Regimental Area is expected to be met without difficulty. Any adverse impacts to the supply of electricity are expected to be minor.

4.7.4 Natural Gas

No Action Alternative

Under the No Action Alternative, there would be no development of the Wallace Creek Regimental Area. Natural gas usage would remain the same and impacts would not occur.

Proposed Action

Natural gas would fuel a portion of the Wallace Creek Regimental Area buildings. The local gas company, Piedmont Natural Gas, would install, own, and operate the new branch main(s) and services to individual buildings. In general, meters would be provided at the individual buildings. Some of the small facilities may not require natural gas service. Any adverse environmental impacts from supplying natural gas are expected to be minor. Routes for natural gas service would be reviewed by the Base environmental staff when identified.

4.7.5 Solid Waste

No Action Alternative

If the No Action Alternative were to be implemented, then solid waste generation at Camp Lejeune would remain the same. There would be no impacts to solid waste.

Proposed Action

Solid waste generated during construction and operation of the Wallace Creek Regimental Area would be disposed of at the Base landfill on Piney Green Road. Solid waste would be generated by personnel living in the BEQs, personnel working at the complex, and the routine operation of the complex. By 2010, it is estimated that proposed action would consist of a gain of approximately 2,100 personnel, which would be a 5 percent increase from the existing 42,241 active duty personnel at Camp Lejeune. As a result, there would be additional solid waste generated from personnel working at the Wallace Creek Regimental Area and from operation of facilities.

Several types of materials would be recycled from office operations and would not become solid waste: paper products, compact disks, aluminum cans, food and beverage cans, glass, plastic bottles, and toner cartridges. In addition, construction wastes would be minimized and recycled to the greatest extent available.

The USEPA estimates that the average person generates approximately 4.54 pounds of solid waste per day (USEPA, October 2006). Using this USEPA estimate, the increase in solid waste generated by the proposed action is calculated to be 4.3 metric tons per day (9,534 pounds per day) or 129 metric tons per month (142 tons per month). Compared to the rate of solid waste disposal at MCB Camp Lejeune as a whole, this represents about a 4 percent increase. The proposed action would result in minor adverse impacts to solid waste.

4.7.6 Stormwater

No Action Alternative

Under the No Action Alternative, there would be no development of the Wallace Creek Regimental Area. Stormwater management would remain much the same and impacts would not occur.

Proposed Action

The Base's 2002 Stormwater Pollution Prevention Plan is a comprehensive program to control stormwater discharges while its Standard Operating Procedure establishes requirements and assigns responsibilities for the implementation of the Stormwater Management NPDES Phase II requirements (the permit is expected to be issued in 2008). Both would be followed during the design and operation of the Wallace Creek regimental area facilities to control and treat

runoff. Development of facilities would take place on roughly 122 ha (302 ac) and approximately 38 ha (94 ac) of that would be impervious surfaces. This will increase the amount and velocity of stormwater. However, according to conceptual design, approximately 3 ha (7 ac) of stormwater ponds would be constructed within the Wallace Creek Regimental Area project area to control this increase in stormwater.

Best management practices (BMPs) 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. Long-term BMPs, such as oil/water separators, would be developed as part of the site design process. Other mitigation measures would include planting grass on bare areas and planting ornamental shrubs and trees with mulching in select areas. This vegetation would serve to aid in absorption and filtering stormwater runoff.

Lastly, Camp Lejeune's current Stormwater Phase I permit was approved in 2004. When this permit is renewed again (sometime around 2009) all new facilities, such as those included in the proposed action, would be evaluated for compliance with the permit requirements to determine if they need to be included. This permitting process involves preparation of an outfall management plan; the proposed action would be included in that plan. Therefore, the proposed action would result in minor adverse impacts to stormwater.

4.8 CULTURAL RESOURCES

4.8.1 Historic Resources

No Action Alternative

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

Proposed Action

In 2004, the NC SHPO concurred that the Parachute Training Historic District is eligible for inclusion in the NRHP (Brook, June 2004) (Appendix A). The Parachute Training Historic District consists of three discontinuous contributing resources: PT-4, PT-5, and PT-6. These three resources are within the area of potential effects (Figure 4-1, Cultural Resources - Area of Potential Effects at the Wallace Creek Regimental Area). However, PT-4 and PT-5 are not in proximity to the construction of the complex facilities. PT-6 is adjacent to one of the buildings and a parking area, but no physical alteration or construction would occur within the NRHP

Cultural Resources – Area of Potential Effects at the Wallace Creek Regimental Area

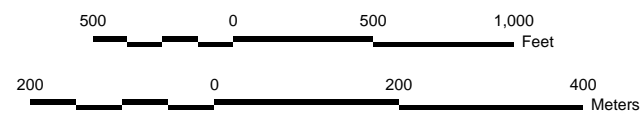
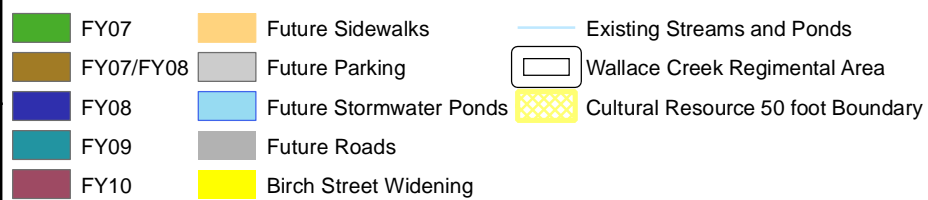
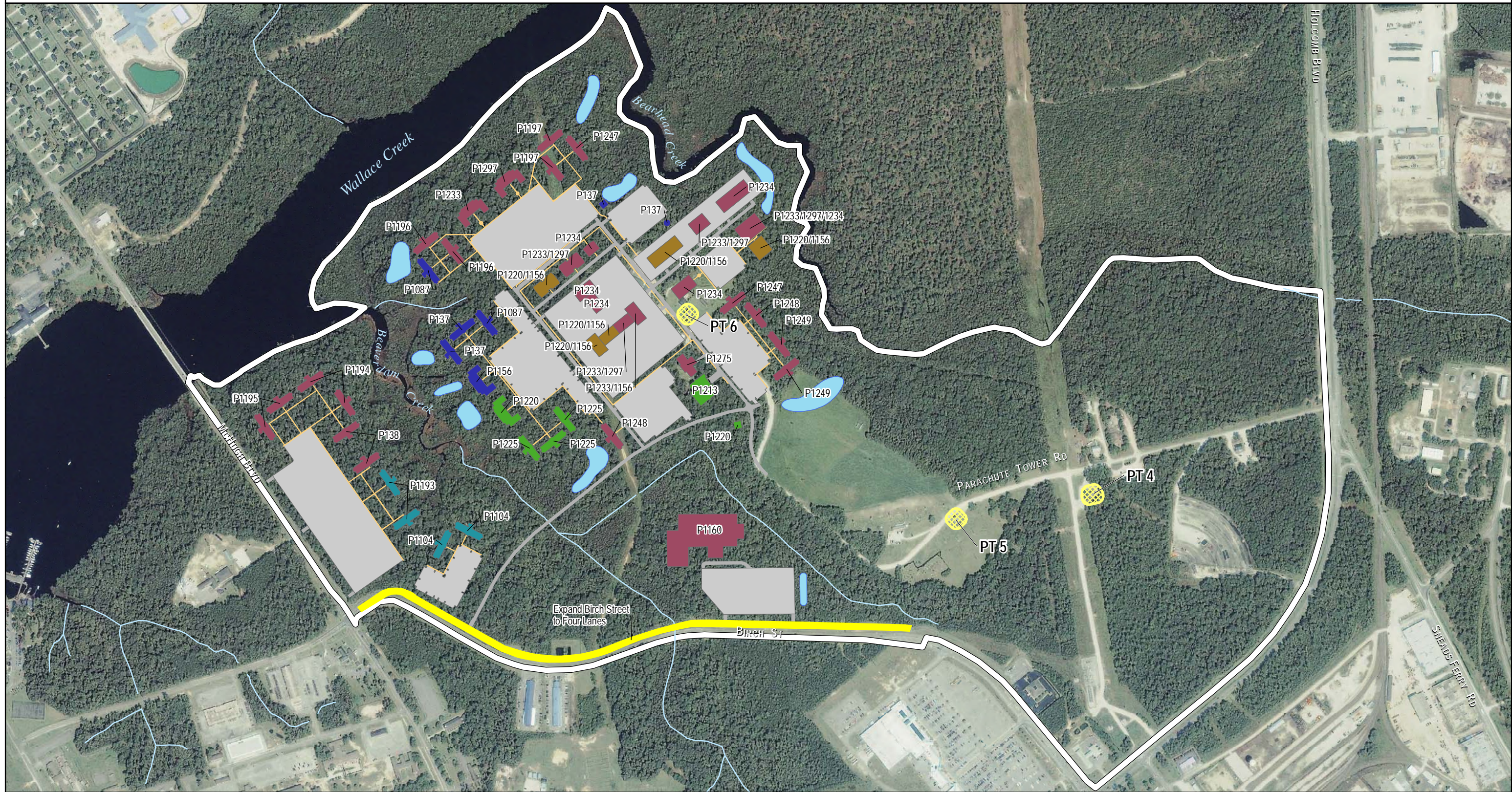


Figure 4-1

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boundary of the building. In addition, the roadway running along the three buildings, Parachute Tower Road, is considered a non-contributing element and therefore its realignment is not considered to be an issue. Therefore, no historic properties would be affected by the proposed action (Townson, April 2008) (Appendix A).

4.8.2 Archaeological Resources

No Action Alternative

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

Proposed Action

Three potentially eligible archaeological sites were identified within the boundaries of the proposed project area: 31ON1059, 31ON1077, and 31ON1132. Phase II field survey and evaluation of these sites determined that none of the three sites meet the NRHP criteria for eligibility. Therefore, implementation of the proposed action would not affect any NRHP-eligible archaeological sites (Townson, April 2008) (Appendix A).

4.9 NATURAL RESOURCES

4.9.1 Geology, Topography, and Soils

No Action Alternative

The No Action Alternative would not result in impacts to geology, topography, or soils. Soil profiles and vegetative cover would remain intact at the project area.

Proposed Action

Minor impacts to existing topography would occur during clearing and grading of the Wallace Creek Regimental Area project area. Construction activities would have no direct impact on geological formations at the project area. During construction, soils at the site would be affected through clearing, grading, compaction, and potential erosion. Erosion impacts would be temporary and would be minimized by employing BMPs for soil erosion and sedimentation control at the construction site. Most of the affected soils would eventually be covered with impervious surfaces or vegetation, preventing long-term erosion.

4.9.2 Water Resources

No Action Alternative

Neither surface water nor groundwater resources would be impacted under the No Action Alternative because there would not be any construction at the project area. Groundwater levels and water quality would remain in their current condition.

Proposed Action

Construction of the proposed Wallace Creek Regimental Area would have minimal adverse effect on surface waters. Approximately 8 m (26 ft) of intermittent streams and approximately 9 m (30 ft) of perennial streams near Beaverdam Creek would be impacted by the construction of the Wallace Creek Regimental Area facilities. This would occur from the new road crossing Beaverdam Creek and Birch Road being widened over Beaverdam Creek. Appropriate BMPs would be used both during construction and during the long-term operation and maintenance of the complex. The BMPs would ensure removal of suspended particulates prior to surface runoff entering Wallace Creek, New River, Beaverdam Creek, and Bearhead Creek. Camp Lejeune would prevent contamination of water resources by properly storing all fuel and maintaining hazardous materials storage areas in compliance with MCO P5090.2A, Change 1, Chapter 20 and the Base's 2002 Stormwater Pollution Prevention Plan (DoN, February 2002).

Withdrawing groundwater from the Castle Hayne aquifer to provide potable water to the new facilities is not expected to cause a decline in groundwater levels (see Subchapter 4.7.1). Camp Lejeune would continue to monitor groundwater quality and quantity.

4.9.3 Wetlands and Floodplains

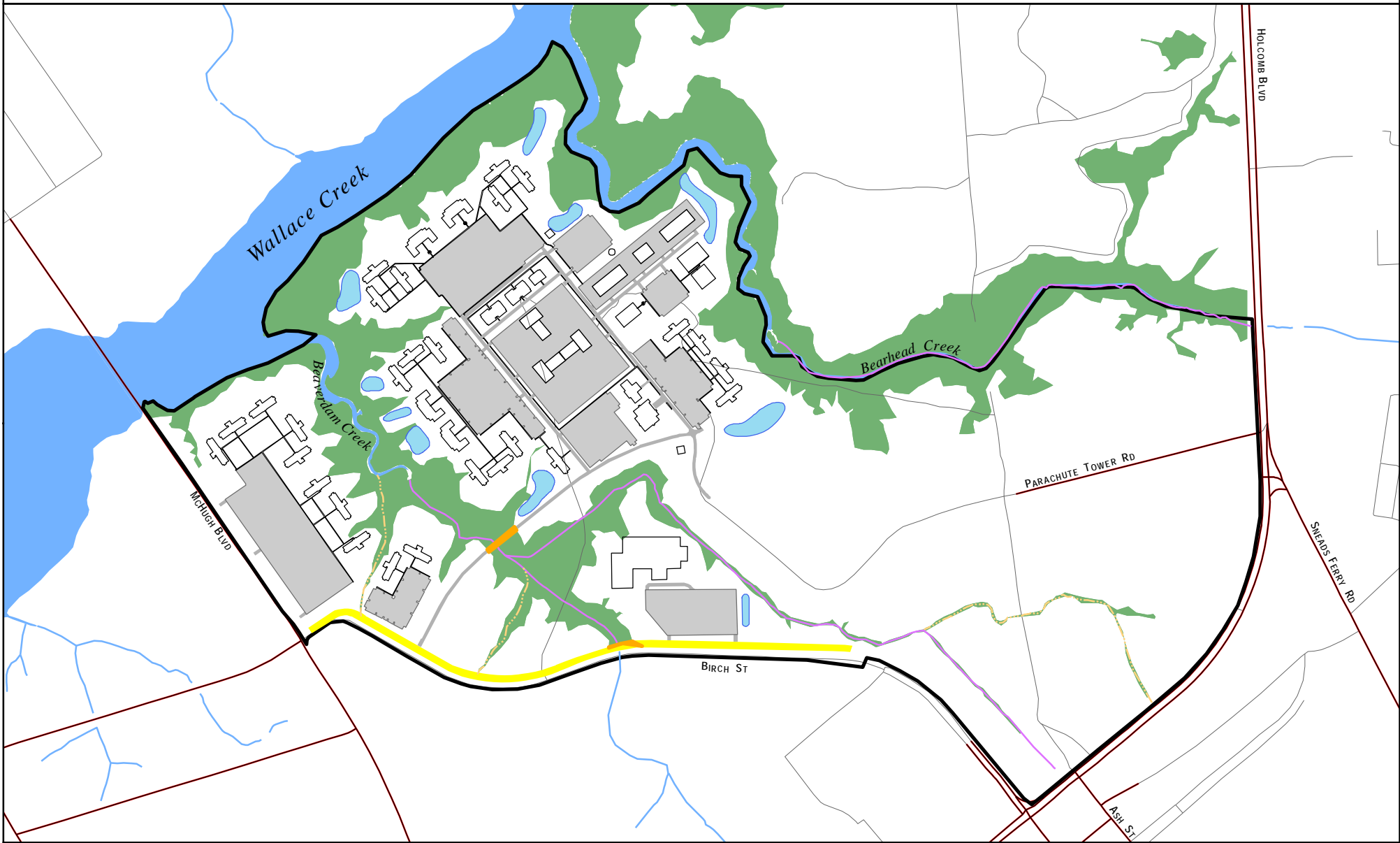
No Action Alternative

There would be no impacts to floodplains or wetlands as the No Action Alternative does not involve facility development. When facility development is considered on Base, it is routinely planned to avoid floodplains and wetlands whenever possible.

Proposed Action

The layout of the proposed development has been designed to avoid and minimize direct and indirect impacts to wetland, streams, and floodplain areas to the greatest extent possible. However, the proposed action has the potential to adversely impact wetlands at MCB Camp Lejeune. New road construction would adversely impact two wetland areas where they are crossed (Figure 4-2, Impacts to the Wetlands at the Wallace Creek Regimental Area). The proposed new westernmost road would impact approximately 630 sq m (6781 sq ft) of wetland area. This road has been aligned to cross the wetland at its narrowest point near the complex. The widening of Birch Street may impact approximately 250 sq m (2691 sq ft) of wetland area. Other wetlands are present along the site boundary; therefore, protective measures would be

Impacts to Wetlands at the Wallace Creek Regimental Area



- | | |
|-------------------------|-------------------------------|
| Potential Impacts | Future Roads |
| Jurisdictional Wetlands | Birch Street Widening |
| Future Buildings | Wallace Creek Regimental Area |
| Future Sidewalks | Intermittent Stream |
| Future Parking | Perennial Stream |
| Future Stormwater Ponds | |

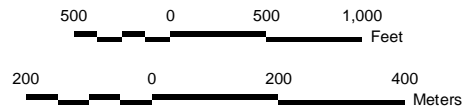


Figure 4-2



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used to avoid the indirect impact to adjacent wetlands. Wetland protection measures as outlined in the *Memorandum of Agreement Between the Department of the Army and the Environmental Protection Agency, The Determination of Mitigation under the Clean Water Act Section 404 (b) (1) Guidelines* (US Army Corps of Engineers and USEPA, February 1990) would be followed:

- Avoidance - avoid potential impacts to the maximum extent practicable
- Minimization - take appropriate and practicable steps to minimize the adverse impacts (e.g., limit the anticipated impact to an area of the wetland with lesser value than other areas, or reduce the actual size of the impacted area)
- 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)

The total area of wetlands to be impacted by the proposed construction of the Wallace Creek Regimental Area would be approximately 0.09 ha (0.22 ac). MCB Camp Lejeune would mitigate impacts to wetlands in accordance with the wetland permit conditions to satisfy mitigation requirements.

Approximately 32 ha (80 ac) of floodplains are present in the project area. Based on the conceptual plan for the layout of facilities, the construction of one of the BEQs (P-138) would occur within the Wallace Creek floodplain and would adversely affect approximately 25 sq m (270 sq ft) of floodplain. If design plans should be developed for construction purposes, MCB Camp Lejeune would work closely with the design-build contractor to site the P-138 BEQ outside of the floodplain.

The construction of the new roadways has the potential to adversely impact approximately 520 sq m (5,600 sq ft) of floodplain, and the widening of Birch Street may impact approximately 370 sq m (3,983 sq ft) of floodplain. All remaining facilities would be located outside of the floodplain and would have no impact. In total, the proposed action has the potential to adversely impact approximately 0.09 ha (0.22 ac) of floodplain. The parking lot would not be considered an incompatible type of development within a floodplain.

Typically, placing fill in floodplains may block the flow of water and increase flood heights. However, proposed development within the floodplain would only be about a tenth of one percent of the total size of the Wallace Creek floodplain and is considered to be a minor adverse impact.

4.9.4 Vegetation

No Action Alternative

The No Action Alternative would not affect vegetation because no land clearing activities would occur. The Base's Forest Management Program would continue to support the military mission, enhance the ecological integrity of forestlands, and generate revenue to support active forest management.

Proposed Action

The project area is approximately 162 ha (401 ac) of mixed pine-hardwood forest. Implementation of the proposed action would result in the removal of roughly 64 ha (158 ac) of the total 162 ha (401 ac) forested area. The forested portion of the proposed project area contains merchantable timber with stocking levels and tree ages that would make the stand commercially valuable. After clearing, this acreage would be permanently removed from future timber commodity production. The forested portion of the proposed project area represents less than one percent of the Base's total forested land (37,352 ha [92,300 ac]). Although land would be cleared to accommodate the proposed facilities, the scale of land clearing in comparison to the current extent of managed forests on-base or the amount of resources remaining for management after project construction would be minor. Therefore, the impact to vegetation would be minor. After construction, mitigation measures would include planting grass along roadsides and around buildings, with the addition of ornamental shrubs, trees, and mulching in select areas. The proposed action would result in a permanent change of vegetation within the footprint of development from forest to a developed area.

4.9.5 Wildlife

No Action Alternative

The No Action Alternative would not result in impacts to wildlife or wildlife habitat. 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.

Proposed Action

The removal of 64 ha (158 ac) of mixed pine-hardwood forested habitat at the Wallace Creek Regimental Area 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 as a result of construction activity. Wildlife residing in the periphery of the construction site may be temporarily displaced as a result of the noise and activity of construction. There would also be a permanent loss of foraging habitat. While there would be an adverse impact to individual animals under the proposed action, these impacts would not affect the stability of local wildlife populations.

Migratory bird species that have the potential to occur within the project area are identified in Appendix B. Minor impacts to migratory birds would occur due to loss of resting, roosting, and foraging habitat. Population level effects would not occur because the proposed action area represents a small portion of the habitat available on a base-wide and regional basis. Therefore, the proposed action would have minor adverse impacts on a population of migratory bird species and would not require prior coordination with the USFWS. Similarly, the proposed action is not anticipated to have adverse impacts to a population of migratory and non-migratory bird species of conservation concern as identified by the USFWS in their *Bird of Conservation Concern 2002*.

4.9.6 Threatened and Endangered Species

No Action Alternative

There would be no impacts to threatened and endangered species or their habitat under the No Action Alternative. Protected species and their habitats would continue to be managed under Camp Lejeune's Threatened and Endangered Species Management Program for conservation and recovery in accordance with all environmental laws, regulations, and terms and conditions in applicable USFWS biological opinions.

Proposed Action

No threatened and endangered species are known to occur in the project area. The nearest RCW cluster is located 2.6 km (1.6 mi) from the project area. The forested habitat in the Wallace Creek Regimental Area is not in or near the RCW Management Areas, where resources are managed to enhance RCW habitat. Therefore, the removal of forest within the project area for development of facilities and infrastructure would not impact potential RCW habitat.

The nearest bald eagle nest is 10.5 km (6.5 mi) away from the proposed project area. This is well outside the outermost protective buffer in which activity restrictions apply. Therefore, the proposed action is not likely to adversely affect the RCW, bald eagle, or any other federally endangered or threatened species currently proposed for federal listing under the Endangered Species Act.

4.10 HAZARDOUS MATERIALS AND WASTE

4.10.1 Hazardous Materials and Waste Management

No Action Alternative

The existing conditions in hazardous materials and waste management would not change under the No Action Alternative. Camp Lejeune would continue with currently scheduled remedial actions and environmental pollution abatement as outlined in the Base Order on *Oil and*

Hazardous Substance Pollution Prevention and Pollution Abatement Facility Management (MCB Camp Lejeune, May 1999). Management of waste streams would be unaffected. As a result, no impacts are expected to hazardous materials and waste management under the No Action Alternative.

Proposed Action

Implementation of the proposed action would result in an increase in the use of various hazardous materials including but not limited to; oils, lubricants, acids, solvents and degreasers. This increase would in turn result in an increase in the volumes of hazardous materials and wastes entering and leaving the base. During operations and maintenance of the proposed Wallace Creek Regimental Area, the management of hazardous materials would be conducted in accordance with all applicable laws and regulations. All personnel would be required to follow the procedures established by Base Orders 6240.5B and 11090.3A for handling hazardous materials and petroleum, oil, and lubricants. By following these procedures, releases of contaminants would be minimized.

The increased use of hazardous materials on base has the potential to result in an increase of accidental releases of contaminants (i.e. spills). Handling of hazardous materials and wastes by personnel would be conducted in accordance with all applicable procedures in order to minimize spill occurrence and any accidental releases would be immediately addressed in accordance with the facility spill response plan. As a result, impacts from accidental releases or hazardous material would be considered minor.

Implementing the proposed action at the Wallace Creek Regimental Area project area would result in minor adverse impacts from hazardous materials and waste management.

4.10.2 Contaminated Sites

No Action Alternative

The existing conditions at contaminated sites would not change under the No Action Alternative. MCB Camp Lejeune would continue with currently scheduled remedial actions and environmental pollution abatement as outlined in the Base Order on *Oil and Hazardous Substance Pollution Prevention and Pollution Abatement Facility Management* (MCB Camp Lejeune, May 1999). No impacts are expected to occur within the project area under the No Action Alternative.

Proposed Action

Demolition of existing facilities and remediation would be completed prior to construction activities where necessary. Usual BMPs would be employed in the handling, removal and disposal of potentially hazardous substances. Furthermore, if necessary, MCB Camp Lejeune

would obtain appropriate approvals from USEPA and NCDENR regarding proposed development at the project area.

IR Site 19 – Former Naval Research Lab Dump

Based on historical information and the results of previous and recent radiological survey and sampling at IR Site 19, there is no radiation exposure hazard for personnel working in the project area (NAVFAC Mid-Atlantic, February 2008). However, additional investigation for potential radioactive material was recommended by Naval Sea Systems Command Detachment RASO in the area as shown in Figure 4-3. A radiological investigation to be performed by Naval Sea Systems Command Detachment RASO and their associated contractors is programmed for FY2008. Comparison of recent soil and groundwater sampling data with historical data from SWMU 43 RCRA Facility Investigation indicate that arsenic levels reported within the vicinity of site 19 are determined to be within acceptable risk. It is recommended that a human health risk assessment be conducted on the collected data. If health risk assessments determine an unacceptable risk, industrial remediation would be required to reduce risk to site workers. Site workers would also be required to wear appropriate personal protective equipment to prevent potential health risks.

Figure 4-3, Contaminated Sites - Areas of Concern at the Wallace Creek Regimental Area, shows the location of IR Site 19 in relation to the proposed facilities associated with the proposed action. Maintenance operations facilities would be constructed immediately west of IR Site 19. Most of IR Site 19 would be overlain by a parking lot. The construction of a parking area would constitute an engineered control and would effectively contain underlying contaminated material. A messhall and BEQs are proposed to be near but outside the boundaries of the IR Sites. Dependent on the proximity of these proposed facilities, residential remediation goals may be required. These would include surficial soil removal and the use of engineered controls such as paving to isolate the arsenic which is found to exceed the USEPA residential PRGs limit of .39 ppm. As a result of testing IR Site 19 and subsequent remedial activities, the proposed action would have a long-term beneficial impact to site soils.

IR Site 20 – Former Naval Research Lab Incinerator

Soil and groundwater sampling data compared with SWMU 43 RCRA Facility Investigation indicated arsenic levels at IR Site 20 to be within acceptable risk. A human health risk assessment is recommended to be performed on data collected on IR Site 20. An elevated detection of trichloroethene was reported in a duplicate sample from one of the soil surface locations at IR Site 20. It may have been an anomaly or isolated sampling; however confirmatory sampling would be conducted prior to implementation of the proposed action. If such an analysis should determine trichloroethene levels to pose an unacceptable risk, remedial activities would be required in order to reduce the risk to acceptable levels.

As shown in Figure 4-3, IR Site 20 would be overlain by a parking area. Proposed facilities located near IR Site 20 include a medical/dental clinic, maintenance operations facilities, and

BEQs and a messhall. Dependent on the proximity of these facilities, residential remediation goals may be required. These may include but are not limited to paving and surficial soil removal. Contaminants that exceeded USEPA residential PRGs in surficial soils at this site include arsenic, with a 0.39 ppm maximum and trichloroethene with a 53 ppm maximum.

In addition to remediation, site workers would be required to wear appropriate personal protective equipment to protect them from any potential health risks. As a result of testing IR Site 20 and subsequent remedial activities, the proposed action would have a long-term beneficial impact to site soils.

IR Site 25 – Former Base Incinerator

Soil and groundwater sampling data compared with SWMU 43 RCRA Facility Investigation indicated arsenic levels at IR Site 25 to be within acceptable risk. A human health risk assessment is recommended to be performed on data collected on IR Site 25 in order to confirm this data evaluation for arsenic.

Several BEQs are proposed near IR Site 25, though the entire site boundary would be overlain by a parking area. The construction of the parking area would constitute an engineered control and would effectively contain underlying contaminated material. Industrial PRGs for surficial soils would still need to be met and appropriate personal protective equipment used during construction to ensure site worker health.

ASR Site 2.82 – Active Base Skeet Range

Lead concentrations at the active base skeet range exceeded Industrial PRGs at nine surface soil locations and two shallow groundwater locations. The area of lead impact was generally within shot-fall region of the range. Additional sampling of surface soils and groundwater as well as a risk assessment was recommended to address this area of elevated lead concentrations. Should subsequent investigations and assessments determine that the site poses an unacceptable risk, remedial activities to USEPA industrial PRGs would be required in order to reduce the risk to site workers to acceptable levels prior to the implementation of the proposed action. An anomaly investigation, to determine if unexploded ordnance exists at the site, is programmed for FY2008.

Since several BEQs are proposed to be constructed within the footprint of the active base skeet range fan, stricter residential remediation goals for this site may be required for surficial soils. Interim USEPA guidelines call for exposure-reduction activities (e.g., using ground cover to create a barrier over contaminated soil) when lead levels in bare residential soil are between 400 and 5,000 ppm. Permanent abatement (e.g., removal and replacement) of bare residential soil is recommended when lead concentrations exceed 5,000 ppm. The Housing & Urban Development guidelines set exterior dust lead levels in excess of 74 micrograms per sq m (800 micrograms per sq ft) as a lead hazard (DeGrandchamp, June 2005).

Contaminated Sites – Areas of Concern at the Wallace Creek Regimental Area

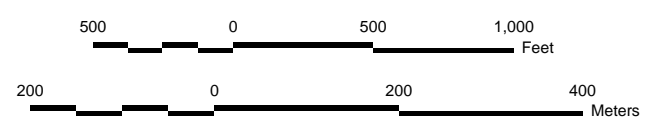
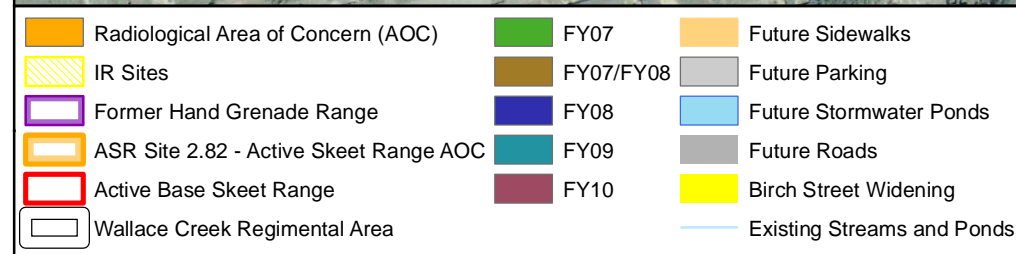
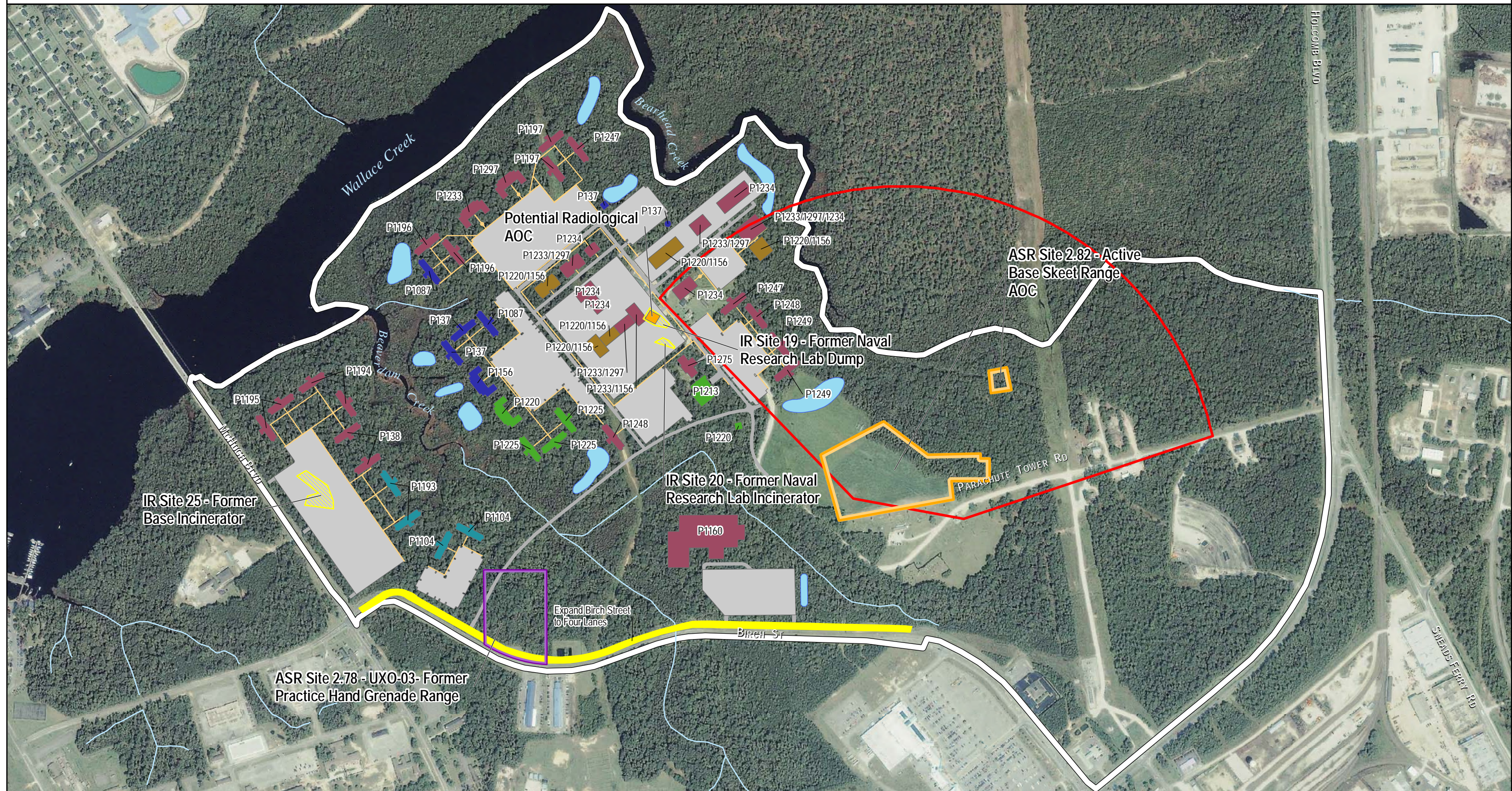


Figure 4-3

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The proposed action would have a beneficial impact to site soils and groundwater. Long-term beneficial impacts associated with the removal of the Active Base Skeet Range would be offset by the creation of a replacement skeet range elsewhere on the Base. Camp Lejeune has recently identified a new location for the skeet range that is outside of the proposed Wallace Creek project area. The affected environment for this replacement facility is similar to actions being analyzed within the *Environmental Assessment for Security Gate Upgrades, Road Improvements, Landfill Expansion, and Relocation of Skeet Range, MCB Camp Lejeune, North Carolina*. Therefore, this new replacement facility has been included for impact analysis in that document.

ASR Site 2.78 – Former Practice Hand Grenade Range

Results of the recent site investigation and sampling of the former practice hand grenade range show no excess of industrial PRGs in surface and subsurface soils. In addition, 17 total metals and 15 dissolved metals were detected in the shallow groundwater; however, none exceeded the North Carolina Groundwater Quality Standards. Since no housing structures are proposed in this area, remediation beyond industrial criteria is not warranted.

4.11 UNAVOIDABLE ADVERSE IMPACTS

The primary unavoidable, adverse impacts on the environment resulting from the implementation of the proposed action would be the long-term effects of the removal of up to 64 ha (158 ac) of mixed pine- hardwood forest. This would reduce the carrying capacity for wildlife species associated with that type of habitat but would be minor in the context of all similar forested areas within Camp Lejeune. Currently, this area is under forest management. Once developed, future revenue from the sale of forest products within the project area would be eliminated. In addition, noise generating activities would occur during the construction phases of the project and also from military training that would be conducted at proposed training facilities within the Wallace Creek Regimental Area. The proposed action also includes several actions that would result in increased air emissions.

Approximately 8 m (26 ft) of intermittent and approximately 9 m (30 ft) of perennial streams near Beaverdam Creek would be impacted by the construction of the Wallace Creek Regimental Area facilities. Additionally, new road construction would adversely impact wetlands where they are crossed. The proposed new westernmost road would impact approximately 630 sq m (6781 sq ft) of wetland area. The widening of Birch Street may impact approximately 250 sq m (2691 sq ft) of wetland area. In addition, the proposed action has the potential to adversely impact approximately 0.09 ha (0.22 ac) of floodplain. Five hazardous waste sites would be impacted by the proposed action. However, assessment/site investigation and any necessary remediation would be completed prior to construction.

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

4.12 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 facilities at the project areas.

From a long-term perspective, the proposed action would improve the military's capability to provide a mission ready force. The negative impacts of achieving this capability would be the removal of up to 64 ha (158 ac) of mixed pine-hardwood habitat and the associated wildlife species. The loss of forested habitat also results in a long-term, though minimal, reduction in commodity production and revenues. While the initial clearing of the proposed action area would generate timber revenues, this would be at the expense of long term revenue generation from future thinning and regeneration of a forest site. This lost revenue would directly reduce funding for forest management activities on the Base.

4.13 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

Fuel, construction materials, and labor would be expended during construction of facilities. Operating the new facilities would require energy to heat, cool, and light the buildings. Commitment of these resources would be considered minor. Moreover, the proposed action would not result in the destruction of environmental resources such that the range of potential uses of the environment would be limited, nor impact the biodiversity of the region.

4.14 MITIGATION MEASURES

The following mitigation measures would be implemented as part of the proposed action:

- 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 at telephone (910) 451-7230
- BMPs would be used to avoid and minimize the release of sediments into stormwater. Mitigation plans would include both short-term (construction phase) and long-term (project life) features to meet the requirements of the Base's Stormwater Pollution Prevention Plan
- All projects would be designed to avoid and minimize impacts to wetlands and waters of the US

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5 CUMULATIVE IMPACTS

Cumulative impacts are defined by the Council on Environmental Quality in 40 CFR 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.

The Council on Environmental Quality regulations further require that NEPA environmental analyses address connected, cumulative, and similar actions in the same document (40 CFR 1508.25). There are several recent, present, and future planned projects at Camp Lejeune to be considered when analyzing the cumulative effects of the proposed facility construction at the Wallace Creek Regimental Area and associated influx of 2,100 Marines and their family members.

5.1 OTHER PAST OR PLANNED ACTIONS IN THE VICINITY OF THE PROPOSED ACTION

Past and future MCB Camp Lejeune projects that could interact directly or indirectly with the proposed action are discussed below. These projects, which are all on MCB Camp Lejeune, are neither dependent on the proposed action nor part of it. Other projects on MCB Camp Lejeune that do not have the potential to interact cumulatively with the proposed action are not addressed in this EA.

5.1.1 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, September 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, FY 2005. The EA for the Force Structure Review Group Initiatives for FY 2005 (MCB Camp Lejeune, August 2005) assessed the impacts of constructing 57,400 sq m (617,900 sq ft) of facilities and modifying several existing facilities, all of which were designed to accommodate 2,100 new military personnel at MCB Camp Lejeune. These personnel 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, November 2005). 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 EA determined that there would be no significant adverse impacts on the environment. Impacts to coastal zone management, navigation, air quality, environmental justice, noise, wildlife, and vegetation would be negligible. State-approved erosion and sedimentation control plans have been implemented as necessary for construction activities. 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 MARSOC Complex (MCB Camp Lejeune, August 2007) that is proposed in the Stone Bay Rifle Range part of the Base. MARSOC is expected to have approximately 1,750 Marines at Camp Lejeune by 2010. It is estimated that half of these personnel would transfer into MARSOC from other existing on-base units, while the remaining half would be new personnel. Thus, the proposed action involves approximately 875 new personnel becoming stationed at Camp Lejeune. The MARSOC Complex would be 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 MARSOC Complex resulted in a determination of a FONSI.

5.1.2 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. Finally, 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. This lift station would be designed to accommodate the wastewater from the proposed Wallace Creek Regimental Area.

Security Gate Upgrades, Road Improvements, and Landfill Expansion. 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, and construction of Phase III of the Municipal Solid Waste Landfill Facility 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.

Grow the Force. The USMC is preparing an EIS to address the total influx of personnel that is expected at MCB Camp Lejeune in the coming years in relation to achieving a balanced growth in capability throughout the Marine Corps. Although the total USMC growth in end strength has not yet been quantified, it is expected that there would be yearly incremental increases in the existing war-fighting organization of the Marine Corps. This EIS will also be addressing facility construction designed to meet the operational and training needs of these incoming personnel. An EA and FONSI have been prepared to analyze the impacts of temporary facilities that are needed to accommodate the influx of personnel at MCB Camp Lejeune until permanent facilities can be analyzed in the EIS and later constructed.

5.2 POTENTIAL CUMULATIVE IMPACTS BY ENVIRONMENTAL RESOURCE AREA

5.2.1 Land Use and Coastal Zone Management

The proposed action would result in a change to the project area land use from mixed forest to developed areas. The Marine Corps, through the Coastal Consistency Determination process, has determined that implementing the proposed action would be fully consistent with the applicable policies of the North Carolina Coastal Management Act. Other projects on Camp Lejeune would be subject to the North Carolina Coastal Area Management Act and other land use policies. These regulations would ensure that the proposed action, in conjunction with other projects in the vicinity of Camp Lejeune, would not result in cumulative impacts to land use and coastal zone management.

5.2.2 Socioeconomics

The influx of personnel associated with the new regiment at Wallace Creek, in addition to the influx of personnel associated with MARSOC and Force Structure Review Group Initiatives, FY 2005, would not result in cumulative adverse impacts to socioeconomics. Impacts associated with employment and income would result in benefits to the regional economy. The proposed action would not be fully implemented until 2010, reducing the intensity of population growth. The cumulative impacts associated with the proposed action (construction, operation, and maintenance of the Wallace Creek Regimental Area with an influx of 2,100 new personnel) in

conjunction with the past, present, and reasonably foreseeable future actions within Camp Lejeune are anticipated to be minor.

The proposed action would have no impacts to environmental justice. Other projects on Camp Lejeune would be subject to Executive Orders 12898 and 13045, which would ensure that the proposed action, in conjunction with other projects in the vicinity of Camp Lejeune, would have no cumulative impacts to minorities, low-income populations, or children.

5.2.3 Community Facilities and Services

The influx of personnel associated with the new regiment at Wallace Creek, in addition to the influx of personnel associated with MARSOC and Force Structure Review Group Initiatives, FY 2005, would result in minor adverse cumulative impacts to community facilities and services. The proposed action would not be fully implemented until 2010, reducing the intensity of population growth. Further, current initiatives and construction activities by the Onslow County Schools are increasing the capacity of the school district, particularly at the elementary school level. In addition, the Marine Corps is working with local school districts to identify ways to lessen potential impacts. The cumulative impacts associated with the proposed action (construction, operation, and maintenance of the Wallace Creek Regimental Area with an influx of 2,100 new personnel) in conjunction with the past, present, and reasonably foreseeable future actions within Camp Lejeune are anticipated to be minor.

5.2.4 Transportation and Traffic

The proposed Wallace Creek Regimental Area would cause an increase in traffic due to additional commuters. However, this increase in traffic is expected to result in a minor short-term impact because of the proposed additional roads and other roadway improvements. In addition, under a separate proposed project, security gate upgrades at Main Gate and Piney Green Gate and road improvements to Old Saw Mill Road and Piney Green Road will help reduce traffic congestion from additional commuters. The proposed project, in conjunction with other past, present, and reasonably foreseeable future projects, would result in minor cumulative impacts to transportation and traffic.

5.2.5 Air Quality

Air quality emissions from the proposed action could potentially be generated in conjunction with emissions from the projects discussed in Subchapter 5.1 during project operations and training. However, due to the mobile and intermittent nature of the proposed emission sources, project operational emissions would not produce substantial ambient impacts in a given locality.

As a result, air emissions from the proposed action, in conjunction with reasonably foreseeable future project emissions, would not exceed any ambient air quality standard and would result in minor cumulative air quality impacts.

5.2.6 Noise

The proposed action would have minor, short-term noise impacts. Other projects on MCB Camp Lejeune would be subject to existing federal regulations/guidelines and state, regional, and local policies and programs relating to noise exposure. Therefore, the proposed action, in conjunction with other projects in the vicinity of Camp Lejeune, would not result in cumulative noise impacts.

5.2.7 Infrastructure and Utilities

No adverse impacts to the supply or capacity of utilities would result from the operation of the proposed Wallace Creek Regimental Area. Camp Lejeune has the supply and capacity to accommodate the current demand for water, electricity, and natural gas, and the existing wastewater and solid waste generation, in addition to the demand created by the proposed action. The proposed action, in conjunction with other activities on Camp Lejeune, would have minor adverse cumulative impacts on the supply or capacity of utilities.

The proposed action, as well as other projects on Camp Lejeune, will be required to follow the Base's 2002 Stormwater Pollution Prevention Plan and the Standard Operating Procedure for the implementation of the Stormwater Management NPDES Phase II requirement. Therefore, the proposed action, in conjunction with other projects in the vicinity of Camp Lejeune, would result in minor adverse cumulative impacts to stormwater.

5.2.8 Cultural Resources

The proposed action would have no adverse impacts to cultural resources. Other projects on Camp Lejeune would be subject to NEPA and Section 106 of the NHPA. These requirements, coupled with continued implementation of the Integrated Cultural Resources Management Plan and Base Order 11000.19A would ensure that the proposed action, in conjunction with other activities on Camp Lejeune, would not result in cumulative impacts to cultural resources.

5.2.9 Natural Resources

The proposed action would result in minor adverse impacts to geology, topography, and soils. Minor impacts to existing topography would occur during clearing and grading of the Wallace Creek Regimental Area project area. Construction activities would have no direct impact on geological formations at Hadnot Point. During construction, soils at the site would be affected through clearing, grading, compaction, and potential erosion. With the implementation of measures identified in the Integrated Natural Resource Management Plan (INRMP) (January 2007) to limit erosion and sedimentation, and the resultant effects on aquatic communities, the proposed action in conjunction with other activities on Camp Lejeune, would have minor cumulative impacts on geology, topography, and soils.

Implementation of the proposed action would result in minor impacts to the quality or quantity of surface water or groundwater resources at MCB Camp Lejeune. The construction of the Wallace Creek Regimental Area would be designed to minimize any discharge of pollutants to marine, estuarine, or freshwater environments. Other activities and new projects on MCB Camp Lejeune are conducted in compliance with Clean Water Act requirements for stormwater controls and discharge permits. Implementation of measures identified in the INRMP would further ensure that the proposed action, in conjunction with other activities on MCB Camp Lejeune, would have minor adverse cumulative impacts on surface water and groundwater resources.

Where wetlands or floodplains occur near the proposed construction areas, the proposed project would be designed to avoid impacts to these features to the maximum extent practicable. If wetlands are to be impacted, the USMC would obtain the appropriate Section 404 wetland permit from the US Army Corps of Engineers (nationwide or individual permit depending on the quantity of wetlands affected) prior to construction, and would implement mitigation as required by wetland permit conditions. The proposed action, in conjunction with other activities on Camp Lejeune, would have minor adverse cumulative impacts on wetlands or floodplains.

The forested portion of the proposed project area represents less than one percent of the Base's total forested land. Although land would be cleared to accommodate proposed facilities, the scale of land clearing in comparison to the extent of managed forests on-base is relatively small. The amount of remaining resources under forest protection, reforestation, and sustainable timber management under Camp Lejeune's Forestry Management Program would remain substantial. Implementation of measures identified in the INRMP would further ensure that the proposed action, in conjunction with other activities on MCB Camp Lejeune, would have minor cumulative impacts on vegetation.

The proposed action would not have impacts on populations of migratory birds. There would be minor adverse impacts to wildlife in the immediate vicinity of the proposed action, but the stability of wildlife populations would not be affected. The proposed action would have no impact to threatened and endangered species as none of the listed species or their habitats are

known to occur within the proposed project area. Implementation of measures identified in the INRMP would further ensure that the proposed action, in conjunction with other activities on MCB Camp Lejeune, would have minor cumulative impacts on migratory birds, threatened and endangered species, or other wildlife.

5.2.10 Hazardous Materials and Waste

The proposed action would result in minor adverse impacts from hazardous materials, waste management, or existing contaminated sites. Remediation of contamination would be completed prior to construction activities where warranted. Usual BMPs would be employed in the handling, removal, and disposal of potentially hazardous substances. Furthermore, if necessary, MCB Camp Lejeune would obtain appropriate approvals from US Environmental Protection Agency and the North Carolina Department of Environmental and Natural Resources regarding proposed development at the project area.

The reasonably foreseeable creation of a new recreational skeet range would likely result in the long-term environmental degradation of the new site resulting from the deposition of lead from shot. However, with proper management, impacts to the site could be maintained at levels considered to be minor.

5.3 CONCLUSION

Implementation of the proposed action would result in minor adverse impacts to the environment. Any cumulative impacts from the proposed action, in conjunction with other past, present, and reasonably foreseeable future actions, would be expected to be minor.

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CRAIG TEN BRINK, WILDLIFE BIOLOGIST: Environmental Conservation Branch, Environmental Management Division, Installations and Environment Department, Marine Corps Base, Camp Lejeune, North Carolina.

JOHN TOWNSON, DIRECTOR: Environmental Management Division, Installations and Environment Department, Marine Corps Base, Camp Lejeune, North Carolina.

STEVEN WHITED, ENVIRONMENTAL CONTROL SPECIALIST: Head Water/Wastewater, Stormwater, Environmental Quality Branch, Environmental Management Division, Installations and Environment Department, Marine Corps Base, Camp Lejeune, North Carolina.

STATE HISTORIC PRESERVATION OFFICE

DAVID L.S. BROOK, ADMINISTRATOR: North Carolina Department of Cultural Resources, State Historic Preservation Office, Division of Historical Resources.

PETER SANDBECK, ADMINISTRATOR: North Carolina Department of Cultural Resources, State Historic Preservation Office, Division of Historical Resources.

STEPHEN RYNAS, CONSISTENCY PROGRAMS COORDINATOR: North Carolina Department of Environment and Natural Resources, Division of Coastal Management.

APPENDIX A
CULTURAL RESOURCE COORDINATION

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North Carolina Department of Cultural Resources
State Historic Preservation Office

David L. S. Brook, Administrator

Division of Historical Resources

Michael F. Easley, Governor
Lisbeth C. Evans, Secretary
Jeffrey J. Crow, Deputy Secretary
Office of Archives and History

June 18, 2004

Rick Richardson
Environmental Management Division
PSC Box 20004
US Marine Corps Base
Camp Lejeune, NC 28542-0004

Re: Site visit summary and *Historical Architectural Evaluations*, Camp Lejeune,
Onslow County

Dear Mr. Richardson: *Rick*

This letter is to summarize our April 29, 2004, visit with you at Camp Lejeune. We apologize for taking so long to prepare the summary, but several pressing matters arose during the interim and we were without the able assistance of our intern Erin Kane, who has become our "Camp Lejeune expert."

The purpose of the meeting on April 29th was for all of our staff members, who have review responsibilities for Camp Lejeune, to tour those areas of the base identified in the *Historic Architectural Evaluations: Marine Corps Base, Camp Lejeune (HAE)* and determine whether or not we concur with the property evaluations within the context of the World War II Mobilization. We were very fortunate to be able to visit all of the areas addressed in the *HAE*, and thank you and Tara for the excellent tour. Based on the tour, maps you provided for the tour, and the information contained in the *HAE*; we offer the following comments.

Individual Buildings Eligible for the National Register

- SHPO concurs that the following buildings are individually eligible for inclusion in the National Register:
 - Building H1, **Naval Hospital**
 - Building 1, **Post Headquarters**
 - Building 15, **Infirmary**
 - Building 16, **Protestant Chapel**
 - Building 17, **Catholic Chapel**
 - Building 19, **Base Theater**
 - Building 235, **Bus Station**

www.hpo.der.state.nc.us

	Location	Mailing Address	Telephone/Fax
ADMINISTRATION	507 N. Blount St, Raleigh, NC	4617 Mail Service Center, Raleigh, NC 27699-4617	(919) 733-4763 • 733-8653
RESTORATION	515 N. Blount St, Raleigh, NC	4617 Mail Service Center, Raleigh, NC 27699-4617	(919) 733-6547 • 715-4801
SURVEY & PLANNING	515 N. Blount St, Raleigh, NC	4617 Mail Service Center, Raleigh, NC 27699-4617	(919) 733-4763 • 715-4801

Historic Districts Eligible for the National Register

- SHPO concurs that the following districts are eligible for inclusion in the National Register as defined in *HAE* documentation:
 - **Assault Amphibian Base Historic District**
 - **Stone Bay Rifle Range Historic District**
 - **Parachute Training Historic District**

- SHPO feels that the following districts are eligible for inclusion in the National Register with the recommended changes to *HAE* documentation:
 - **Command Services Historic District and Regimental Area No. 3 Historic District** - SHPO recommends these areas be combined to form one contiguous historic district. A rough estimate of boundaries for the combined historic district begins at Bldg. 17 (Catholic Chapel) north boundary documented in *HAE* following south along McHugh Boulevard encompassing Bldg. 1 (Post Headquarters) and Bldg. 15 (Dispensary), and their respective northeast boundaries as documented in *HAE*. The boundary should continue northeast along Holcomb Boulevard to include the Power Plant and a portion of the adjacent industrial/warehouse complex to the northeast to form the eastern boundary. The southeast boundary should follow the southern border of the Parade Ground, encompassing Bldg. 16 (Protestant Chapel) with its southeast boundary as documented in *HAE*. From Bldg. 16 the boundary should then follow northwest along McHugh Boulevard to I Street, southwest along I Street to H Street, following the previously documented boundary for Regimental Area No. 3 Historic District along Julian C. Smith and encompassing Bldg. 2 (Division Headquarters) with boundaries documented in *HAE* as the southwest boundary and following G Street as previously documented. The boundary should then encompass Bldg. 235 (Bus Station) and its previously documented boundaries in *HAE*, then continue northwest along McHugh Boulevard encompassing Bldg. 236 (Training Pool) and Bldg. 19 (Base Theater), and their *HAE* documented boundaries bordered by C Street and D Street at the north and south, again returning to and traveling along McHugh Boulevard back to Bldg. 17 (Catholic Chapel). Exact boundaries encompassing the power plant and industrial area at the northeast boundary need to be determined upon further consultation.

The following buildings previously identified as **Command Services Historic District** are both individually eligible and are included as contributing buildings within the redrawn district:

- 1
- 15
- 16
- 17
- 19
- 235

The following buildings previously identified as contributing to **Regimental Area No. 3 Historic District**, along with contributing landscape features described in *HIAE*, are included as contributing features within the redrawn district:

- 2
- 300
- 302
- 302A
- 303
- 307
- 308
- 309
- 311
- 312
- 313
- 314
- 315
- 316
- 317
- 318
- 319
- 320
- 321
- 322
- 322A
- 323
- 324
- 325
- 326
- 327
- 328
- 333
- 334
- 339
- 340
- 341
- 342
- 343
- 344

The following buildings and features previously identified as non-contributing should be identified as contributing within the redrawn district, in addition to buildings associated with the power plant and industrial complex at the northeast boundary to be identified upon further evaluation:

- 20
- 55
- Parade Ground
- 209
- 782?
- 42

The following buildings will remain non-contributing within the new district boundaries:

- 14
- 14A
- 16A
- HP3
01
- HP
302
- HP
306
- HP
307
- HP
30

The following buildings previously identified as contributing to the **Regimental Area No. 3 Historic District** should be removed from the boundaries of the redrawn district:

- 331
- 332

The layout, open spaces, and landscape features, as well as the buildings and their architectural considerations, are important to the national significance of MCB Camp Lejeune as an historic military landscape and should be considered contributing elements to the district.

- **Montford Point Camp No. 1 Historic District** - SHPO concurs with the district's western and southern boundaries, but feels the northern and eastern boundaries should

be redrawn. Buildings at the northeast corner of the currently identified historic district appear to be eligible as buildings contributing to Montford Point Camp No. 1 Historic District

SHPO identified the following buildings as potentially eligible for inclusion in the National Register within Montford Point camp No. 1 Historic District: at MCB Camp Lejeune and requests additional documentation for these and additional buildings located to the north and east of these that cannot be seen on maps provided to SHPO:

- M401-M424
 - M603
 - M604
- **Montford Point Camps No. 2 and 2A Historic District** - SHPO recommends the following buildings be excluded from the district due to the repetitive nature of these buildings that can be found elsewhere at MCB Camp Lejeune:
 - M203
 - M255

SHPO concurs with the current boundaries as documented in *HAE*, with the above exclusions. However, in prior discussions MCB Camp Lejeune has proposed demolition of several buildings from this historic district in conjunction with the construction of a new consolidated classroom building within Montford Camp No. 1 Historic District buildings. To maintain the historic setting and continuity of the military landscape at **Montford Point Camps No. 2 and 2A Historic District** as a district eligible for inclusion in the National Register, SHPO is willing to delete the following buildings from the proposed district.

- M208
- M209
- M210
- M220
- M221
- M222
- M223
- M224
- M225
- M226
- M227
- M228
- M229

Additionally, during the site visit we noted overhead steam heating systems were not included as a character-defining element in the districts. Elements such as these contribute to the overall historic nature of these districts, and should be included in documentation as such.

- **Naval Hospital** - Building H1 as identified in *HAE* documentation is individually eligible for the National Register. Additionally, SHPO feels the following buildings, historically known as "Surgeon's Row," appear eligible for inclusion in the National Register and should be included with the Naval Hospital to form a historic district:
 - H25
 - H26
 - H27
 - H35
 - H41
 - H42

SHPO requests additional information for the following buildings as they are potentially eligible for inclusion in the National Register as part of the Naval Hospital/Surgeon's Row district:

- H49 - H69
- **Training Pool Historic Buildings** - SHPO recommends the following building be a contributing building within the new district formed from **Command Services Historic District and Regimental Area #3 Historic District**:
 - 236

Properties Not Eligible for the National Register

- SHPO feels the following buildings previously identified as eligible for inclusion in the National Register are not eligible due to loss of integrity:
 - **BB28, Barrage Balloon Classroom Historic Building**
 - **540, Training Pool**

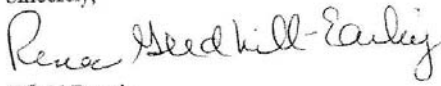
We are continuing our review of the Draft Programmatic Agreement and *Guidelines for Historic Buildings Management* submitted by MCB Camp Lejeune. The Draft PA refers to Appendices A, B, and C, but does not specifically name these. From the PA text and past correspondence, we gather Appendix B refers to the *HAE* and Appendix C is the *Guidelines for Historic Buildings Management* document. We would like to clarify the make-up of Appendices A, B, and C. Additionally, we are unable to locate a copy of Camp Lejeune's Integrated Cultural Resources Management Plan (ICRMP), which is referenced in the Executive Summary section of the *Guidelines*. Comments on the PA are forthcoming.

We would like to schedule a follow-up site visit during the week of July 12-16 to evaluate the potential boundary changes outlined above and discuss how we might assist Camp Lejeune in revising the *HAE*.

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,


David Brook

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UNITED STATES MARINE CORPS

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

IN REPLY REFER TO:
5090.8

BEMD

APR 09 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: ARCHAEOLOGICAL EVALUATION OF SIX SITES AT MARINE CORPS
BASE, CAMP LEJEUNE, AND ONE SITE AT MARINE CORPS AIR STATION,
NEW RIVER, ONSLOW COUNTY, NORTH CAROLINA

Dear Mr. Sandbeck:

Please find enclosed (enclosure 1) two copies of the draft report "Archaeological Evaluation of Six Sites at Marine Corps Base, Camp Lejeune, and One Site at Marine Corps Air Station, New River, Onslow County, North Carolina", prepared by Southeastern Archaeological Research (SEARCH), Inc., a consultant for Marine Corps Base, Camp Lejeune (MCBCL). This report details the results of Phase II National Register of Historic Places (NRHP) evaluation of archaeological sites 31ON631, 31ON1057, 31ON1059, 31ON1061, 31ON1077, 31ON1132, and 31ON1367. Enclosure 2 details the general location of the sites evaluated and proposed future construction that may impact them. Three of the seven sites may be directly impacted from proposed construction of a new four-battalion regimental complex in the Wallace Creek area of MCBCL, including one that would be impacted by cleanup of an existing skeet range (enclosure 3). Enclosure 4 details the location of contributing Buildings PT-4, PT-5 and PT-6 within the NRHP eligible discontinuous Parachute Training Historic District located in the proposed Wallace Creek Regimental Complex area of potential effect (APE). One site overlooking Wallace Creek may be impacted by construction of a proposed sewer line and associated staging area (enclosure 5); and, one archaeological site (enclosure 6) would be impacted by proposed construction of new Bachelor Enlisted Quarters (BEQ) at Marine Corps Air Station, New River (MCASNR).

The proposed Wallace Creek Regimental Complex APE encompasses approximately 551 acres (enclosure 3). The proposed action is to construct, operate and maintain a four-battalion regimental complex to accommodate the influx of approximately 2,100 personnel to MCBCL. The proposed facilities and infrastructure at the Wallace Creek Regimental Complex would fully support the operational and training

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mission of the four infantry battalions and Regimental Headquarters. All high probability soils within the Wallace Creek Regimental Complex APE have been previously surveyed (TRC FY 2002 Survey; Richardson 4th MEB 2003 Survey-SHPO letter dated July 18, 2005, ER04-0110; and Mathis MWR Road/Birch Street Extension project- SHPO letter dated October 28, 1998, ER99-7376). Three sites recorded during the TRC FY 2002 survey (31ON1059, 31ON1077, 31ON1132) lie within the Wallace Creek Regimental Complex APE (enclosure 3). Two of these would be directly impacted by construction of new facilities, and the third would be impacted during cleanup and relocation of the existing skeet range within the APE. As detailed in the enclosed draft report, sites 31ON1059, 31ON1077, and 31ON1132, are recommended not eligible for the NRHP based on SEARCH's investigation.

In addition to the three archaeological sites discussed above, Building PT-6, a NRHP eligible contributing building to the discontinuous Parachute Training Historic District, is located within the APE and adjacent to proposed building and parking construction (enclosure 4). The initial design for the Regimental Complex would have required the demolition of Building PT-6. However, re-design efforts were implemented to minimize the impact of new construction to this building and to the Parachute Training Historic District. Building PT-6 will now be maintained in its current condition. The remaining two buildings associated with the historic district (PT-4 and PT-5) are also located within the APE, but at some distance from the proposed construction area for the Regimental Complex, and would not be impacted by the undertaking. No direct impacts would occur to the Parachute Training Historic District or any NRHP eligible archaeological sites as a result of the proposed construction of the Wallace Creek Regimental Complex.

Archaeological sites 31ON631, 31ON1057, and 31ON1061 are located north and outside of the Wallace Creek Regimental Complex APE across Bearhead Creek from the proposed complex (enclosure 5). These three sites would not be impacted by the Regimental Complex construction. However, future proposed wastewater system upgrades would potentially impact archaeological site 31ON631. The proposed wastewater treatment modifications and upgrades are in the early planning stage, but disturbance of site 31ON631 is anticipated due to construction staging required for sewer line improvements (see enclosure 5). We will coordinate the remaining portion of the wastewater system upgrades with your office when complete plans become available. No known impacts to archaeological sites 31ON1057 and 31ON1061 are anticipated at this time. However, a proposed road

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for future development may be required in the area of the two sites. Plans for the road have not yet been developed, and will be coordinated with your office once completed at a sufficient level to conduct environmental analysis.

All high probability soils in the area of sites 31ON631, 31ON1057, and 31ON1061 have been surveyed (Goodwin and Associates, Inc., 1993 Wastewater Treatment Upgrade; Environmental Services, Inc., 1997 Natural Gas Pipeline; and TRC FY 2002 Silvicultural Prescription). Results from the current SEARCH investigation indicate that sites 31ON631 (recorded by Environmental Services, Inc.), 31ON1057 and 31ON1061 (recorded by TRC) lack sufficient integrity and research potential to be considered eligible for listing in the NRHP. Thus, future impacts resulting from proposed sewer upgrades and possible road construction would not impact any NRHP eligible historic properties.

Enclosure 6 details the location of archaeological site 31ON1367 at MCASNR. All high probability soils in the vicinity of this site have been previously surveyed (TRC FY 2005). Marine Corps Air Station, New River (MCASNR) proposes to construct new Bachelor Enlisted Quarters (BEQs) south of Douglas Road. The purpose and need for the proposed BEQ construction is driven by the deficiency of adequate housing for enlisted personnel. The area of potential effect (APE) for BEQ construction encompasses approximately 16 acres of forest land. Construction of the BEQs would impact archaeological site 31ON1367, which was recorded by TRC during the FY 2005 Silvicultural Prescription Survey. Results from the current investigation detailed in the enclosed draft report indicate that this site lacks sufficient integrity and research potential to be considered eligible for listing in the NRHP. Based on the results of SEARCH's investigation and previous surveys, no historic properties would be affected by the proposed BEQ construction.

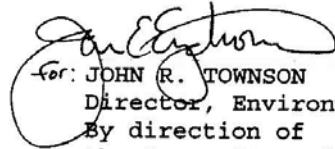
We have reviewed and concur with the recommendations provided in enclosure 1, and request your review and comments, or concurrence by April 30, 2008. Based on the results of the archaeological evaluation of seven sites by SEARCH, Inc., we have determined that no NRHP eligible archaeological sites will be affected by proposed construction of the Wallace Creek Regimental Complex, proposed sewer improvements at Wallace Creek, and proposed BEQ construction at MCASNR. In addition, the construction of the proposed Wallace Creek

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Regimental Complex would have no effect on the discontinuous Parachute Training Historic District.

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,



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

Enclosures:

1. Two Copies of Draft Report "Archaeological Evaluation of Six Sites at Marine Corps Base, Camp Lejeune, and One Site at Marine Corps Air Station, New River, Onslow County, North Carolina."
2. Project Locations.
3. Proposed Wallace Creek Regimental Complex and Cultural Resource Locations within the Proposed Area of Potential Effect.
4. Parachute Training Historic District within Proposed Wallace Creek Regimental Complex.
5. Proposed Sewer Upgrades and Location of Archaeological Sites in the Vicinity.
6. Proposed Location of BEQ Construction and Archaeological Site 31ON1367 at MCASNR.

	Post-It® Fax Note	7671	Date	5/5	# of pages	1
	To	Rick Richards	From	SHPO		
	Co./Dept.		Co.			
	Phone #		Phone #	919-807-6579		
	Fax #	910-451-1787	Fax #			

North Carolina Department of Cultural Resources
State Historic Preservation Office

Peter B. Sandbeck, Administrator

Michael F. Easley, Governor
 Eithen C. Evans, Secretary
 Jeffrey J. Crow, Deputy Secretary

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

April 28, 2008

John R. Townson, Director
 Environmental Management
 USMC Base Camp Lejeune
 PSC Box 2004
 Camp Lejeune, NC 28542-0004

Re: Archaeological Evaluation of Six (6) Sites at Marine Corps Base, Camp Lejeune, and One (1) Site at Marine Corps Air Station, New River, Onslow County, ER 08-0985

Dear Mr. Townson:

Thank you for your letter of April 9, 2008. We have reviewed the testing report and offer the following comments.

The report provides details regarding Phase II archaeological testing of sites 31ON631, 31ON1057, 31ON1059, 31ON1061, 31ON1077, 31ON1132, and 31ON1367. This work was undertaken by SEARCH, Inc. to determine the eligibility of the sites for listing on the National Register of Historic Places (NRHP). Based on the results of the work, all of the sites were recommended as ineligible for the NRHP. No further work was recommended for these sites. We concur with these recommendations.

The report meets our office's guidelines and those of the Secretary of the Interior. There are no specific concerns or corrections which need to be addressed in this regard. The present version of the document can stand as the final report 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 Gladhill-Earley, environmental review coordinator, at 919-807-6579. In all future communication concerning this project, please cite the above-referenced tracking number.

Sincerely,



Peter Sandbeck

cc: Bryan Farrell, Southeastern Archaeological Research, Inc.

bc: Claggett/Abbott
 County

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APPENDIX B
MIGRATORY BIRD INVENTORY

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No.	Species, Status, Family	Habitat
45	BLACK VULTURE (<i>Coragyps atratus</i>) Status: NCWRC-SC Family: Cathartidae	Open country, dumps, and urban areas.
48	BALD EAGLE (<i>Haliaeetus leucocephalus</i>) Status: Camp Lejeune's INRMP-T, NCWRC-T Family: Accipitridae	Breeds in forested areas near large bodies of water. Winters in coastal areas, along large rivers, and large unfrozen lakes.
49	AM. SWAL. T. KITE (<i>Elanoides forficatus</i>) Status: BCC, PIF Family: Accipitridae	Forested regions near marshes or swamps, often bottomland, or riverine forest, also open pine woodland.
51	AMERICAN KESTREL (<i>Falco sparverius</i>) Status: BCC, PIF Family: Falconidae	Breeds in a variety of open habitats, including meadows, grasslands, deserts, parkland, agricultural fields, urban and suburban areas.
53	COOPERS HAWK (<i>Accipiter cooperii</i>) Status: NCWRC-SC Family: Accipitridae	Breeds in deciduous, mixed, coniferous forests and open woodland. Becoming more common in suburban and urban areas.
77	LOGGERHEAD SHRIKE (<i>Lanius ludovicianus</i>) Status: NCWRC-SC Family: Laniidae	Open country with some shrubs and trees.
92	BROWN-HD.NTHTCH (<i>Sitta pusilla</i>) Status: BCC, PIF Family: Sittidae	Pine forests, especially in open, mature forests with periodic fires.
94	BROWN CREEPER (<i>Certhia americana</i>) Status: NCWRC-SC Family: Certhiidae	Coniferous and mixed coniferous-deciduous forests.
104	WOOD THRUSH (<i>Hylocichla mustelina</i>) Status: BCC, PIF Family: Turdidae	Breeds in the interior and edges of deciduous and mixed forests, in rural to urban areas, generally in cool, moist sites, often near water.
116	NORTH. PARULA W. (<i>Parula americana</i>) Status: BCC, PIF Family: Parulidae	Deciduous and coniferous forests, usually near water.
123	PRAIRIE WARBLER (<i>Dendroica discolor</i>) Status: BCC, PIF Family: Parulidae	Various shrubby habitats, including regenerating forests, dry brushy areas, open fields, old fields, young pine plantations, mangrove swamps, and Christmas-tree farms. Florida residents live in mangrove forests.
127	WORM-EATING WARB. (<i>Helmitheros vermivorum</i>) Status: PIF Family: Parulidae	Breeds in mature deciduous or mixed deciduous-coniferous forest with patches of dense understory, usually on steep hillside. Winters in tropical forests.

No.	Species, Status, Family	Habitat
129	SWAINSON'S WARB. (<i>Limnothlypis swainsonii</i>) Status: BCC, PIF Family: Parulidae	Breeds in swamps and southern forests with thick undergrowth, especially canebrakes and floodplain forests in lowlands and rhododendron-mountain laurel in Appalachians. Winters in tropical scrub, evergreen, and gallery forests.
152	LAUGHING GULL (<i>Larus atricilla</i>) Status: NAWCP Family: Laridae	Nests in marshes, on beaches, and on islands along coast. Found along coasts, in estuaries, bays, and inland lakes. Feeds along the ocean, on rivers, at landfills, and in urban parks.
154	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.
155	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.
175	CHUK-WIL'S-WIDOW (<i>Caprimulgus carolinensis</i>) Status: BCC Family: Caprimulgidae	Along edges of coniferous or mixed forests; often along rivers.
184	RED-COCKAD.WOOD (<i>Picoides borealis</i>) Status: NCWRC-E, PIF Family: Picidae	Open pine forest maintained by frequent fires, especially longleaf pine forests.
186	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.
191	HOODED WARBLER (<i>Wilsonia citrina</i>) Status: PIF Family: Parulidae	Dense shrubbery in mature deciduous woodlands, especially near streams.
199	PAINTED BUNTING (<i>Passerina ciris</i>) Status: BCC, PIF Family: Cardinalidae	Open brushlands, thickets, and scattered woodlands. Along Atlantic coast, also in hedges and yards.
201	BACHMAN'S SPAR. (<i>Aimophila aestivalis</i>) Status: NCWRC--SC and FSC; BCC, PIF Family: Emberizidae	Open pine or oak woods, brushy fields. Found primarily in open pine woods with understory of wiregrass, palmettos, and weeds, and in oak-palmetto scrub, grasslands.
221	ORCHARD ORIOLE (<i>Icterus spurius</i>) Status: BCC Family: Icteridae	Nests in gardens, orchards, open woods, wetlands, suburban areas, parks, along streams and lakes, and in large planted trees near houses. In winter found in tropical forests.

APPENDIX C
COASTAL CONSISTENCY DETERMINATION

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UNITED STATES MARINE CORPS

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

IN REPLY REFER TO:
5090.11.2
BEMD
MAY 01 2008

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

Dear Mr. Rynas:

The United States Marine Corps proposes to construct, operate, and maintain a four-battalion regimental complex in the Wallace Creek area of Marine Corps Base, Camp Lejeune to accommodate the influx of approximately 2,100 personnel.

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

A Coastal Consistency Determination is enclosed for your review. MCB Camp Lejeune requests that the Division of Coastal Management concur with this consistency determination.

If you have any questions or require additional information please contact Mr. Martin Korenek, Environmental Conservation Branch, (910) 451-7235 or martin.korenek@usmc.mil

Sincerely,

A handwritten signature in black ink that reads "John R. Townson".

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

Enclosure: 1. Coastal Consistency Determination for MCB Camp Lejeune, Wallace Creek Regimental Area

**FEDERAL COASTAL CONSISTENCY DETERMINATION FOR
WALLACE CREEK REGIMENTAL AREA
MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA**

April 2008

The United States Marine Corps has determined that implementing the proposed action is consistent to the maximum extent practicable with the enforceable policies of North Carolina's approved Coastal Management Program.

1.0 FEDERAL AGENCY ACTION

The United States Marine Corps proposes to construct, operate, and maintain a four-battalion regimental complex in the Wallace Creek area of Marine Corps Base (MCB) Camp Lejeune, Onslow County, to accommodate the influx of approximately 2,100 personnel (Figure 1, Location of Wallace Creek Regimental Area). The project area for the Wallace Creek Regimental Area is approximately 223 hectares (ha) (551 acres [ac]).

The proposed facilities and infrastructure are intended 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. The combined size of the proposed facilities would be approximately 177,421 square meters (sq m) (1,909,744 square feet [sq ft]). New parking lots would cover approximately 24 ha (59 ac). Proposed roads would be roughly 7 kilometers (km) (4 miles [mi]) in length. Approximately 1.3 km (0.8 mi) of Birch Street would be widened. An existing pesticide storage facility and associated structures along with the military working dog kennels would need to be demolished to make room for the new construction projects. Lastly, an existing skeet range in the Wallace Creek area would be closed. To date, the site selection process is in the early stages for identifying new locations for the military working dog kennels and the skeet range.

The purpose and need for this proposed action is to sustain the ability of the Marine Corps to meet the military and defense posture and challenges of the current era. Marine Corps forces are currently engaged in Operation Iraqi Freedom and Operation Enduring Freedom in Afghanistan. In order for the Marine Corps to continue to defend the world from grave danger of terrorism, they must be adequately and effectively trained to be mission-ready to meet all operational needs. The proposed influx of personnel would provide combatant commanders with the capabilities needed in these operations.

Current plans call for two existing infantry battalions to be co-located with the two new infantry battalions under the operational control of a Regimental Command. Consolidating battalion functions within a Regimental Area would not only accommodate the mission and training requirements for the two new battalions and the two existing battalions, but it would let each battalion have its command post closer to their barracks, allowing for better management of Marines.

This consistency determination assesses the proposed action for its applicability and consistency with the North Carolina Coastal Area Management Act and the Onslow County Land Use Plan. The information contained in this consistency determination is derived primarily from the Draft Environmental Assessment for the Wallace Creek Regimental Area, Marine Corps Base Camp Lejeune, Onslow County, North Carolina. Additional information regarding the proposed project can be found in the Draft Environmental Assessment, which is incorporated herein by reference.

2.0 NORTH CAROLINA COASTAL AREA MANAGEMENT ACT

In 1972, Congress passed the Coastal Zone Management Act, which encouraged states to keep the coasts healthy by establishing programs to manage, protect and promote the country's fragile coastal resources. Two years later, the North Carolina General Assembly passed the Coastal Area Management Act (CAMA). 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 three nautical mile 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 projects located outside of an AEC but with the potential to affect coastal resources. Both of these are explained in more detail below.

2.1 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
- 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

The following is an analysis of the applicability of the CAMA AEC policies to the proposed project and the project's consistency with those policies, when applicable. Figure 2 shows the location of the proposed action relative to the AECs in the project vicinity. The project is not located within an AEC.

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

The Wallace Creek project area includes three types of wetlands: estuarine, riverine, and palustrine. The majority of wetlands in the project area are palustrine forested wetlands along the floodplain of Wallace Creek and in association with stream tributaries of Bearhead Creek and Beaverdam Creek. Estuarine wetlands are found in proximity to Wallace Creek, while riverine wetlands are in the upper reaches of Beaverdam Creek. Under the proposed action, estuarine wetlands would be avoided, and mitigation for palustrine wetlands would be implemented as required by wetland permit requirements.

The proposed action would impact 0.09 ha (0.22 ac) of wetlands. As stated under 15A NCAC 7M .0700, MCB Camp Lejeune would obtain the necessary permits prior to construction and would implement mitigations as required by the permit conditions. Wetland and stream impacts would be limited to a road crossing and the intent is to design the crossing to meet conditions of Nationwide Permit 14, not to exceed 0.2 ha (0.5 ac) of wetland fill and 45.7 linear meters (150 linear feet) of stream impact. MCB Camp Lejeune has not developed the specific design and mitigation plan. However, land within the project area 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 Department of Defense lands (including the Greater Sandy Run Wetland Mitigation Bank on Camp Lejeune) and lands of other entities would be considered for mitigation purposes when consistent with the US Environmental Protection Agency, US Army Corps of Engineer, North Carolina Division of Water Quality guidelines, and/or permit provisions.

The upper reaches of Wallace Creek, Bearhead Creek, Beaverdam Creek and their tributaries are inland waters. The lower reaches of Wallace Creek are estuarine (Figure 2). 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. Therefore, these policies are not applicable to the proposed action.

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

The project area for the proposed action is not within an ocean hazard area. Therefore, policies on ocean hazard areas are not applicable.

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

The construction of the proposed facilities would not affect areas where there are small surface water supply watersheds or public water supply well fields. Therefore, policies protecting public water supplies are not applicable.

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

15A NCAC 07H.0505 (Coastal Areas That Sustain Remnant Species). There are no federally-listed threatened or endangered species that are located within the project area. However, the proposed project would require the clearing of approximately 64 ha (158 ac) of mixed pine-hardwood forest. This policy is not applicable.

15A NCAC 07H.0506 (Coastal Complex Natural Areas). Camp Lejeune has two designated natural areas: the CF Russell Longleaf Pine Natural Area and the Wallace Creek Natural Area. Both have been designated and registered as natural areas by the North Carolina Natural Heritage Program. However, both are located well beyond the project limits of the project area. This policy is not applicable.

15A NCAC 07H.0507 (Unique Coastal Geologic Formations). No unique geological formations are located within the proposed project area. This policy is not applicable.

15A NCAC 07H.0508 (Use Standards). There are no fragile coastal natural or cultural resources within the project area. Implementing the proposed action would not cause irreversible damage to natural systems or cultural resources, scientific, educational, or associative values, or aesthetic qualities. This policy is not applicable.

15A NCAC 07H.0509 (Significant Coastal Archaeological Resources). Three potentially eligible archaeological sites were identified within the boundaries of the proposed project area: 31ON1059, 31ON1077, and 31ON1132. These areas were discussed at the project kickoff meeting held at MCB Camp Lejeune on Thursday, 08 March 2007. Phase II field survey and evaluation of these sites was completed in November 2007. Preliminary results of the survey indicate that all three sites do not meet the National Register of Historic Places criteria for eligibility. MCB Camp Lejeune has requested concurrence that implementation of the proposed action would not affect any National Register of Historic Places-eligible archaeological sites. This policy is not applicable.

15A NCAC 07H.0510 (Significant Coastal Historic Architectural Resources). The Parachute Training Historic District and its three contributing resources, PT-4, PT-5, and PT-6, would all remain intact and protected by a 15.2 m (50 ft) buffer. The project is consistent with this policy.

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

2.2 GENERAL POLICY GUIDELINES

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

- Shoreline erosion policies
- Shorefront access policies
- Coastal energy policies
- Post-disaster policies
- Floating structure policies
- Mitigation 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.

The following is an analysis of the applicability of the General Policy Guidelines to the proposed project and the project's consistency with those policies, when applicable.

15A NCAC 07M.0200 (Shoreline Erosion Policies)

No ocean or estuarine shorelines are included in the project area for the proposed action, so these policies are not applicable (please refer to Figure 2).

15A NCAC 07M.0300 (Shorefront Access Policies)

Due to extensive daily military training, Camp Lejeune is a closed military installation. Historically, the public has not had beach access or uncontrolled water access (boat launches). The project would not change any existing public access to or use of the shorefront or water. Therefore, these policies are not applicable.

15A NCAC 07M.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.

15A NCAC 07M.0500 (Post-Disaster Policies)

These policies require that all state agencies prepare for disasters and coordinate their activities in the event of a coastal disaster. MCB, Camp Lejeune, Base Order P3440.6E, Destructive Weather, addresses how Camp Lejeune would prepare for potential disasters and would respond in the event of a disaster, including coordination with North Carolina emergency services. The proposed action is consistent with these policies.

15A NCAC 07M.0600 (Floating Structure Policies)

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

15A NCAC 07M.0700 (Mitigation Policy)

North Carolina's mitigation policy states that "Coastal ecosystems shall be protected and maintained as complete and functional systems by mitigating the adverse impacts of development as much as feasible, by enhancing, creating, or restoring areas with the goal of improving or maintaining ecosystem function and areal proportion." Impacts would 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 forest habitat and wildlife losses due to development of this site. The loss of upland forest habitat on this site is recognized as a locally important impact. However, in an ecosystem context, Camp Lejeune is actively working to maintain complete and functional ecosystems within the state's coastal zone. Camp Lejeune's participation with the state of North Carolina, and other conservation partners in a long-term encroachment partnering strategy has resulted in preservation of 1,546 ha (3,820 ac) of coastal lands identified by state, federal, and non-governmental partners as having significant or unique natural resources. The Marine Corps has contributed over \$10 million dollars to restrict development and conserve wildlife habitat on large land tracts adjacent to and in the vicinity of Camp Lejeune in support of regional conservation initiatives.

Based on the conceptual plan for the layout of regimental facilities at Wallace Creek, the proposed action has the potential to adversely impact jurisdictional wetlands and waters of the US at MCB Camp Lejeune. The proposed action would impact approximately 0.09 ha (0.22 ac) of jurisdictional wetlands in the Wallace Creek Regimental Area. Other wetlands are present along the site boundary. 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.

The proposed project would be designed to avoid impacts to wetlands and waters of the US. 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 Department of Defense lands (including the Greater Sandy Run Wetland Mitigation Bank on Camp Lejeune) and lands of other entities would be considered for mitigation purposes when consistent with the US

Environmental Protection Agency, US Army Corps of Engineer, 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. These permits would include the Clean Water Act, Section 404 wetland permit from the US Army Corps of Engineers (Nationwide or Individual Permit depending on the quantity of wetlands and waters of the US affected) and the Clean Water Act, Section 401 Water Quality Certification from the North Carolina Department of Environment and Natural Resources, Division of Water Quality.

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.

MCB, Camp Lejeune, Base Order P5090.2A, Chapter 11, requires the use of native plants in landscaping. Native plant species would be used for landscaping to the extent practicable. No non-native, invasive vegetation would be used in any temporary or permanent landscaping.

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 on-site construction supervisor 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.

Other permits and approvals for the proposed action include:

- Erosion and Sedimentation Control Plan approval by North Carolina Department of the Environment and Natural Resources, Division of Land Resources, Land Quality Section
- Stormwater Management Permit from the North Carolina Department of Environment and Natural Resources, Division of Water Quality
- Non-Discharge Sewer Extension Permit from the North Carolina Department of Environment and Natural Resources, Division of Water Quality, Non-Discharge Branch
- Water Connection Permit from the North Carolina Department of Environment and Natural Resources, Public Water Supply Section
- Clean Air Act, Title V Construction and Operation Permit from the North Carolina Department of Environment and Natural Resources, Division of Air Quality
- Concurrence from the North Carolina State Historic Preservation Officer (NC SHPO) on cultural resources effects findings

The proposed action would be consistent with this policy.

15A NCAC 07M.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 State-approved sedimentation/erosion and control plans and stormwater permits. These permits are issued by the NCDENR and reflect the most up-to-date requirements outlined in the State's Best Management Manual. In addition, since MCB Camp Lejeune is located in Onslow County which is considered a Phase II Coastal County, the Base must follow the requirements that are found in stormwater requirements 15A NCAC 02H.1005.

MCB Camp Lejeune is currently covered under a Phase I NPDES stormwater permit. This permit required the Base to develop and implement a Stormwater Pollution Prevention Plan which recommends measures to minimize pollutants from entering stormwater runoff from Base industrial activities.

Under the NPDES 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 and landscaping in select areas. This vegetation would aid in the control of stormwater runoff and to assure effective and continuous control of erosion and pollution.

As a result, the proposed action is not expected to impair coastal water quality. The project would not be located in primary or secondary nursery areas (refer to Figure 2). Implementation of the proposed action would be consistent with coastal water quality policies.

15A NCAC 07M.0900 (Policies on Use of Coastal Airspace)

The proposed action does not involve the use of coastal airspace, so these policies are not applicable.

15A NCAC 07M.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 so these policies are not applicable.

15A NCAC 07M.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, so these policies are not applicable.

15A NCAC 07M.1200 (Policies on Ocean Mining)

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

3.0 ONSLOW COUNTY COASTAL MANAGEMENT POLICIES

The CAMA required local governments in each of the 20 coastal counties in the state to prepare, 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*.

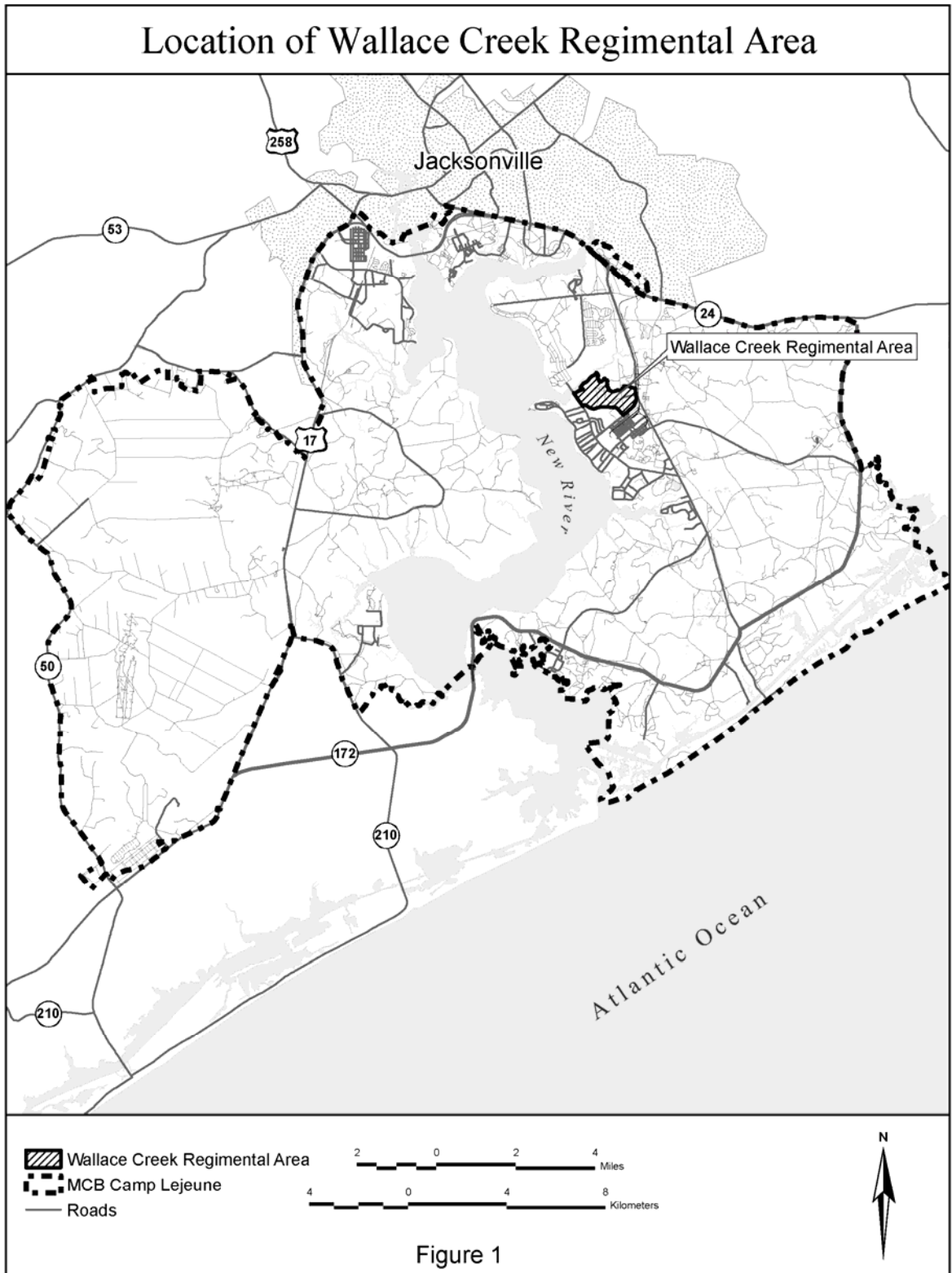
Onslow County adopted its Land Use plan in conformity with the CAMA in 2000, and is currently updating the plan. The county has zoning controls applicable to only one special area, Golden Acres in Stump Sound Township. The county does, however, require review of subdivisions, providing for minimum standards, enforced by the county Planning Department. Incorporated areas within the county implement their own zoning regulations. Onslow County's *Citizen's Comprehensive Plan for Onslow County*, adopted in 2003, also addresses land use planning in relation to the Coastal Area Management Act. Table 1 contains a list of Onslow County's comprehensive plan policies and their applicability to this project.

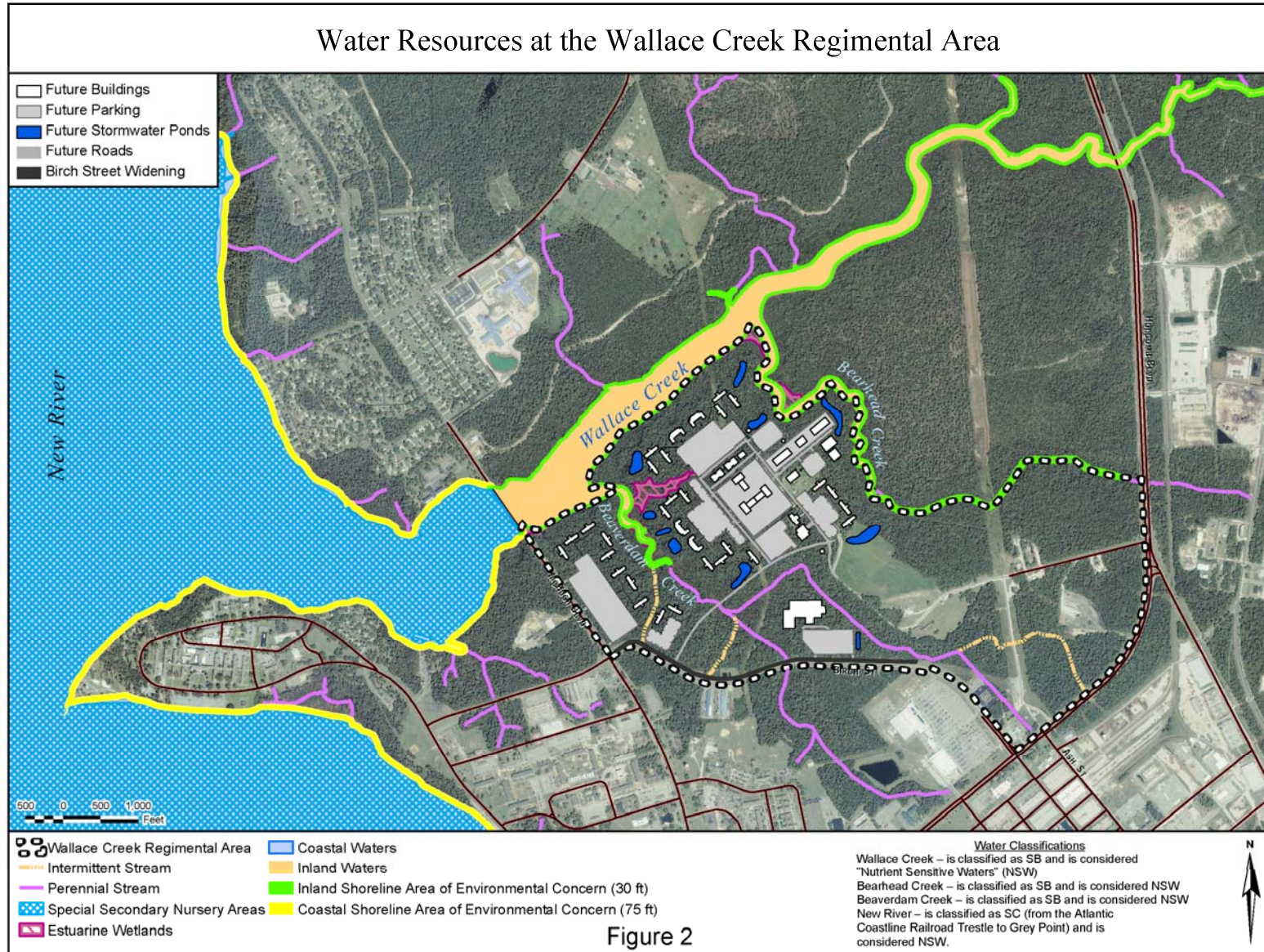
Table 1
Onslow County Comprehensive Plan Policies

Land Use and Development Policies	Applicability
Preferred Development Pattern	Not Applicable
Housing and Neighborhood Development	Not Applicable
Commercial and Office Development	Not Applicable
Industrial Development	Not Applicable
Agricultural and Rural Area Preservation	Not Applicable
Waterfront and Waterborne Development	Not Applicable
Infrastructure and Service Policies	Applicability
Transportation	Consistent
Water and Sewer Services	Consistent
Stormwater Management, Drainage and Flooding	Consistent
Solid Waste Management	Consistent
Natural Resources Management and Use Policies	Applicability
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
Economy and Culture Policies	Applicability
Economic Development	Not Applicable
The Military and the Community	Consistent
Educational Facilities	Consistent
Parks and Recreation Facilities	Not Applicable
Cultural History, Historic Preservation/Revitalization	Not Applicable
Community Appearance	Not Applicable

4.0 CONCLUSION

In conclusion, after careful consideration of the proposed action, the 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.







North Carolina Department of Environment and Natural Resources
Division of Coastal Management

Michael F. Easley, Governor

James H. Gregson, Director

William G. Ross Jr., Secretary

June 23, 2008

John R. Townson
Director, Environmental Management
Marine Corps Base
PSC Box 2004
Camp Lejeune, NC 28542-0004

SUBJECT: CD08-036 – Consistency Concurrence for the Proposed Establishment of a Regimental Complex at Wallace Creek, Camp Lejeune, Onslow County (DCM#20080065)

Dear Mr. Townson:

We received your Consistency Determination on May 15, 2008 for the proposed establishment of a regimental complex at Wallace Creek, at Camp Lejeune in Onslow County, North Carolina. Camp Lejeune proposes to construct, operate, and maintain a four battalion regimental complex, which includes operational facilities, maintenance facilities, support facilities, housing, roads, and other related infrastructure. Approximately 2,100 personnel will be assigned to this area. The project area for the Wallace Creek Regimental Area is approximately 551 acres in size.

North Carolina's coastal zone management program consists of, but is not limited to, the Coastal Area Management Act, the State's Dredge and Fill Law, Chapter 7 of Title 15A of North Carolina's Administrative Code, and the land use plan of the County and/or local municipality in which the proposed project is located. It is the objective of the Division of Coastal Management (DCM) to manage the State's coastal resources to ensure that proposed Federal activities would be compatible with safeguarding and perpetuating the biological, social, economic, and aesthetic values of the State's coastal waters.

To solicit public comments, DCM circulated a description of the proposed project to State agencies that would have a regulatory interest. No comments asserting that the proposed activity would be inconsistent with the State's coastal management program were received. A copy of the responses received has been attached for reference.

DCM has reviewed the submitted information pursuant to the management objectives and enforceable policies of Subchapters 15A NCAC 07H and 15A NCAC 07M of Chapter 7 of Title 15A of North Carolina's Administrative Code which are a part of the State's certified coastal management program and concurs that the proposed Federal activity, as conditioned below, is consistent, to the maximum extent practicable, with the enforceable policies of North Carolina's coastal management program.

400 Commerce Avenue, Morehead City, North Carolina 28557-3421
Phone: 252-808-2808 \ FAX: 252-247-3330 \ Internet: www.nccoastalmanagement.net

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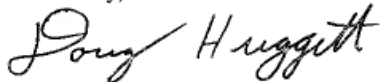
In order to be found consistent with North Carolina's coastal management, the US Marine Corps (Applicant) shall comply with the following conditions of concurrence.

- Should the proposed project result in wetland impacts of either equal to or greater than 0.5 acres, the Applicant shall obtain written approval of a water quality certification from the North Carolina Division of Water Quality before initiating any land disturbing activities. A copy of that certification shall be mailed to DCM within two weeks of receipt. The Applicant shall comply with the requirements of the water quality certification.
- The Applicant, prior to initiating any land disturbing activities, shall obtain the approval of the NC Division of Land Resources of an erosion and sediment control plan. The Applicant shall comply with the requirements of the approved sediment and erosion control plan. A copy of the plan approval shall be forwarded to DCM.
- The Applicant, prior to initiating any land disturbing activities, shall obtain a stormwater permit from the NC Division of Water Quality. The Applicant shall comply with the requirements of the stormwater permit. A copy of the permit shall be forwarded to DCM.

This letter of concurrence is contingent on the Federal agency agreeing with the conditions stated above. In the event that the Federal agency does not agree with the conditions of concurrence, this letter effectively becomes a letter of State "Objection". Should the Federal agency not agree with the conditions stated above, a letter of non-agreement should be sent to DCM. The procedures of 15 CFR 930.43 would then need to be followed.

Should the proposed action be modified, a revised consistency determination could be necessary. This might take the form of either a supplemental consistency determination pursuant to 15 CFR 930.46, or a new consistency determination pursuant to 15 CFR 930.36. Likewise, if further project assessments reveal environmental effects not previously considered by the proposed development, a supplemental consistency certification may be required. If you have any questions, please contact Stephen Rynas at 252-808-2808. Thank you for your consideration of the North Carolina Coastal Management Program.

Sincerely,



Doug Huggett
Manager, Major Permits and Consistency Unit

Cc: Steve Everhart, Division of Coastal Management
Tere Barrett, Division of Coastal Management
Molly Ellwood, NC Wildlife Resources Commission
Shannon Jenkins, NC Division of Environmental Health

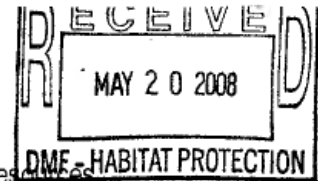


North Carolina Department of Environment and Natural Resources
Division of Coastal Management

Michael F. Easley, Governor

James H. Gregson, Director

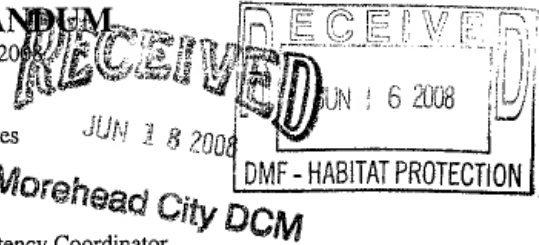
William G. Ross Jr., Secretary



(E)

MEMORANDUM

May 19, 2008



TO: Anne Deaton
NCDENR - Division of Marine Fisheries
P.O. Box 769
Morehead City, NC 28557-0769

FROM: Stephen Rynas, AICP; Federal Consistency Coordinator

SUBJECT: Consistency Submission for Proposed Establishment of a Regimental Complex (DCM#20080065)

LOCATION: Wallace Creek Area, Camp Lejeune, Onslow County; North Carolina

This document is being circulated for consistency review and comment by **June 6, 2008**. Your responses will assist us in determining whether the proposed project would be consistent with the State's Coastal Management Program. If the proposed project does not conform to your requirements, please identify the measures that would be necessary to bring the proposed project into conformance. If you have any additional questions regarding the proposed project you may contact me at 252-808-2808 or e-mail me at: "stephen.rynas@ncmail.net".

REPLY

- No Comment.
- This office supports the project as proposed.
- Comments to this project are attached.
- This office objects to the project as proposed.

Signed: Anne Deaton

Date: 6/11/08
6/13/08

CORRECTIONS

Please identify any corrections, additions, or deletions that should be made in terms of contact information.

RETURN COMPLETED FORM

to
Stephen Rynas, Federal Consistency Coordinator
NC Division of Coastal Management
400 Commerce Avenue
Morehead City, NC 28557-3421



RECEIVED

JUN 5 2008

North Carolina Department of Environment and Natural Resources
Division of Coastal Management

Michael F. Easley, Governor

James H. Gregson, Director

William G. Ross Jr., Secretary

MEMORANDUM

May 19, 2008

TO: Molly Ellwood
Division of Inland Fisheries, Habitat Conservation Program
NC Wildlife Resources Commission
127 Cardinal Drive Extension
Wilmington, NC 28405-5406

FROM: Stephen Rynas, AICP; Federal Consistency Coordinator

SUBJECT: Consistency Submission for Proposed Establishment of a Regimental Complex
(DCM#20080065)

LOCATION: Wallace Creek Area, Camp Lejeune, Onslow County; North Carolina

This document is being circulated for consistency review and comment by **June 6, 2008**. Your responses will assist us in determining whether the proposed project would be consistent with the State's Coastal Management Program. If the proposed project does not conform to your requirements, please identify the measures that would be necessary to bring the proposed project into conformance. If you have any additional questions regarding the proposed project you may contact me at 252-808-2808 or e-mail me at: "stephen.rynas@ncmail.net".

REPLY

- No Comment.
- This office supports the project as proposed.
- Comments to this project are attached.
- This office objects to the project as proposed.

Signed: Molly Ellwood

Date: 4 June 2008

CORRECTIONS

Please identify any corrections, additions, or deletions that should be made in terms of contact information.

RETURN COMPLETED FORM

to
Stephen Rynas, Federal Consistency Coordinator
NC Division of Coastal Management
400 Commerce Avenue
Morehead City, NC 28557-3421



North Carolina Department of Environment and Natural Resources
Division of Coastal Management

Michael F. Easley, Governor

James H. Gregson, Director

William G. Ross Jr., Secretary

MEMORANDUM

May 19, 2008

TO: John Fear
Research Coordinator
NC National Estuarine Research Reserve
101 Pivers Island Road
Beaufort, NC 28516

FROM: Stephen Rynas, AICP; Federal Consistency Coordinator

SUBJECT: Consistency Submission for Proposed Establishment of a Regimental Complex
(DCM#20080065)

LOCATION: Wallace Creek Area, Camp Lejeune, Onslow County; North Carolina

This document is being circulated for consistency review and comment by **June 6, 2008**. Your responses will assist us in determining whether the proposed project would be consistent with the State's Coastal Management Program. If the proposed project does not conform to your requirements, please identify the measures that would be necessary to bring the proposed project into conformance. If you have any additional questions regarding the proposed project you may contact me at 252-808-2808 or e-mail me at: "stephen.rynas@ncmail.net".

REPLY

- No Comment.
- This office supports the project as proposed.
- Comments to this project are attached.
- This office objects to the project as proposed.

Signed: _____

Date: _____

5-27-08

CORRECTIONS

Please identify any corrections, additions, or deletions that should be made in terms of contact information.

RETURN COMPLETED FORM

to

Stephen Rynas, Federal Consistency Coordinator
NC Division of Coastal Management
400 Commerce Avenue
Morehead City, NC 28557-3421



North Carolina Department of Environment and Natural Resources
Division of Coastal Management

Michael F. Easley, Governor

James H. Gregson, Director

William G. Ross Jr., Secretary

RECEIVED
MAY 21 2008

MEMORANDUM
May 19, 2008

RECEIVED
JUN 9 2008
Morehead City DCM

TO: Dan Sams
NCDENR - Division of Land Resources
127 Cardinal Drive Extension
Wilmington, NC 28405-5406

FROM: Stephen Rynas, AICP; Federal Consistency Coordinator

SUBJECT: Consistency Submission for Proposed Establishment of a Regimental Complex
(DCM#20080065)

LOCATION: Wallace Creek Area, Camp Lejeune, Onslow County; North Carolina

This document is being circulated for consistency review and comment by **June 6, 2008**. Your responses will assist us in determining whether the proposed project would be consistent with the State's Coastal Management Program. If the proposed project does not conform to your requirements, please identify the measures that would be necessary to bring the proposed project into conformance. If you have any additional questions regarding the proposed project you may contact me at 252-808-2808 or e-mail me at: "stephen.rynas@ncmail.net".

REPLY

- No Comment.
- This office supports the project as proposed.
- Comments to this project are attached.
- This office objects to the project as proposed.

The complex will require erosion and sediment control plan application and approval.

Signed:

Date: MAY 23, 2008

CORRECTIONS

Please identify any corrections, additions, or deletions that should be made in terms of contact information.

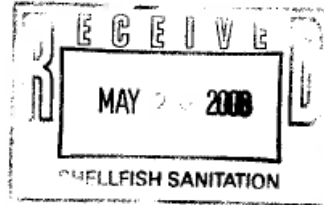
RETURN COMPLETED FORM

to
Stephen Rynas, Federal Consistency Coordinator
NC Division of Coastal Management
400 Commerce Avenue
Morehead City, NC 28557-3421



North Carolina Department of Environment and Natural Resources
Division of Coastal Management Morehead City DCM
Michael F. Easley, Governor James H. Gregson, Director William G. Ross Jr., Secretary

MEMORANDUM
May 19, 2008



TO: Patty Fowler
Shellfish Sanitation District
NCDENR - Division of Environmental Health
Marine Fisheries Building, P.O. Box 769
Morehead City, NC 28557-0769

FROM: Stephen Rynas, AICP; Federal Consistency Coordinator

SUBJECT: Consistency Submission for Proposed Establishment of a Regimental Complex (DCM#20080065)

LOCATION: Wallace Creek Area, Camp Lejeune, Onslow County; North Carolina

This document is being circulated for consistency review and comment by **June 6, 2008**. Your responses will assist us in determining whether the proposed project would be consistent with the State's Coastal Management Program. If the proposed project does not conform to your requirements, please identify the measures that would be necessary to bring the proposed project into conformance. If you have any additional questions regarding the proposed project you may contact me at 252-808-2808 or e-mail me at: "stephen.rynas@ncmail.net".

REPLY

- No Comment.
- This office supports the project as proposed.
- Comments to this project are attached.
- This office objects to the project as proposed.

Signed: Andrew Hamm for Patti Fowler Date: 5/20/08

CORRECTIONS

Please identify any corrections, additions, or deletions that should be made in terms of contact information.

RETURN COMPLETED FORM

to
Stephen Rynas, Federal Consistency Coordinator
NC Division of Coastal Management
400 Commerce Avenue
Morehead City, NC 28557-3421

ENVIRONMENTAL ASSESSMENT

Wallace Creek Regimental Area

Marine Corps Base Camp Lejeune
Onslow County, North Carolina



Cpl Brian M Henner, USMC



August 2008



Sgt Brian Henner, USMC

ENVIRONMENTAL ASSESSMENT
WALLACE CREEK REGIMENTAL AREA
MARINE CORPS BASE, CAMP LEJEUNE
ONSLOW COUNTY, NORTH CAROLINA

Responsible Officer:

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

Point of Contact:

Department of the Navy
Naval Facilities Engineering Command, Mid-Atlantic
Attn: Mike Jones
Marine Corps North Carolina Integrated Product Team
6506 Hampton Boulevard, Building C, Room 3012
Norfolk, VA 23508-1278
(757) 322-4942
michael.h.jones1@navy.mil

August 2008

Acronyms and Abbreviations

ac	acres	NSW	nutrient sensitive waters
AEC	Areas of Environmental Concern	PM	particulate matter
BEQ	Bachelor Enlisted Quarters	ppm	parts per million
BMP	best management practice	PRGs	preliminary remediation goals
CAA	Clean Air Act	RASO	Radiological Affairs Support Office
CAAA	Clean Air Act Amendments	RCRA	Resource Conservation and Recovery Act
CAMA	Coastal Area Management Act	RCW	red-cockaded woodpecker
CFR	Code of Federal Regulations	ROI	region of influence
CZMA	Coastal Zone Management Act	sq ft	square feet
dB	decibel	sq m	square meters
dbc	C-weighted decibel	SWMU	solid waste management unit
DoD	Department of Defense	US	United States
DoN	Department of the Navy	USACHPPM	US Army Center for Health Promotion and Preventative Medicine
EA	Environmental Assessment	USEPA	US Environmental Protection Agency
EIS	Environmental Impact Statement	USFWS	US Fish and Wildlife Service
EMS	Emergency Medical Services	USMC	United State Marine Corps
FONSI	Finding of No Significant Impact	UST	underground storage tank
ft	feet	WTP	water treatment plant
FY	Fiscal Year	WWTP	wastewater treatment plant
ha	hectares		
HQW	high quality waters		
INRMP	Integrated Natural Resources Management Plan		
IR	Installation Restoration		
km	kilometer		
LOS	Level of Service		
m	meter		
MARSOC	Marine Special Operation Command		
MBTA	Migratory Bird Treaty Act		
MCB	Marine Corps Base		
MCO	Marine Corps Order		
$\mu\text{g}/\text{m}^3$	micrograms per cubic meter		
mg	milligram		
mgd	million gallons per day		
mi	mile		
MILCON	Military Construction		
mld	million liters per day		
NAAQS	National Ambient Air Quality Standards		
NAVFAC	Naval Facilities Engineering Command		
NC	North Carolina		
NCAC	North Carolina Administrative Code		
NCDENR	North Carolina Department of Environment and Natural Resources		
NC SHPO	North Carolina State Historic Preservation Office		
NEPA	National Environmental Policy Act		
NPDES	National Pollutant Discharge Elimination System		
NRHP	National Register of Historic Places		

EXECUTIVE SUMMARY

MCB Camp Lejeune proposes to construct a new regimental complex in the Wallace Creek area of MCB Camp Lejeune for approximately 4,000 personnel. Approximately 2,100 of these personnel are newly incoming to the MCB Camp Lejeune vicinity. This complex includes twenty-one military construction projects.

ES.1 DESCRIPTION OF THE PROPOSED ACTION

The Wallace Creek project area is approximately 223 hectares (ha) (551 acres [ac]). The proposed action would involve construction on slightly more than half of this project area, roughly 122 ha (302 ac). The current preferred layout uses a centralized approach to the collocated battalion and regimental facilities with shared infrastructure and supporting facilities. In this way, less land would be developed than a scenario with four separate battalion compounds and regimental area.

The four battalions would be arranged around a central operational/maintenance area, where the motor transportation shops, electronic/communication maintenance shops, and armories are proposed to be located. The proposed indoor marksmanship trainers and supply warehouses are also configured centrally, in order to readily serve the entire regiment. The proposed messhall and medical/dental clinic are located where they would be convenient to other patrons outside the regimental area. Finally, each battalion and company headquarters would be located near the bachelor enlisted quarters that would house the Marines assigned to that battalion.

ES.2 ALTERNATIVES CONSIDERED

Several alternatives for fulfilling the purpose and need of the proposed action were considered to provide adequate facilities for the additional personnel at MCB Camp Lejeune. These alternatives were evaluated based on the following factors:

1. The site must be large enough to accommodate facility requirements for a four-battalion regimental complex that keeps all four battalions together with their Regimental Headquarters.
2. The regiment must be in the vicinity of its command, the 2d Marine Division, which is in the Hadnot Point area.
3. The location must not displace existing ranges and maneuver areas.
4. The alternative must provide adequate operational space in accordance with anti-terrorism/force protection standards.

First, the USMC considered renovating and modernizing existing facilities. However, a review of existing facilities at MCB Camp Lejeune revealed that none met the basic facilities requirements for the new units, even with modernization or renovation. Moreover, there are no existing facilities available for renovation in the Hadnot Point area.

Next, the USMC considered leasing facilities off-base in the local community. In order to meet the space requirements, facilities would need to have approximately 178,000 square meters (approximately 1,916,000 square feet), in addition to parking. Leasing would involve the daily transport of personnel and equipment. This daily transport requires increased logistical effort that would negatively affect training and ultimately mission effectiveness. Even considering these logistical problems, no suitable off-base facilities are available that could provide for housing and operations with appropriate anti-terrorism/force protection measures. As a result, on-base construction is preferred and off-base alternatives were dismissed from further study.

Alternative site locations for the four-battalion regimental area were identified at Wallace Creek East and Cogdel's Creek. Siting the required facilities and infrastructure at Wallace Creek East would be impeded by a major power/natural gas utility easement through the site (evaluation factors 1 and 4). In addition, Wallace Creek East was not large enough (only 106 ha [262 ac]) to fit all four battalions with Regimental Headquarters (evaluation factor 1). Therefore, this site was eliminated as a viable alternative.

Cogdel's Creek was assessed as a potential site for the regimental area. This area was dismissed from further consideration because it was not large enough (only 116 ha [288 ac]) to fit all four battalions with Regimental Headquarters (evaluation factor 1). Furthermore, there are tanks trails at the site that would need to be relocated to have room for the proposed facilities (evaluation factor 3).

ES.3 ENVIRONMENTAL IMPACT OF THE PROPOSED ACTION

Implementation of the proposed action would have some minor adverse environmental impacts. Construction of proposed facilities, infrastructure, and utilities would result in a change to the project area from mixed forest to developed areas. This change would be consistent with the designated land use classification, which is operational and training facilities. This change to developed areas would match nearby developed land use in Hadnot Point. Some existing facilities would need to be demolished in order to make room for the proposed facilities. These include the pesticide storage facility and associated structures, military working dog kennels, and recreational skeet range. Through the environmental assessment process, the Marine Corps has determined that implementing the proposed action would be fully consistent with the applicable policies of the North Carolina Coastal Area Management Act.

The 2,100 new personnel associated with the proposed action would represent about a 5 percent increase from the existing 42,241 active duty personnel at Camp Lejeune. There would be approximately 1,963 dependents associated with the proposed action. This total population gain (4,063 persons) would represent a 1.5 percent increase in the existing tri-county (Onslow, Carteret, and Pender Counties) region population. Total regional economic impact of the construction activity would be \$913.8 million in expenditures supporting an estimated total of 12,866 full- and part-time jobs. Once the funds are used for construction of the four-battalion regimental complex in the Wallace Creek area, these dollars would no longer be circulating through the regional economy and the economic gains would no longer be realized. The economic gains for the region associated with the gain in jobs for the Wallace Creek Regimental

Area would continue for the long-term. The induced and indirect impacts would be realized in a variety of economic sectors.

There would be construction of 27 bachelor enlisted quarters under the proposed action. At least 854 units of off-base housing would be needed in the tri-county region to accommodate incoming military families. However, given the 17 percent vacancy rate for area housing in the tri-county area, the community housing could meet the expected demand for off-base housing.

As evaluated in accordance with Executive Orders 12898 and 13045, 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, including minorities, low-income populations, and children.

Overall, the demand for fire protection and law enforcement would continue to be met by MCB Camp Lejeune. Impacts to emergency services in the community as a result of in-migration would be minor. A medical/dental clinic would be constructed as part of the proposed action to serve the personnel working within the Wallace Creek Regimental Area. The clinic would provide primary medical and dental care, preventative medicine, acute care, and deployment health assessments. Demand for and provision of health care services would increase slightly as a result of the population gain associated with the proposed action; however, impacts on area hospitals are expected to be minor. There would be an increase of approximately 787 school-aged children, 708 of which would likely attend off-base schools. The estimated increase in school-aged children would result in overcrowding because schools within the tri-county region are operating near, at, or in excess of their capacities. Onslow County Schools has initiated a redistricting process that will serve to balance elementary school populations by moving children from overcrowded schools to ones with excess capacity. In addition, two new schools are being constructed: Meadow View Elementary is scheduled to open in August 2008 with a capacity of 765 students and Gum Branch Road Elementary School will open in 2009 with a capacity of 607 students.

An indoor fitness facility would be constructed under the proposed action. The facility would provide exercise areas, space for equipment and gear storage, laundry facility, and shower and locker areas. Under the proposed action, the recreational skeet range would be demolished. Camp Lejeune has recently identified a new location for the skeet range that is outside of the proposed Wallace Creek project area. The affected environment for this replacement facility is similar to actions being analyzed within the *Environmental Assessment for Security Gate Upgrades, Road Improvements, Landfill Expansion, and Relocation of Skeet Range, MCB Camp Lejeune, North Carolina*. Therefore, this new replacement facility has been included for impact analysis in that document. If the proposed action were implemented, impacts to on- or off-base recreational facilities would be minor.

Once the construction phase of the project has been completed, daily traffic to the Wallace Creek Regimental Area project area would increase due to additional commuters. However, this increase in traffic is expected to result in a minor impact because of the proposed additional roads and other roadway improvements. In addition, under a separate proposed project, security gate upgrades at Main Gate and Piney Green Gate and road improvements to Old Saw Mill Road

and Piney Green Road would help reduce traffic congestion due to additional commuters. New parking lots are also included in the proposed action to accommodate the parking demand at the Wallace Creek Regimental Area.

Short- and long-term impacts to air quality for criteria pollutants from the proposed action would be considered minor. Minor, short-term impacts would be related to emissions from worker privately owned vehicles, mobile sources utilized at the site (i.e., construction vehicles and petroleum-fueled equipment) and from fugitive dust emissions. These impacts would be temporary in nature and would cease following the completion of construction activities. The greatest emissions would occur during the final year of construction when the largest amount of facilities are built. Long-term emissions, particulate matter most notable, would be greatly reduced and controlled using standard management practices (e.g., routine sweeping and wetting). There would be minor long-term impacts to air quality as a result of privately owned vehicles of Marines commuting from areas off-base and from the operation of standard heating equipment in the newly constructed facilities. Estimated long-term annual emissions resulting from the proposed action are considered to be minor.

The proposed action would result in minor adverse impacts to noise. Noise generating activities would occur during the construction phase of the project from construction equipment operating at the site and construction/delivery vehicles traveling to and from the site. Noise generated during construction would be similar to noise generated by other construction projects on the Base.

Minor impacts to the supply or capacity of utilities would result from the operation of the proposed Wallace Creek Regimental Area. The current demand for water when added to the water demand created by the operation of the Wallace Creek Regimental Area is expected to be well within the available capacity of the Hadnot Point water treatment plant. In addition, MCB Camp Lejeune's wastewater treatment plant could readily accommodate the additional wastewater generated by the operation and maintenance of facilities at the Wallace Creek Regimental Area.

The Progress Energy Company is expected to be able to meet the demand for additional electricity for the proposed regimental complex without difficulty. In addition, Piedmont Natural Gas would provide natural gas to the Wallace Creek Regimental Area. Solid waste generated during the construction, operation, and maintenance of the regimental complex would be disposed of at the Base landfill on Piney Green Road, which has a predicted available capacity life of 22 years.

Stormwater at the proposed Wallace Creek Regimental Area would be managed and controlled in accordance State-approved sedimentation/erosion and control plans and stormwater permits. Development of facilities would take place on roughly 122 ha (302 ac) and approximately 38 ha (94 ac) of that would be impervious surfaces. This would increase the amount and velocity of stormwater. However, according to conceptual design, approximately 3 ha (7 ac) of stormwater ponds would be constructed within the Wallace Creek Regimental Area project area to control this increase in stormwater.

In 2004, the NC State Historic Preservation Office concurred that the Parachute Training Historic District is eligible for inclusion in the National Register of Historic Places (NRHP). The Parachute Training Historic District consists of three discontinuous contributing resources: PT-4, PT-5, and PT-6. These three resources are within the area of potential effects. However, PT-4 and PT-5 are not within the construction limits of the project. PT-6 is adjacent to one of the proposed buildings and a parking area, but no physical alteration or construction would occur within the NRHP boundary of the building. In addition, the roadway running along the three buildings, Parachute Tower Road, is considered a non-contributing element and therefore its realignment is not considered to be an issue. Therefore, no historic properties would be affected by the proposed action. There are no archaeological sites eligible for the NRHP within the project area.

The proposed action would result in minor impacts to geology, topography, and soils. Minor impacts to existing topography would occur during clearing and grading of the Wallace Creek Regimental Area project area. Construction activities would have no direct impact on geological formations at the project area. During construction, soils at the site would be affected through clearing, grading, compaction, and potential erosion. Erosion impacts would be temporary and would be minimized by employing best management practices (BMPs) for soil erosion and sedimentation control at the construction site. Most of the affected soils would eventually be covered with impervious surfaces or vegetation, preventing long-term erosion. Construction of the proposed Wallace Creek Regimental Area would have minimal adverse impacts on surface waters. Appropriate BMPs would be used both during construction and during the long-term operation and maintenance of the complex. The BMPs would ensure removal of suspended particulates prior to surface runoff entering Wallace Creek, New River, Beaverdam Creek, and Bearhead Creek. Camp Lejeune would prevent contamination of water resources by properly storing all fuel and maintaining hazardous materials storage areas in compliance with MCO P5090.2A, Change 1, Chapter 20 and the Base's 2002 Stormwater Pollution Prevention Plan. Withdrawing groundwater from the Castle Hayne aquifer to provide potable water to the proposed project area is not expected to cause a decline in groundwater levels.

The proposed action has the potential to adversely impact approximately 0.09 ha (0.22 ac) of wetlands and approximately 17 meters (56 feet) of intermittent and perennial streams. However, MCB Camp Lejeune would mitigate impacts to wetlands in accordance with the wetland permit conditions to satisfy mitigation requirements. Proposed development would occupy approximately 0.09 ha (0.22 ac) of the Wallace Creek floodplain and would only be about a tenth of one percent of the total size of the Wallace Creek floodplain, which is considered to be minor.

Up to 64 ha (158 ac) of forested habitat would be removed for development of proposed facilities at the Wallace Creek Regimental Area. This forested area would be permanently removed from the future timber commodity production, and represents less than one percent of the Base's total forested land. Although land would be cleared to accommodate proposed facilities, the scale of land clearing in comparison to the extent of managed forests on-base is relatively small. The amount of remaining resources under forest protection, reforestation, and sustainable timber management under Camp Lejeune's Forestry Management Program would remain substantial. Minor impacts to migratory birds would occur due to loss of resting, roosting, and foraging

habitat. The loss of this forested habitat represents a small portion of the habitat available on a base-wide and regional basis. The proposed action would have minor adverse effects on a population of a migratory bird species. In addition, there would be adverse impacts to wildlife in the immediate vicinity of the proposed action, but the stability of wildlife populations on Base would not be affected.

The proposed action would have no impact to federally-listed threatened and endangered species as none of the listed species or their habitats are known to occur within the proposed project area.

The proposed action would result in minor adverse impacts from hazardous materials, waste management, or existing contaminated sites. Three installation restoration (IR) sites, IR Site 19 – Former Naval Research Lab Dump, IR Site 20 – Former Naval Research Lab Incinerator, IR Site 25 - Former Base Incinerator, as well as ASR Site 2.82 - Active Base Skeet Range and ASR Site 2.78 - Former Practice Hand Grenade Range, are located within the project area. Remediation of contamination would be completed prior to construction activities where warranted. An additional radiological investigation has been recommended for IR Site 19 by the Naval Sea Systems Command Detachment, and is programmed for Fiscal Year 2008. An anomaly investigation for ASR Site 2.82 is also programmed for Fiscal Year 2008 to determine if any unexploded ordnance exists at the site. Usual BMPs would be employed in the handling, removal, and disposal of potentially hazardous substances. Furthermore, if necessary, MCB Camp Lejeune would obtain appropriate approvals from US Environmental Protection Agency and the North Carolina Department of Environmental and Natural Resources regarding proposed development at the project area.

ES.4 MITIGATION

The following mitigation measures would be implemented as part of the proposed action:

- 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 at telephone (910) 451-7230
- BMPs would be used to avoid and minimize the release of sediments into stormwater. Mitigation plans would include both short-term (construction phase) and long-term (project life) features to meet the requirements of the Base's Stormwater Pollution Prevention Plan
- All projects would be designed to avoid and minimize impacts to wetlands and waters of the US

1 PURPOSE AND NEED

1.1 INTRODUCTION

On October 17, 2006, the United States Congress approved the John Warner National Defense Authorization Act for Fiscal Year 2007, which included an increase in end strength of the United States Marine Corps (USMC) from 175,000 to 179,000 Marines. Of this 4,000 overall personnel increase for the USMC, approximately 3,300 Marines are expected to become permanently stationed at Marine Corps Base (MCB) Camp Lejeune. To accommodate these Marines the USMC proposes to construct, operate, and maintain a four-battalion regimental complex in the Wallace Creek area of MCB Camp Lejeune, NC. The Wallace Creek regimental area at MCB Camp Lejeune would provide enough facilities to support a total of approximately 4,000 Marines, 2,100 of which are new Marines associated with the FY07 authorized increase and 1,900 of which would be relocated from other existing facilities on MCB Camp Lejeune. Facilities for the remaining 1,200 Marines coming in as a result of the FY07 authorized increase have been accommodated in existing facilities elsewhere on MCB Camp Lejeune.

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

The project area for the Wallace Creek Regimental Area is approximately 223 hectares (ha) (551 acres [ac]) (Figure 1-2, Location of Wallace Creek Regimental Area). Table 1.1-1 lists the 21 military construction (MILCON) projects that are proposed for the Wallace Creek Regimental Area from Fiscal Year (FY) 2007 to FY 2010 and possibly beyond, depending upon funding.

The combined size of the proposed facilities would be approximately 177,421 square meters (sq m) (1,909,744 square feet [sq ft]). New parking lots would cover approximately 24 ha (59 ac). Proposed roads would be roughly 7 kilometers (km) (4 miles [mi]) in length. Approximately 1.3 km (0.8 mi) of Birch Street would be widened. An existing pesticide storage facility and associated structures along with the military working dog kennels would need to be demolished to make room for the FY 2010 construction projects. Lastly, an existing skeet range in the Wallace Creek area would be closed.

Table 1.1-1
Wallace Creek Regimental Area MILCON Projects

FY 2007 MILCON PROJECTS	FY 2010+ MILCON PROJECTS
P-1213, Messhall	P-138, Two Bachelor Enlisted Quarters
P-1220, 3/9 Operations/Maintenance Complex	P-1160, Indoor Fitness Facility
P-1225, Three Bachelor Enlisted Quarters	P-1194, Two Bachelor Enlisted Quarters
	P-1195, Two Bachelor Enlisted Quarters
FY 2008 MILCON PROJECTS	P-1196, Two Bachelor Enlisted Quarters
P-137, Two Bachelor Enlisted Quarters	P-1197, Two Bachelor Enlisted Quarters
P-1087, Two Bachelor Enlisted Quarters	P-1233, 1/9 Operations/Maintenance Complex
P-1156, 2/9 Operations/Maintenance Complex	P-1234, 9 TH Marine Regimental Operations/Maintenance Complex
	P-1247, Two Bachelor Enlisted Quarters
FY 2009 MILCON PROJECTS	P-1248, Two Bachelor Enlisted Quarters
P-1104, Two Bachelor Enlisted Quarters	P-1249, Two Bachelor Enlisted Quarters
P-1193, Two Bachelor Enlisted Quarters	P-1275, Medical / Dental Clinic
	P-1297, 4/9 Operations/Maintenance Complex

1.2 PURPOSE AND NEED FOR THE PROPOSED ACTION

The proposed action is to construct, operate, and maintain a four-battalion regimental complex to accommodate approximately 4,000 personnel. The proposed facilities and infrastructure at the Wallace Creek Regimental Area would fully support the operational and training mission of the four collocated infantry battalions and Regimental Headquarters by meeting the need for required facilities.

The purpose and need for this proposed action is to sustain the ability of the USMC to meet the military and defense posture and challenges of the current era. Marine Corps forces are currently engaged in Operation Iraqi Freedom and Operation Enduring Freedom in Afghanistan. In order for the Marine Corps to continue to defend the world from grave danger of terrorism, they must be adequately and effectively trained to be mission-ready to meet all operational needs.

The newly rebalanced force structure of the USMC will provide combatant commanders with the capabilities that commanders need in these operations. Often, this means combating asymmetrical warfare tactics such as improvised explosive devices and enemy propaganda. Having two new infantry battalions and a Regimental Headquarters brings capabilities that can be used in both counter-insurgency and major combat operations.

Current plans call for two existing infantry battalions to be collocated with the two new infantry battalions under the operational control of a Regimental Command. Consolidating battalion functions within a Regimental Area would not only accommodate the mission and training requirements for the two new battalions and the two existing battalions, but it would let each battalion have its command post closer to their barracks, allowing for better management of Marines.

The two new infantry battalions and Regimental Headquarters have requirements for both housing and operations and support facilities in order to be mission-ready. The need for specific components of the proposed 21 MILCON projects at the Wallace Creek Regimental Area is described next.

1.2.1 Operations Facilities

A maintenance/operations complex is needed for each of the battalions and the Regimental Headquarters. Five MILCON projects are proposed to meet operational needs and carry out operational initiatives of the new and existing units within the Wallace Creek Regimental Area. Routine training operations for the additional personnel associated with the proposed action would be conducted at existing training facilities within the installation. However, there is a need for several new indoor simulated marksmanship trainers to accommodate the training requirements of the incoming personnel.

1.2.2 Housing

The incoming personnel could either live off-base or live in on-base bachelor enlisted quarters (BEQs) and military family housing. It is estimated that approximately 854 Marines would live off-base. Ninety-five Marines would likely reside in existing on-base housing. It is anticipated that approximately 1,151 single enlisted personnel would require housing on-base in BEQs. There is also a need for BEQ housing for the single enlisted marines from the two existing battalions who would relocate to the Wallace Creek Regimental Area from the Hadnot Point area.

In addition to providing housing for incoming personnel and the two relocated infantry battalions, more BEQs are needed to address existing bachelor quarter space deficiencies in the nearby 2d Marine Division units. This need is outlined in the Commandant of the Marine Corps' goal to reduce BEQ deficiencies. In the Commandant of the Marine Corps's 2006 BEQ Campaign Plan, Marine leaders are directed to ensure that BEQ policies and goals are consistent with the Commandant of the Marine Corps's intent to build unit cohesion. The underlying principle of the BEQ Campaign Plan is that proper matching of units to adequate housing is essential to developing unit cohesion, maintaining unit integrity, and improving quality of life. To meet the need for housing single enlisted personnel, 27 BEQs are proposed in thirteen MILCON projects.

1.2.3 Support Facilities

Several support facilities are required to meet the day-to-day needs of the units: messhall, medical/dental clinic, and indoor fitness facility. Three MILCON projects are proposed to satisfy the supporting needs of the Marines who would be working within the Wallace Creek Regimental Area.

1.3 THE ENVIRONMENTAL REVIEW PROCESS

1.3.1 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 environmental assessment (EA) or environmental impact statement (EIS) for any federal action, except those actions that are determined to be “categorically excluded” from further analysis.

An EIS is prepared for those federal actions that may significantly affect the quality of the human environment. An EA is a concise public document that provides sufficient analysis for determining whether the potential environmental impacts of a proposed action are significant, resulting in the preparation of an EIS, or not significant, resulting in the preparation of a Finding of No Significant Impact (FONSI). Thus, if the USMC were to determine that the proposed action would have a significant impact on the quality of the human environment, an EIS would be prepared.

The intent of this EA is to assess the potential environmental effects of the proposed construction, operation, and maintenance of facilities and infrastructure at the Wallace Creek Regimental Area. The Commanding Officer, MCB Camp Lejeune is the decision maker with regard to the proposed action. As a result, information and analyses documented in this EA will be used to support the Commanding Officer of MCB Camp Lejeune in making one of three decisions: approve the proposed action, approve the proposed action with modification(s), or disapprove the proposed action.

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 (MCO) P5090.2A, Change 1, which provides the Marine Corps’ internal operating instructions on how it implements the provisions of NEPA

1.3.2 Scoping and Alternatives Development

The Environmental Impact Working Group at 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, April 2000). Over the course of several meetings, the Environmental Impact Working Group met to review proposals including the proposed facilities and infrastructure at the Wallace Creek Regimental Area (MCB Camp Lejeune, September 2005; MCB Camp Lejeune, August 2006; MCB Camp Lejeune, October 2006a). At these meetings, the Environmental Impact Working Group determined that an EA would be the appropriate level of documentation to comply with NEPA for the proposed action.

The NEPA team held a project kickoff meeting on March 8, 2007; the team included representatives from the MCB Camp Lejeune Environmental Management Division, the MCB Camp Lejeune Installation Development Division, Naval Facilities Engineering Command (NAVFAC) Mid-Atlantic Division, and the EA preparer. The NEPA team discussed 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 to be addressed in the EA should include: land use, coastal zone, socioeconomics, community facilities and services, transportation, air quality, noise, infrastructure and utilities, cultural and natural resources, and hazardous materials and waste management.

1.3.3 Agency Coordination and Permit Requirements

In addition to NEPA, other laws, regulations, permits, and licenses may be applicable to the proposed construction, operation, and maintenance of facilities and infrastructure at the Wallace Creek Regimental Area at MCB Camp Lejeune. Specifically, the proposed action may require:

- Federal Coastal Consistency Determination concurrence by North Carolina Department of Environment and Natural Resources, Division of Coastal Management
- Clean Water Act, Section 404 (Discharges of Dredge or Fill Material) Permit, US Army Corps of Engineers
- Clean Water Act, Section 401 Water Quality Certification, North Carolina Department of Environment and Natural Resources, Division of Water Quality
- Erosion and Sedimentation Control Plan approval by North Carolina Department of the Environment and Natural Resources, Division of Land Resources, Land Quality Section
- Stormwater Management Permit from the North Carolina Department of Environment and Natural Resources, Division of Water Quality
- Non-Discharge Sewer Extension Permit from the North Carolina Department of Environment and Natural Resources, Division of Water Quality, Non-Discharge Branch

- Water Connection Permit from the North Carolina Department of Environment and Natural Resources, Public Water Supply Section
 - Clean Air Act, Title V Construction and Operation Permit from the North Carolina Department of Environment and Natural Resources, Division of Air Quality
 - Concurrence from the North Carolina State Historic Preservation Officer (NC SHPO) on cultural resources effects findings
-

1.4 RELATED PROJECTS AND ENVIRONMENTAL DOCUMENTATION

Other relevant NEPA documents, have been, or are being, prepared for projects involving recent personnel increases, facility construction near the proposed Wallace Creek Regimental Area. These NEPA documents are listed below. Chapter 5, Cumulative Impacts, provides descriptions of these other proposed actions and identifies potential cumulative impacts associated with the proposed action addressed in this EA.

1.4.1 Previously Prepared NEPA Documents for MCB Camp Lejeune

- 4th Marine Expeditionary Brigade Complex, FONSI signed 12 October 2004
 - Force Structure Review Group Initiatives for FY 2005, FONSI signed 22 August 2005
 - D-30 Range EA, FONSI signed 8 March 2006
 - Marine Special Operations Command (MARSOC) Complex, FONSI signed 17 August 2007
-

1.4.2 NEPA Documents Currently in Preparation for MCB Camp Lejeune

- P-1047 Bachelor Enlisted Quarters
- Wastewater System Upgrades and Modifications
- Security Gate Upgrades, Road Improvements, and Landfill Expansion

2 PROPOSED ACTION AND ALTERNATIVES

The Council on Environmental Quality *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act* establish a number of policies for federal agencies, including "...using the NEPA process to identify and assess reasonable alternatives to the proposed action that will avoid or minimize adverse effects of these actions on the quality of the human environment" (40 CFR 1500.2 (e)). The proposed action involves the construction, operation, and maintenance of a four-battalion regimental complex to accommodate the influx of approximately 2,100 personnel to MCB Camp Lejeune. This proposed action is needed to meet the operational and training mission of four collocated infantry battalions with a Regimental Headquarters. These operational and training mission requirements are the foundation for developing criteria to evaluate various alternatives to the proposed action.

2.1 FACTORS USED IN THE EVALUATION OF ALTERNATIVES

Factors that must be met for an alternative to be a reasonable option for fulfilling the purpose and need for the proposed action are shown below.

Evaluation Factors

1. The site must be large enough to accommodate facility requirements for a four-battalion regimental complex that keeps all four battalions together with their Regimental Headquarters
2. The regiment must be in the vicinity of its command, the 2d Marine Division, which is in the Hadnot Point area
3. The location must not displace existing ranges and maneuver areas
4. The alternative must provide adequate operational space in accordance with Anti-Terrorism/Force Protection standards

With these four factors in mind, alternative locations for the proposed facilities were examined. Three sites were initially identified as potentially meeting the evaluation factors: Wallace Creek, Wallace Creek East, and Cogdel's Creek. The No Action Alternative was also evaluated.

2.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, facilities and infrastructure would not be constructed at the Wallace Creek Regimental Area and existing personnel levels would remain the same. There are no existing facilities at MCB Camp Lejeune that could support the introduction of two new

infantry battalions and Regimental Headquarters even on an interim or short-term basis. The two existing battalions would remain in their present location in Hadnot Point and would not be collocated with the two new battalions at the Wallace Creek Regimental Area.

The No Action Alternative fails to meet evaluation factors as listed in Subchapter 2.1. Ultimately, it cannot support the operational and training needs of two new infantry battalions and Regimental Headquarters that are required for mission-readiness. For these reasons, it is not considered a reasonable solution for satisfying the purpose and need for the proposed action as stated in Subchapter 1.3. However, it does provide a baseline against which to measure the potential impacts of the proposed action. Furthermore, this comparison is required by both the Council on Environmental Quality NEPA implementing regulations and the USMC policy for compliance with NEPA (MCO P5090.2A, Change 1 [USMC, January 2008]). Therefore, the No Action Alternative is evaluated in subsequent sections of this EA.

2.3 ALTERNATIVES CONSIDERED BUT DISMISSED

Several alternatives for fulfilling the purpose and need of the proposed action were considered but dismissed from further study. First, the USMC considered renovating and modernizing existing facilities. However, a review of existing facilities at MCB Camp Lejeune revealed that none met the basic facilities requirements for the new units, even with modernization or renovation. Moreover, there are no existing facilities available for renovation in the Hadnot Point area.

Next, the USMC considered leasing facilities off-base in the local community. In order to meet the space requirements, facilities would need to have a space of approximately 178,000 sq m (approx 1,916,000 sq ft), in addition to parking. Leasing would involve the daily transport of personnel and equipment. This daily transport requires increased logistical effort that would negatively affect training and ultimately mission effectiveness. Even considering these logistical problems, no suitable off-base facilities are available that could provide for housing and operations with appropriate anti-terrorism/force protection measures. As a result, on-base construction is preferred and off-base alternatives were dismissed from further study.

In the site selection process, the USMC searched for alternative locations that were upland areas (non-wetland areas) to avoid impacting wetlands from facility and infrastructure construction. However, due to the nature of the topography and hydrology of MCB Camp Lejeune, wetlands are interspersed throughout the installation. A site that could provide space for a consolidated compound, large enough for four collocated battalions and Regimental Headquarters in a configuration that avoids all wetlands, is not available anywhere on the installation. Therefore, there are no other alternatives available that would allow the layout of the Regimental Area to completely avoid impacts to wetlands while at the same time meeting the evaluation factors listed in Subchapter 2.1.

Alternative site locations for the four-battalion regimental area were identified at Wallace Creek East and Cogdel's Creek (Figure 2-1, Alternatives Considered but Dismissed). Siting the required facilities and infrastructure at Wallace Creek East would be impeded by a major power/natural gas utility easement through the site (evaluation factors 1 and 4). In addition, Wallace Creek East was not large enough (only 106 ha [262 ac]) to fit all four battalions with Regimental Headquarters (evaluation factor 1). Therefore, this site was eliminated as a viable alternative.

Cogdel's Creek was assessed as a potential site for the regimental area. This area was dismissed from further consideration because it was not large enough (only 116 ha [288 ac]) to fit all four battalions with Regimental Headquarters (evaluation factor 1). Furthermore, there are trails used for tank maneuvers at the site that would need to be relocated to ensure enough room for the proposed facilities (evaluation factor 3).

2.4 DETAILED DESCRIPTION OF THE PROPOSED ACTION

The proposed action is to construct, operate, and maintain a four-battalion regimental complex in the Wallace Creek area to accommodate the influx of approximately 2,100 personnel to MCB Camp Lejeune. Locating the regimental facilities at the Wallace Creek site would allow the 21 required MILCON projects to be arranged in a central location (evaluation factor 1). The Wallace Creek site is in the vicinity of the 2d Marine Division (evaluation factor 2). No ranges or maneuver areas would be impacted from proposed development at Wallace Creek (evaluation factor 3). (The skeet range is a recreational facility.) The Wallace Creek site is large enough to provide for the proper standoff distances between facilities and public streets/parking areas. These standoff distances are required for compliance with anti-terrorism/force protection standards (evaluation factor 4). For these reasons, development of regimental facilities and infrastructure at the Wallace Creek area would meet the operational and training requirements of the two new infantry battalions, the new Regimental Headquarters, and two existing infantry battalions already stationed at MCB Camp Lejeune. The two existing infantry battalions would move from their present facilities at the Hadnot Point area of MCB Camp Lejeune to the Wallace Creek Regimental Area and would be collocated with the new battalions.

2.4.1 Design Process for Wallace Creek Regimental Facilities and Infrastructure

The development of the site plan for the layout of the regimental facilities and infrastructure was a lengthy process. This process involved numerous revisions to generate the best layout that would meet the operational needs of the regiment while minimizing environmental impacts. The process started with a week-long functional analysis design charette, which took place from June 4 to June 8, 2007. A design charette is an intense series of planning meetings and design sessions

where a team of design professionals work with the users to come up with a workable solution that is supported by the entire team.

This Wallace Creek Master Plan Functional Analysis Design Charette included participants from many disciplines. Representatives from Navy and USMC civil service personnel, military personnel, and consultants all contributed to the design process with regard to their area of expertise. The civil service personnel included the following disciplines: facility planners, environmental planners and scientists, utility managers, and infrastructure managers. Military personnel attended as future users of the regimental facilities and infrastructure. Design professionals included: project managers, engineers (civil, mechanical, and electrical), architects, and interior designers. Environmental professionals covered a wide array of resources: NEPA, threatened and endangered species, cultural resources, wetlands, installation restoration, clean-up, and remediation.

Each master plan concept initially was developed using the most current information available on environmental resources and the locations of existing facilities within the project area. The intent of using this information was to avoid and/or minimize impacts to sensitive resources and existing land uses. Preliminary environmental resource information taken into consideration included: streams, National Wetlands Inventory mapping, known occurrences of threatened and endangered species, historic structures, and known contaminated sites. The notable existing facilities that factored into the design process were roads and utilities, a recreational skeet range, military working dog facility, and pesticide storage facility.

Three different master plan concepts, Concept 1A, Concept 1B, and Concept 1C, were initially presented for review, deliberation, and comment by the design charette participants. Input on these first three master plan concepts was incorporated and a second set of refined master plan concepts was presented: Concept 2A and Concept 2B. From this second set of master plan concepts, Concept 2B was selected to become the Wallace Creek Master Plan Final Concept (MCB Camp Lejeune, July 2007).

During the summer and fall of 2007, field surveys were conducted for the presence of wetlands and cultural resources. Also, a focused site investigation was performed for environmental contamination by hazardous and toxic waste or munitions and explosives of concern. Results of these surveys and investigation were used to further revise the layout of the Wallace Creek Master Plan Final Concept (MCB Camp Lejeune, July 2007).

The Wallace Creek Master Plan Final Concept is a conceptual plan (MCB Camp Lejeune, July 2007). Additional engineering design level detail, construction plans, and specifications would be needed before this proposed project could be built. The conceptual plan contains approximate locations and sizes of proposed facilities and infrastructure, which form the basis for analyses in this EA.

If design plans should be developed for construction purposes, MCB Camp Lejeune would work closely with the design-build contractor and representatives from the regulatory community to explore prudent and reasonable wetlands avoidance and minimization strategies. Mitigation plans, including on-site wetland restoration and/or creation, may be required by the permit

process administered by the US Army Corps of Engineers. The wetlands permit would be tiered and benchmarks would be met for each phase of construction, since this would be a multi-year construction project. Corresponding wetland mitigation, if required, would be accomplished for each construction phase.

The proposed action has three basic components for the purpose of analyzing potential impacts: construction of new facilities, installation of new infrastructure and utilities, and demolition of existing buildings and structures. These three components are described in detail in the following subchapters.

2.4.2 Proposed Wallace Creek Regimental Facilities

The Wallace Creek project area is approximately 223 ha (551 ac). The proposed action would involve construction on slightly more than half of this project area, roughly 122 ha (302 ac) (Figure 2-2, Wallace Creek Regimental Area). The current preferred layout uses a centralized approach to the collocated battalion and regimental facilities with shared infrastructure and supporting facilities. In this way, less land would be developed than a scenario with four separate battalion compounds and regimental area.

The four battalions would be arranged around a central operational/maintenance area, where the motor transportation shops, electronic/communication maintenance shops, and armories are proposed to be located. The proposed indoor marksmanship trainers and supply warehouses are also configured centrally, in order to readily serve the entire regiment. The proposed messhall and medical/dental clinic are located where they would be convenient to other patrons outside the regimental area. Finally, each battalion and company headquarters would be located near the BEQs that would house the Marines assigned to that battalion.

Design and construction of the 21 proposed MILCON projects would be expected to begin in 2008 and continue through 2010 and possibly beyond. However, preliminary conceptual design for several MILCON projects was programmed for FY07 and FY08.

The design of facilities in the MILCON projects would incorporate available types of new sustainable materials and the use of energy-saving systems and materials wherever possible. These MILCON projects are intended to be built so as to achieve the US Green Building Council's minimum or higher certification in the Leadership in Energy and Environmental Design. The construction phase would involve the removal of timber, clearing and grubbing, earthwork, fill, and grading throughout 122 ha (302 ac) of the larger project area.

The size of proposed facilities to be constructed would be approximately 177,421 sq m (1,909,744 sq ft). Many of the new facilities are proposed as multistory buildings (e.g., BEQs), so the area of the footprint within the complex that these facilities would cover is approximately 80,728 sq m (868,949 sq ft). The actual size of facilities may differ once preliminary engineering begins. However, the listed sizes reflect what the needs are for space. Specific project elements are listed in Table 2.4-1.

Table 2.4-1

Proposed Facilities and Infrastructure at Wallace Creek

Project	Facility	Facility Components	Size (sq m)
FY 2007 MILCON PROJECTS			
P-1213 ¹	Messhall	Messhall Telecommunications room	2,908
P-1220 ²	3/9 Maintenance/Operations Complex	Battalion headquarter building General supply warehouse Electronic/communication maintenance shop Motor transportation shop Armory Indoor marksmanship trainer Telecommunication room Company headquarters building Hazmat storage shelter Telephone exchange building	8,597
P-1225 ³	Bachelor Enlisted Quarters	Bachelor enlisted quarters 1 Bachelor enlisted quarters 2 Bachelor enlisted quarters 3 Telecommunications room	13,482
FY 2008 MILCON PROJECTS			
P-137 ⁴	Bachelor Enlisted Quarters	Bachelor enlisted quarters 1 Bachelor enlisted quarters 2 Water distribution building Telecommunications room	9,276
P-1087 ⁵	Bachelor Enlisted Quarters	Bachelor enlisted quarters 1 Bachelor enlisted quarters 2 Telecommunications room	9,090
P-1156 ⁶	2/9 Maintenance/Operations Complex	Battalion headquarters building General supply warehouse Electronic/communication maintenance shop Motor transportation shop Armory Indoor marksmanship trainer Telecommunications room Company headquarters building Hazmat storage shelter Telephone exchange building Relocate weather shelters	8,773

Table 2.4-1, continued
Proposed Facilities and Infrastructure at Wallace Creek

Project	Facility	Facility Components	Size (sq m)
FY 2009 MILCON PROJECTS			
P-1104 ⁷	Bachelor Enlisted Quarters	Bachelor enlisted quarters 1 Bachelor enlisted quarters 2 Telecommunications room	9,440
P-1193 ⁸	Bachelor Enlisted Quarters	Bachelor enlisted quarters 1 Bachelor enlisted quarters 2 Telecommunications room	9,440
FY 2010+ MILCON PROJECTS			
P-138 ⁹	Bachelor Enlisted Quarters	Bachelor enlisted quarters 1 Bachelor enlisted quarters 2 Telecommunications room	8,989
P-1160 ¹⁰	Indoor Fitness Facility	Indoor Fitness Facility Telecommunications room	8,364
P-1194 ¹¹	Bachelor Enlisted Quarters	Bachelor enlisted quarters 1 Bachelor enlisted quarters 2 Telecommunications room	8,989
P-1195 ¹²	Bachelor Enlisted Quarters	Bachelor enlisted quarters 1 Bachelor enlisted quarters 2 Telecommunications room	8,989
P-1196 ¹³	Bachelor Enlisted Quarters	Bachelor enlisted quarters 1 Bachelor enlisted quarters 2 Telecommunications room	8,989
P-1197 ¹⁴	Bachelor Enlisted Quarters	Bachelor enlisted quarters 1 Bachelor enlisted quarters 2 Telecommunications room	8,989
P-1233 ¹⁵	1/9 Maintenance/Operations Complex	Battalion headquarter building General supply warehouse Electronic/communication maintenance shop Motor transportation shop Armory Indoor marksmanship trainer Telecommunication room Company headquarters building Hazmat storage shelter	8,283
P-1234 ¹⁶	9 th Marines Regimental Maintenance/Operations Complex	Regimental headquarter building General supply warehouse Electronic/communication maintenance shop Motor transportation shop Indoor marksmanship trainer Telecommunication room Hazmat storage shelter Armory	6,417

Table 2.4-1, continued

Proposed Facilities and Infrastructure at Wallace Creek

Project	Facility	Facility Components	Size (sq m)		
FY 2010+ MILCON PROJECTS, continued					
P-1247 ¹⁷	Bachelor Enlisted Quarters	Bachelor enlisted quarters 1 Bachelor enlisted quarters 2 Telecommunications room Personal equipment cleaning station	9,588		
P-1248 ¹⁸	Bachelor Enlisted Quarters	Bachelor enlisted quarters 1 Bachelor enlisted quarters 2 Telecommunications room Personal equipment cleaning station	9,588		
P-1249 ¹⁹	Bachelor Enlisted Quarters	Bachelor enlisted quarters 1 Bachelor enlisted quarters 2 Telecommunications room Personal equipment cleaning station	9,588		
P-1275 ²⁰	Medical/Dental Clinic	Medical clinic Dental clinic Telecommunications room	1,348		
P-1297 ²¹	4/9 Maintenance/Operations Complex	Battalion headquarter building General supply warehouse Electronic/communication maintenance shop Motor transportation shop Armory Indoor marksmanship trainer Telecommunication room Company headquarters building Hazmat storage shelter	8,294		
TOTAL			177,421		
<p>Notes:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <ol style="list-style-type: none"> 1. DD Form 1391 for P-1213, 12 December 2006 2. DD Form 1391 for P-1220, 12 December 2006 3. DD Form 1391 for P-1225, 12 December 2006 4. DD Form 1391 for P-137, 3 January 2007 5. DD Form 1391 for P-1087, 3 January 2007 6. DD Form 1391 for P-1156, 24 January 2007 7. DD Form 1391 for P-1104, 18 June 2007 8. DD Form 1391 for P-1193, 18 June 2007 9. DD Form 1391 for P-138, 8 January 2007 10. DD Form 1391 for P-1160, 9 March 2005 </td> <td style="width: 50%; vertical-align: top;"> <ol style="list-style-type: none"> 11. DD Form 1391 for P-1194, 11 July 2006 12. DD Form 1391 for P-1195, 17 July 2006 13. DD Form 1391 for P-1196, 17 July 2006 14. DD Form 1391 for P-1197, 17 July 2006 15. DD Form 1391 for P-1233, 6 April 2007 16. DD Form 1391 for P-1234, 10 April 2007 17. DD Form 1391 for P-1247, 30 August 2007 18. DD Form 1391 for P-1248, 30 August 2007 19. DD Form 1391 for P-1249, 30 August 2007 20. DD Form 1391 for P-1275, 27 August 2007 21. DD Form 1391 for P-1297, 29 August 2007 </td> </tr> </table>				<ol style="list-style-type: none"> 1. DD Form 1391 for P-1213, 12 December 2006 2. DD Form 1391 for P-1220, 12 December 2006 3. DD Form 1391 for P-1225, 12 December 2006 4. DD Form 1391 for P-137, 3 January 2007 5. DD Form 1391 for P-1087, 3 January 2007 6. DD Form 1391 for P-1156, 24 January 2007 7. DD Form 1391 for P-1104, 18 June 2007 8. DD Form 1391 for P-1193, 18 June 2007 9. DD Form 1391 for P-138, 8 January 2007 10. DD Form 1391 for P-1160, 9 March 2005 	<ol style="list-style-type: none"> 11. DD Form 1391 for P-1194, 11 July 2006 12. DD Form 1391 for P-1195, 17 July 2006 13. DD Form 1391 for P-1196, 17 July 2006 14. DD Form 1391 for P-1197, 17 July 2006 15. DD Form 1391 for P-1233, 6 April 2007 16. DD Form 1391 for P-1234, 10 April 2007 17. DD Form 1391 for P-1247, 30 August 2007 18. DD Form 1391 for P-1248, 30 August 2007 19. DD Form 1391 for P-1249, 30 August 2007 20. DD Form 1391 for P-1275, 27 August 2007 21. DD Form 1391 for P-1297, 29 August 2007
<ol style="list-style-type: none"> 1. DD Form 1391 for P-1213, 12 December 2006 2. DD Form 1391 for P-1220, 12 December 2006 3. DD Form 1391 for P-1225, 12 December 2006 4. DD Form 1391 for P-137, 3 January 2007 5. DD Form 1391 for P-1087, 3 January 2007 6. DD Form 1391 for P-1156, 24 January 2007 7. DD Form 1391 for P-1104, 18 June 2007 8. DD Form 1391 for P-1193, 18 June 2007 9. DD Form 1391 for P-138, 8 January 2007 10. DD Form 1391 for P-1160, 9 March 2005 	<ol style="list-style-type: none"> 11. DD Form 1391 for P-1194, 11 July 2006 12. DD Form 1391 for P-1195, 17 July 2006 13. DD Form 1391 for P-1196, 17 July 2006 14. DD Form 1391 for P-1197, 17 July 2006 15. DD Form 1391 for P-1233, 6 April 2007 16. DD Form 1391 for P-1234, 10 April 2007 17. DD Form 1391 for P-1247, 30 August 2007 18. DD Form 1391 for P-1248, 30 August 2007 19. DD Form 1391 for P-1249, 30 August 2007 20. DD Form 1391 for P-1275, 27 August 2007 21. DD Form 1391 for P-1297, 29 August 2007 				

Facility components in the 21 MILCON projects fall into three general categories: operations facilities, housing, and support facilities.

Operations Facilities

A maintenance/operations complex is proposed for each of the four battalions and the Regimental Headquarters. Each maintenance/operations complex would include: a headquarters building, general supply warehouse, electronic/communication maintenance shop, motor transportation shop, armory, indoor marksmanship trainer, and hazardous material storage shelter. The four battalion maintenance/operations complexes would each have a company headquarters building. One of the maintenance/operations complex MILCON projects would include a telephone exchange building.

These maintenance/operations complexes would provide the space that is needed for administration, storage, drive-through equipment maintenance bays, communications/electronic equipment repair, and secure weapons armories. Other features would include: vehicle wash platforms, oil/water separators, shower and locker areas, recyclable collection area, and sewage pumping station. Built-in equipment at the motor/transportation shops would include a vehicle exhaust system, waste oil storage tank, 15-ton hydraulic lifts, and 10-ton bridge crane.

Housing

Twenty-seven BEQs are proposed to meet the need for housing. The proposed BEQs would house single enlisted personnel from the two new infantry battalions as well as existing personnel from the two existing infantry battalions. These four battalions would be collocated in the Wallace Creek Regimental Area. In addition, these barracks could be used to house existing personnel from other 2d Marine Division units and to address existing bachelor quarter space deficiencies. Each BEQ would house approximately 200 Marines in two-person rooms with semiprivate bathrooms. Recreational areas would be built near the BEQs, including lighted basketball and volleyball courts.

Support Facilities

A messhall, medical/dental clinic, and indoor fitness facility would be built to meet the day-to-day needs of the Marines who would be working within the Wallace Creek Regimental Area. The messhall would be a dining facility for enlisted personnel. The medical/dental clinic would provide primary medical and dental care, preventative medicine, acute care, and deployment health assessments. The indoor fitness facility would provide exercise areas, space for equipment and gear storage, laundry facility, and shower and locker areas.

2.4.3 Proposed Infrastructure and Utilities

Several infrastructure features are proposed for the Wallace Creek Regimental Area (Figure 2-2). New paved parking lots would cover approximately 24.1 ha (59.5 ac). New paved roadways in the complex would be roughly 2.9 km (1.8 mi) in length and would cover approximately 4.0 ha (9.8 ac). Of these new roadways, one new 0.8 km- (0.5 mi-) road would connect Parachute Tower Road with Birch Street. This new road would require a bridge or a culvert to cross Beaver Dam Creek. Three footbridges would also be constructed to cross Beaver Dam Creek. Intersection improvements, such as turning lanes and traffic signals, would be added to the McHugh Boulevard and Birch Street intersection. Approximately 1.3 km (0.8 mi) of Birch Street would be widened to four lanes from its intersection with McHugh Boulevard to the existing four-lane section of Birch Street.

Sidewalks around buildings would cover approximately 9,384 sq m (101,009 sq ft). Proposed stormwater ponds would be about 2.7 ha (6.8 ac) in size. Throughout the regimental area, there would be exterior lighting, security fencing and gates, building signs, and roadway signs. Upon completion of construction, landscaping features would be added.

New utilities would be installed to connect the proposed facilities with the installation's existing network of utilities. Primary and secondary electricity distribution would include transformers. Steam distribution lines would be installed. The new facilities would be serviced by telephone, fiber optic, and natural gas lines. Fire protection waterlines and fire hydrants would be installed throughout the project area. A new elevated water tank with water distribution lines is proposed to meet the need for potable water. Wastewater lines would be installed to connect the area to the installation's existing wastewater treatment facility at French Creek. Finally, solid waste that is not reused or recycled would be transported to the installation's landfill on Piney Green Road.

2.4.4 Proposed Demolition of Existing Facilities

Certain existing facilities would need to be demolished in order to make room for proposed facilities. These include: pesticide storage facility and associated structures, military working dog kennels, and recreational skeet range.

Camp Lejeune has recently identified new locations for the military working dog kennels and the skeet range that are outside of the proposed Wallace Creek project area. The affected environment for these replacement facilities is similar to actions being analyzed within the *Environmental Assessment for Temporary Beddown of Proposed Increase in End Strength, MCB Camp Lejeune, North Carolina* and the *Environmental Assessment for Security Gate Upgrades, Road Improvements, Landfill Expansion, and Relocation of Skeet Range, MCB Camp Lejeune, North Carolina*, respectively. Therefore, these new replacement facilities have been included for impact analysis in these documents.

2.5 EVALUATION OF ALTERNATIVES

Table 2.5-1 summarizes the beneficial and adverse impacts of the two alternatives considered, the No Action Alternative and the proposed action. Under the No Action Alternative, construction of the Wallace Creek Regimental Area would not take place and personnel levels at MCB Camp Lejeune would remain the same.

The proposed action is to construct, operate, and maintain a four-battalion regimental complex in the Wallace Creek area to accommodate the influx of approximately 2,100 personnel to MCB Camp Lejeune. Development of regimental facilities and infrastructure at the Wallace Creek area would meet the operational and training requirements of the two new infantry battalions, the new Regimental Headquarters, and two existing infantry battalions already stationed at MCB Camp Lejeune.

Table 2.5-1
Evaluation of Alternatives

Impact	No Action Alternative	Proposed Action
Land Use and Coastal Zone Management	No construction would occur and land use patterns would remain the same; current land use within project area is consistent with policies designed to protect the coastal zone	<p>Land use would change from mixed forest to developed areas; change would be consistent with the designated land use classification, which is operational and training facilities; change to developed areas would match nearby developed land use in Hadnot Point</p> <p>Pesticide storage and associated structures, military working dog kennels, and recreational skeet range would be demolished to make room for proposed facilities</p> <p>Consistent with applicable coastal zone policies</p>
Socioeconomics	No influx of personnel and no resulting impact to demographics, income and employment, or housing	<p>Net gain of approximately 2,100 military personnel and approximately 1,963 family members, which would represent a 1.5 percent increase in the tri-county region (Onslow, Carteret, and Pender Counties)</p> <p>Short-term benefits on the local economy due to construction, long-term economic gains due to gain in job, indirect and induced impacts to economic sectors</p> <p>Given the vacancy rate for area housing in the tri-county area, community housing could meet the expected demand for off-base housing</p> <p>No disproportionately adverse impacts to minorities, low-income populations, and children</p>
Community Facilities and Services	No influx of personnel and no resulting impact to community facilities and services; Onslow County has initiated a redistricting process to balance elementary school populations and is opening a new elementary school in August 2008 with a capacity of 765 students	<p>Minor impacts to emergency services and hospitals</p> <p>Additional expenses for local school districts, due to the projected increase in enrollment of approximately 708 children; Onslow County has initiated a redistricting process to balance elementary school populations and is opening two new elementary schools in August 2008 and in 2009 with a combined capacity of 1,605 students</p> <p>Active recreational skeet range would be demolished; no adverse impacts to recreational facilities</p>

Table 2.5-1, continued
Evaluation of Alternatives

Impact	No Action Alternative	Proposed Action
Transportation and Traffic	No construction within the Wallace Creek area would occur and the on-base transportation system would not change; however, road improvements associated with a separate proposed project would help reduce traffic congestion in the area	Minor short-term impacts to traffic flow during construction; expected increase in traffic in the Wallace Creek area would have minor impacts due to construction of additional roads and other road improvements
Air Quality	Levels of air emissions currently generated and existing air quality would remain the same; the region is expected to remain in attainment for all criteria pollutants	Short-term construction impacts resulting in fugitive dust emissions; minor, long-term mobile emissions due to privately owned vehicles or Marines commuting from areas off-base and from operation of standard heating equipment in new buildings; the region is expected to remain in attainment for all criteria pollutants
Noise	Existing noise conditions on Base would remain relatively unchanged	Short-term construction related noise impacts; noise generation would be similar to noise generated by other construction projects on Base
Infrastructure and Utilities	No construction would occur and infrastructure and utility conditions would remain in their present state	Proposed action would create a demand for utilities that could be met by available capacities; minor impacts to water supply, wastewater, electricity, natural gas, solid waste, or stormwater
Cultural Resources	Historic and archaeological resources would not be affected because there would be no facility development or ground disturbing activities	No historic structures within the area of potential effects would be impacted and no archaeological sites are eligible for the National Register

Table 2.5-1, continued
Evaluation of Alternatives

Impact	No Action Alternative	Proposed Action
Natural Resources	No construction of facilities would take place; natural resources would not be impacted within the Wallace Creek Area	<p>Minor impacts to geology, topography, soils, or water resources, due in part to best management practices and erosion and sedimentation control plans</p> <p>Approximately 0.09 ha (0.22 ac) of wetlands would be impacted by the proposed a road crossing Beaverdam Creek and the widening of Birch Street; approximately 17 meters (156 feet) of streams would be impacted</p> <p>Roughly 0.09 ha (0.22 ac) of floodplains would be impacted by a BEQ (P-138), new roadway, and the widening of Birch Street; stormwater management ponds would limit the loss of existing flood storage capacity</p> <p>Removal of 64 ha (158 ac) of mixed pine-hardwood habitat would occur within the 162 ha of forest present within the project area; adverse impacts on wildlife not expected to affect the stability of local wildlife populations</p> <p>Minor adverse impact on migratory bird populations; no impacts to federally-listed threatened and endangered species</p>
Hazardous Materials and Waste Management	Existing conditions in hazardous materials and waste management and at contaminated sites would not change	<p>Minor adverse impacts from hazardous materials, waste management, or existing contaminated sites</p> <p>No radiation exposure hazard for personnel working in the project area near IR Site 19</p> <p>Recent sampling data indicates arsenic levels near IR Sites 19, 20, and 25 are within acceptable risk levels; however, a recommendation has been made that a human health risk assessment be conducted to confirm this data evaluation</p> <p>A duplicate sample from one of the soil surface locations at IR Site 20 had an elevated level of trichloroethene, which needs to be confirmed</p> <p>Facilities proposed within IR Sites 19 and 20 include maintenance operations facilities and a medical/dental clinic; a messhall and BEQ would be constructed near these IR Sites but outside of their boundaries; the proximity of the messhall and BEQs may require stricter remediation goals</p> <p>A parking lot would overlay IR Site 25; several BEQs would be within the footprint of the skeet range, which could require remediation for lead</p> <p>Additional investigations are programmed for FY 2008 for IR Site 19 an ASR Site 2.82. Prior to construction activities, all appropriate approvals from USEPA and NCDENR would be received</p>

3 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 construction, operation, and maintenance of a four-battalion regimental complex at the Wallace Creek Regimental Area and associated influx of personnel at MCB Camp Lejeune, North Carolina.

3.1 LAND USE AND COASTAL ZONE MANAGEMENT

3.1.1 Land Use

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

The proposed project site is approximately 223 ha (551 ac) and currently supports a number of land uses. Forested areas (approximately 142 ha [351 ac]) are located across the site with the largest areas of forest located within the western portion of the site. These areas primarily consist of mixed pine and hardwood species with loblolly being the most common pine, and sweet gum and black gum being the most common hardwoods. Forested areas support recreational uses such as hiking and mountain-biking and also provide non-road access to training areas for heavy equipment that cannot travel on paved surfaces (e.g., tanks). These areas generally contain trail systems of various sizes depending on the intended use.

Other recreational uses supported by the site include a skeet shooting range and paintball course that occupies a large area in the center of the site and a drive-in movie theater located near the eastern boundary. The skeet range also supports training uses by Tactical Landing Zone Sparrow.

Additional training facilities and activities currently in the proposed project area include a dog training facility and a few office/storage buildings. The historical significance of these buildings is addressed in Subchapter 3.8.

The proposed site contains wetlands, floodplains, and historic and archaeological resources. These items are addressed in detail in Subchapters 3.9 and 3.8, respectively. The eastern third of the proposed site is crossed by Parachute Tower Road, which is discussed further in Subchapter 3.4.

3.1.2 Coastal Zone Management

The coastal zone is rich in natural, commercial, recreational, ecological, industrial, and aesthetic resources. As a result, it is protected by legislation for the effective management of its resources. The Coastal Zone Management Act (CZMA) of 1972 (16 United States Code [USC] § 1451, et seq., as amended) provides assistance to states, in cooperation with federal and local agencies, for developing land and water use programs in the coastal zone.

CZMA policy 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 CZMA federal consistency requirements if the federal activity will affect any land or water or natural resource in the state's coastal zone, including reasonably foreseeable effects.

The North Carolina Coastal Area Management Act (CAMA) of 1974 was passed in accordance with the federal CZMA. 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 mile) 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
- 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.

Onslow County Coastal Management Policies

The CAMA requires 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 county has zoning controls applicable to only one special area, Golden Acres in Stump Sound Township. The county does, however, require review of subdivisions, providing for minimum standards, enforced by the county Planning Department. Incorporated areas within the county implement their own zoning regulations. Onslow County's *Citizen's Comprehensive Plan for Onslow County*, adopted in 2003, also addresses land use planning in relation to the Coastal Area Management Act (Onslow County Planning and Development Department, April 2003).

3.2 SOCIOECONOMICS

The region of influence (ROI) for socioeconomics was defined as the tri-county region of Onslow, Carteret, and Pender Counties. Although Onslow County estimates that 90 percent of the total military population associated with Camp Lejeune lives within Onslow County (Onslow County, February 2000), the proposed site for the Wallace Creek Regimental Area is located in an area of the Base that may be associated with higher relative influences of Carteret and Pender Counties.

3.2.1 Demographics

There are several major Marine Corps commands and one Navy command aboard MCB Camp Lejeune, making it one of the largest populated bases in the world. A recent estimate of the total active-duty population of the Base is 42,241 active duty personnel. On-base civilian employees add 4,627 personnel. There are over 45,160 family members of active duty personnel. Approximately 67,967 federal retirees and family members reside in the Jacksonville area (MCB Camp Lejeune, January 2007).

The military population of Camp Lejeune has long been an essential element of the demography and economy of both Jacksonville and Onslow County. As the base population has grown, it has become an increasing influence on the demographics of Pender and Carteret Counties. Table 3.2-1 shows more than two decades worth of estimates of the military population associated with MCB Camp Lejeune. In the context of a total tri-county population of 250,820 in 2000 (US Census Bureau, May 2007), the predominance of the military population is apparent. Moreover, there has been a notable increase in the military population within the ROI since 2000.

Table 3.2-1

Military Population in the MCB Camp Lejeune Vicinity 1985-2006

Year	Active Duty Personnel	Total Family Members of Active Duty Personnel	Total Retired & Family Members	Civilian Employees	Total
1985 ¹	43,304	31,674	33,351	4,489	112,818
1990 ¹	44,026	52,565	25,033	4,691	126,315
1991 ¹	46,001	54,871	25,678	4,470	131,020
1996 ¹	41,110	57,000	23,970	4,800	126,880
2001 ²	37,491	53,051	42,012	4,851	137,405
2003 ³	37,220	53,614	42,564	4,883	138,280
2005 ⁴	43,974	38,719	64,891	4,321	151,905
2006 ⁵	42,241	45,160	67,967	4,627	159,995
Sources: 1. Onslow County, February 2000. 2. USMC, 2001. 3. USMC, November 2007 4. MCB Camp Lejeune, October 2005. 5. MCB Camp Lejeune, January 2007.					

Table 3.2-2 shows the total population for the ROI, recent trends, and year 2010 population projections. Onslow County has the largest population within the ROI. Jacksonville City is wholly located within Onslow County. For all three counties, there was an approximately 30 percent increase in population in the 1980s. Whereas the population in Onslow County remained relatively unchanged between 1990 and 2000, the populations of Pender and Carteret Counties grew by 42.4 percent and 12.9 percent, respectively. The annexation of the MCB Camp Lejeune population more than doubled the City of Jacksonville's population between 1990 and 2000, which otherwise remained stable during the course of the last decennial census. Although population numbers of Pender and Carteret Counties do not compare to Onslow County, they are steadily increasing. In fact, Pender County has the largest projected increase (27.2 percent) in population out of the entire ROI. This steady increase in population in Pender County may be due to its proximity to MCB Camp Lejeune.

Census data on the 2000 racial and ethnic make-up of the ROI are summarized in Table 3.2-3. The white and black populations of Onslow County are proportionate to North Carolina as a whole. However, Carteret County has the largest white population and the smallest black or African American population out of the entire ROI. Persons of Hispanic origin are more numerous in Onslow County (7.2 percent) and Jacksonville (10.0 percent) than in the state and Pender and Carteret Counties.

Table 3.2-2
Population Trends 1980-2010

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

Note: n/a = not available
Sources: 1. US Census Bureau, 1990.
2. US Census Bureau, May 2007.
3. North Carolina State Demographics Unit, May 2007.

Table 3.2-3
Race and Ethnicity 2000 (percent)

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

Notes: 1. Having origins in any of the black racial groups of Africa.
2. Includes individuals of two or more races.
3. Hispanic origin, may be of any race.
Source: US Census Bureau, May 2007.

3.2.2 Income and Employment

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

Median household and family incomes, as well as percentages of persons living below the poverty level, as reported from the 2000 Census (and projected to 2005 where available), are shown in Table 3.2-4. Carteret County income data are most similar to the state income levels in 2000; Pender and Onslow Counties and Jacksonville City all had lower incomes than the state in 2000. However, Onslow County had median incomes more similar to the state as a whole in 2005. Jacksonville City had the highest percentage of persons below poverty while Carteret County had the lowest percentage. Jacksonville City and Onslow County had the lowest median household income.

Table 3.2-4
Income and Poverty

Jurisdiction	2000			2000 Per Capita Income
	Median Household Income	Median Family Income	Percent of Persons Below Poverty	
Pender County	35,902	41,633	13.6	17,882
Carteret County	38,344	45,499	10.7	21,260
Onslow County	33,756	36,692	12.9	14,853
Jacksonville City	32,544	33,763	14.1	14,237
North Carolina	39,184	46,335	12.3	20,307
Jurisdiction	2005			2005 Per Capita Income
	Median Household Income	Median Family Income	Percent of Persons Below Poverty	
Onslow County	41,242	44,956	18.2	17,123
North Carolina	40,729	49,339	15.1	20,307
Source: US Census Bureau, May 2007.				

Total employment in the tri-county area is 149,311, with Onslow County contributing 65.8 percent (98,304 jobs), followed by Carteret County at 23.8 percent (35,601 jobs), and Pender County at 10.3 percent (15,406 jobs). Onslow County offers a different employment character than is typical for North Carolina as a whole. In 2005, government sector jobs represented 56.7 percent of the jobs in Onslow County, significantly more than the state’s share at 15.7 percent. Pender County and Carteret County more closely matched the state at 16.9 percent and 14.5 percent, respectively. Whereas military jobs comprise 77.4 percent of the government jobs in Onslow County, military jobs comprise 8.2 percent of the government jobs in Carteret County and 4.3 percent of the government jobs in Pender County, as compared to 15.7 percent of government jobs in North Carolina as a whole (US Department of Commerce, June 2007).

As seen in Table 3.2-5, compared to North Carolina as a whole, the ROI, and Carteret County in particular, is less involved in manufacturing, reflecting in part their distance from both major population centers and the state’s principal transportation networks. The educational, health and social services sector is the largest employer in the tri-county region. Construction and retail trade industries provide a higher share of employment within the ROI than they do in the state.

Table 3.2-5
Employment by Principal Private Industries 2000

Industry Description	Number of Employees			
	Pender County	Carteret County	Onslow County	North Carolina
Manufacturing	2,632	2,043	2,682	755,252
Agriculture, forestry, fishing and hunting, and mining	630	805	996	61,185
Wholesale Trade	645	733	943	131,330
Construction	2,468	3,042	5,022	312,038
Retail Trade	2,367	3,495	7,496	439,868
Information	253	494	1,393	89,797
Finance, insurance, real estate, and rent and leasing	749	1,643	2,234	231,222
Professional, scientific, mgmt., administrative, and waste mgmt. services	1,313	1,894	3,224	296,075
Educational, health and social services	2,704	4,881	10,865	733,440
Arts, entertainment, recreation, accommodation and food services	953	2,776	4,790	265,585
Other Services (except public administration)	1,089	1,394	2,564	176,908
Source: US Census Bureau, May 2007.				

Average annual pay is significantly lower in the ROI than for North Carolina as a whole, as shown in Table 3.2-6. On average, federal jobs provide the highest wages in the tri-county region and in the state. Although the average annual pay for federal jobs in Carteret County and the state is higher than in Onslow County, the average annual pay for federal jobs in Onslow County grew much faster from 2004 to 2005, at a rate of 9.7 percent.

Table 3.2-6
Average Annual Pay 2004-2005

	2004	2005	Percent Change
Pender County			
All Industries	23,951	25,188	5.2
Federal Government	35,914	36,183	0.7
State Government	30,524	31,569	3.4
Local Government	29,058	30,507	4.9
Private Industry	22,133	23,408	5.7
Carteret County			
All Industries	23,596	24,290	2.9
Federal Government	50,705	53,075	4.7
State Government	30,688	31,220	1.7
Local Government	31,237	31,608	1.2
Private Industry	21,463	22,185	3.4
Onslow County			
All Industries	23,969	24,803	3.5
Federal Government	34,278	37,620	9.7
State Government	24,764	21,636	-12.7
Local Government	29,899	30,736	2.8
Private Industry	20,803	21,506	3.4
North Carolina			
All Industries	34,791	35,912	3.2
Federal Government	50,808	52,288	2.9
State Government	35,999	36,998	2.8
Local Government	33,098	34,176	3.3
Private Industry	34,634	35,764	3.3
Source: Based on Department of Labor, Bureau of Labor Statistics, May 2007.			

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

3.2.3 Housing

MCB Camp Lejeune has ten different housing areas, which include approximately 4,450 family housing units. 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, August 2005).

Table 3.2-7 presents selected housing statistics. The 2000 census recorded 55,726 total housing units in Onslow County, of which 27 percent were built during the previous decade (US Census Bureau, May 2007). Within the ROI, Pender County had the lowest total housing units at 20,798; however, the percentage of owner occupied units (82.6 percent) was higher than any other county in the ROI and in the state as a whole. In 2000, Onslow County occupied housing accounted for 48,122 units while Pender County occupied housing was 16,054 units. In Onslow County, rental units accounted for almost 42 percent of the occupied units, as compared to the state proportion of 31 percent and Carteret and Pender Counties' proportions of 23 and 17 percent respectively. In 2000, the average household size in Onslow County was 2.72, compared to 2.49 for the state and for Pender County (US Census Bureau, May 2007). Carteret County had the smallest household size at 2.31.

Table 3.2-7

Housing Units 2000

Jurisdiction	Total Units	Occupied Units		Percent Vacant	Median	
		Percent Owner	Percent Renter		Gross Rent \$ ¹	Value ²
Pender County	20,798	82.6	17.4	22.8	491	86,900
Carteret County	40,947	76.6	23.4	38.4	511	106,400
Onslow County	55,726	58.1	41.9	13.6	518	78,200
North Carolina	3,523,944	69.4	30.6	11.1	548	108,300
Notes: 1. Gross monthly rent. 2. Value of owner-occupied units. Source: US Census Bureau, May 2007.						

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

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

3.2.4 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.

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.”

Table 3.2-3 presents the racial and ethnic characteristics of the tri-county region compared to the state of North Carolina, 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, Pender and Onslow Counties have similar racial and ethnicity population characteristics. The relative proportions of blacks or African Americans, and American Indians and Alaska natives are lower in Carteret County in comparison to the ROI, Jacksonville City, and all of North Carolina.

Children do not reside near or spend any time in the vicinity of the proposed Wallace Creek Regimental Area. The location for the proposed complex is within federal property with access restricted to military personnel and others as authorized by military authority.

3.3 COMMUNITY FACILITIES AND SERVICES

3.3.1 Emergency Services

MCB Camp Lejeune

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

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, August 2005).

Onslow County

Onslow County Department of Emergency Services consolidates under one department several emergency service agencies: the Emergency 911 Communications Center, Emergency Management Office, Emergency Medical Services (EMS), Hazardous Materials Management, Fire Marshal's Office, and Safety and Security (Onslow County Emergency Services, May 2007). The Emergency Services Department coordinates with nine volunteer rescue squads and 20 volunteer fire departments.

Onslow County Sheriff's Office provides public safety services throughout most of the county, excluding MCB Camp Lejeune, Marine Corps Air Station New River, Hofmann State Forest, Hammock Beach State Park, and the county's six municipalities, including the City of Jacksonville. The sheriff's office is organized into 13 principal divisions, units, and programs and is headquartered on Mill Avenue in Jacksonville (Onslow County Sheriff's Office, May 2007).

Pender County

Pender Volunteer EMS and Rescue is charged with providing emergency medical services, crash rescue, search and rescue, and medical transport services across the 2,220 square kilometers (857 square miles) of Pender County. Pender EMS and Rescue assets include six paramedic ambulances, two paramedic quick response vehicles, two heavy rescue trucks, and four patient care transport trucks. Seventy full-time and 33 part-time employees, along with volunteer members, staff the program (Pender EMS & Rescue, Inc., May 2007).

Pender County Sheriff's Department is the principal law enforcement agency of Pender County. The sheriff's department patrols the county, investigates crimes, apprehends criminals,

and provides custody or control for arrested defendants, both pre-trial and sentencing. The Sheriff is responsible for courtroom security, service of civil process, transportation of prisoners, mental patients, and service of criminal papers. The Pender County Sheriff's Department is located at 605 E. Fremont Street in Burgaw, NC (Hampstead Chamber of Commerce, May 2007).

Carteret County

The Emergency Services Department of Carteret County serves as a liaison between the County and the 15 EMS providers in Carteret County. The County's EMS and rescue squads are a combination of both paid and independently chartered private, non-profit corporations that provide emergency medical and rescue services to local government within designated EMS and Rescue districts. The County's volunteer fire departments are independently chartered private, non-profit corporations that provide firefighting to local government within designated fire districts (Carteret County Emergency Services, May 2007).

The Sheriff's Department patrols unincorporated areas of Carteret County, responds to calls for service, and investigates crimes in these areas. The Sheriff's Department also serves criminal papers and civil papers, provides courtroom security, and operates the E-911 communications center. The Sheriff is also responsible for the operation of the county jail in Beaufort, NC. The Teen Court program also reports to the Sheriff (Carteret County Sheriff, May 2007).

3.3.2 Hospitals

MCB Camp Lejeune

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

Onslow County

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

Pender County

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

Carteret County

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

3.3.3 Schools

School-age children of military families residing on Base attend the MCB Camp Lejeune Dependents Schools system. Camp Lejeune Dependents Schools operate five elementary schools, one middle school, and one high school. Table 3.3-1 shows the approximate yearly capacity and enrollment of students and approximate yearly staff among these schools. Total enrollment in Camp Lejeune Dependents Schools varies yearly.

Camp Lejeune Dependents Schools receives 100 percent of its funding from the federal government through a direct Department of Defense (DoD) appropriation. The \$32 million budget includes \$29 million for civilian labor and \$3 million for other school expenses (USMC, 2005).

Table 3.3-1
Schools in the MCB Camp Lejeune Dependents Schools District – 2006-2007 School Year

School (Grades)	Approximate Yearly Capacity	Projected Yearly Enrollment	Approximate Yearly Staff
Bitz Intermediate (PK-5) ¹	600	544	70
DeLalio (PK-5)	340	321	33
Johnson Primary (PK-2) ¹	800	787	100
Tarawa Terrace 1 (PK-1)	400	235	35
Tarawa Terrace 2 (KN-5)	525	356	44
Brewster Middle (6-8)	840	570	53
Lejeune High (9-12)	800	442	50
Total	4305	3255	385

Notes: 1. Bitz Intermediate (PK-5) and Johnson Primary (PK-2) are new schools.
Source: Dargan, James –Camp Lejeune Dependents Schools, April 2006.

Onslow County

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

Onslow County's public schools currently include 18 elementary schools, 8 middle schools, 7 high schools, and one alternative school, the Onslow County Learning Center (Onslow County Schools, August 2006). For the 2006-2007 school year, the total enrollment was approximately 27,014 students and the total membership was approximately 22,461 students (Grantham, January 2008). (Membership is the actual headcount of students enrolled and is a snapshot of one particular day.)

Table 3.3-2 provides the student membership and school capacity for the elementary, middle, and high schools in the Onslow County public school system.

Table 3.3-2

Onslow County Public School Membership and Capacity – 2006-2007 School Year

Schools	Capacity	Membership	
	Students	Students ¹	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
Notes: ¹ ADM for June 2007. Source: Grantham, January 2008; Hudson, February 2008.			

The data in Table 3.3-2 indicate that membership in Onslow County elementary schools exceeds capacity by 12 percent. The middle and high schools are operating near capacity, with membership at approximately 98 percent of available capacity. Generally, the school system is at maximum capacity at all 34 schools. Onslow County Schools is currently redistricting the elementary schools to balance the capacities and enrollments. In addition, two new elementary schools are being constructed. Meadow View Elementary School will open for the 2008-2009 school year with a capacity of 805 students and Stateside Elementary School will open in 2009 with a capacity of 800 (Hudson, February 2008 and Hudson, June 2008). The effect of Camp Lejeune military families on the Onslow County School's population is recognized as a significant factor when it comes to exceeding capacity. Approximately one-third of the students

in the Onslow County public school system are military connected and some of those students move into or out of the school system or move between schools within the system during the school year (Hollamon, January 2008).

Onslow County public schools operate on a total budget of approximately \$188 million. The per student expenditure was \$7,588 for the 2006-2007 school year, including the child nutrition program (Hollamon, January 2008). MCB Camp Lejeune supports the Onslow County schools system by contributing 40 percent of the net proceeds from Camp Lejeune’s sale of timber products. Although timber sales do not produce revenue every year, in fiscal year 2005, this contribution totaled \$28,784 (USMC, 2005).

Pender County

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

Table 3.3-3 provides the student membership and school capacity for the elementary, middle, and high schools in the Pender County public school system.

Table 3.3-3

Pender County Public School Membership and Capacity – 2006-2007 School Year

Schools	Capacity	Membership	
	Students	Students ¹	Percent of Capacity
Elementary	3,258	3,517	107.9
Middle	1,936	1,821	94.1
High	2,065	2,293	111.0
Total	7,259	7,631	105.1
Note: Elementary schools total include the Rocky Point Primary School. Topsail Elementary school is a new school and there is no 06-07 data for this school. Source: Pender County Schools, May 2007.			

The data in Table 3.3-3 indicate that membership in Pender County elementary schools exceeds capacity by 8 percent and the high schools exceed capacity by 11 percent. The middle schools are operating near capacity, with membership at approximately 94 percent of available capacity. Generally, the school system is at maximum capacity at all 16 schools. For the 2005-2006 school year, Pender County public schools operated on a total budget of approximately \$63 million. The per student expenditure was \$7,142 for the 2005-2006 school year, including the child nutrition program (Chestnutt, May 2007).

Carteret County

During the 2005-2006 school year, there were five religious schools in Carteret County serving grades kindergarten to 12 (North Carolina Division of Non-Public Education, May 2007). Total enrollment for the five non-public schools was 425 students. Carteret County's public schools currently include eight elementary schools, four middle schools, three high schools, one primary school, and one alternative school (Bridges Alternative School) (Carteret County Schools, May 2007). For the 2006-2007 school year, the total enrollment was approximately 7,695 students (Courtney, May 2007).

Table 3.3-4 provides the student enrollment and school capacity for the elementary, middle, and high schools in the Carteret County public school system.

Table 3.3-4

Carteret County Public School Enrollment and Capacity – 2006-2007 School Year

Schools	Capacity	Enrollment	
	Students	Students ²	Percent of Capacity
Elementary ¹	5,096	3,870	75.9
Middle	2,392	1,725	72.1
High	2,967	2,671	90.0
Total	10,455	8,266	79.1
Notes: ¹ Includes the Morehead Primary School ² Student enrollment numbers based on the State's determination as of October 2006. *The Bridges Alternative School enrollment/capacity is not included Source: Carteret County Schools, May 2007.			

The data in Table 3.3-4 indicate that the school system is generally operating under capacity. The enrollment in Carteret County high schools is operating at 90 percent capacity, which is near capacity. For the 2005-2006 school year, Carteret County public schools operated on a total budget of approximately \$74 million. The per student expenditure was \$8,444 for the 2005-2006 school year, including the child nutrition program (Ipock, May 2007).

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, August 2005). Impact aid provides the school district a payment in lieu of these lost taxes to assist with the basic educational needs of its students.

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

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

The Onslow County school district reported 8,664 federally connected students for the 2006-2007 school year (Hollamon, January 2008). Of the 8,619 federally connected students reported in the 2005-2006 school year, 6,652 were children of active-duty military personnel and 1,967 were children of civilian personnel. 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, May 2006). The remainder was associated with Marine Corps Air Station Cherry Point and Seymour Johnson Air Force Base. Onslow County Schools received \$2.8 million in federal impact aid in FY 2007 (Hollamon, January 2008).

Carteret County received \$16,247 in federal impact aid in 2005, considerably less than Onslow County. Pender County did not report any federal impact aid in 2005. It is reasonable to assume that the school district does not educate at least 400 federally connected children or the federally connected children do not make up at least three percent of the school district's total average daily attendance (FedSpending.org, May 2007).

3.3.5 Recreational Facilities

MCB Camp Lejeune

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

- An archery range
- A skeet/trap shooting range
- Two marinas
- Two campgrounds
- Picnic areas
- Horse stables
- Two golf courses
- 124 athletic fields
- 62 tennis courts

- 21 handball/racquetball/squash courts
- 39 basketball courts
- A bowling center
- Two physical fitness centers
- A swimming/surfing beach complex
- A fishing pier
- Five swimming pools
- Three movie theaters
- Six hobby shops
- Four recreation/community centers
- A youth center

Onslow County

The Onslow County Parks and Recreation Department operates seven district parks, four regional beach access sites on North Topsail Beach, and a kayak and canoe paddling trail (Onslow County Parks and Recreation Department, April 2006). 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 mi) kayak and canoe paddling trail travels the New River stopping at the Rhodestown Landing, the Burton Industrial Park Landing, and finally, the New River Waterfront Park in Jacksonville (Onslow County Parks and Recreation Department, April 2006).

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 Camp Lejeune. The City of Jacksonville operates parks, playgrounds, recreational centers, a skate park, and a system of trails and greenways.

Pender County

Pender County's Holly Shelter Game Preserve is the largest state-controlled hunting preserve on the East Coast. Bird watching, turtle watching, and dolphin and whale watching are among the favorite pastimes on Topsail Island. In central and western Pender County, strawberry and blueberry farms offer pick-your-own opportunities in May and June. On Topsail Island, a wide range of beach cottages, townhouses, condominiums, and motels, plus campgrounds for tents, trailers, and recreational vehicles (RV campers) are available. The Kirkwood Camp and Conference Center also offers meeting facilities and accommodations in a beautiful woodland setting for group retreats and conferences (Pender County Tourism, May 2007).

Carteret County

Carteret County has seven parks that offer athletic fields, play lots, picnic shelters, and comfort stations. In addition to the parks, there are several picnic areas, two water access areas in Beaufort, NC, and a fishing pier and beach access on Harkers Island (Carteret County Parks and

Recreation, May 2007). Harkers Island is home to the Cape Lookout National Seashore. This park offers a variety of things to do including: shelling, fishing, swimming, camping, birding, horse watching, hunting, and hiking (National Park Service, May 2007).

3.4 TRANSPORTATION AND TRAFFIC

The main roads in the vicinity of Camp Lejeune are US 17 and NC Route 24 (Figure 1-1). US 17 runs roughly north-south, connecting Jacksonville with Wilmington, North Carolina 82 km (51 mi) to the south and New Bern, North Carolina 58 km (36 mi) to the north. NC Route 24 is an east-west road, connecting Jacksonville with Morehead City, North Carolina to the east and Fayetteville, North Carolina to the west. Other public roads near Camp Lejeune include NC Route 210 and NC Route 172. A portion of NC Route 172 is aligned through the southern area of the Base.

Access to Camp Lejeune is primarily provided by four major gates: Holcomb Boulevard/Main Gate from NC Route 24, Piney Green Gate from NC Route 24, Triangle Outpost Gate from NC Route 172, and Sneads Ferry Gate from NC 172. Construction vehicles are encouraged by the Base to use the Piney Green Gate.

The proposed project area is accessed via Holcomb Boulevard, a major entrance road to MCB Camp Lejeune. This road crosses the proposed project area along the eastern third of the site. Further access to the site can be achieved via Birch Street and Parachute Tower Road as well as Main Service Road.

Traffic in the Hadnot Point area is somewhat typical of a commercial urban area. Table 3.4-1 shows 2003 level of service (LOS) data for intersections in the Hadnot Point area. The LOS data are useful in understanding how well an intersection is operating, with LOS A indicating the best and LOS F the worst.

Table 3.4-1

Level of Service Values for Intersections Near the Proposed Project Area

Location	LOS ¹
Intersections Near Proposed Wallace Creek Regimental Area	
McHugh Boulevard/Gonzales Boulevard	B
Sneads Ferry Road/Lyman Road	C
Sneads Ferry Road/Gonzales Boulevard	B
Notes: 1. Data reflect the lowest LOS from three recorded times: AM peak hour, Midday peak hour, and PM peak hour.	
Source: Ramey Kemp & Associates, June 2003.	

Under a separate project (Proposed Security Gate Upgrades, Road Improvements, and Landfill Expansion) described in Subchapter 1.4, the USMC is planning to construct and upgrade the Main Gate and Piney Green Gate and make associated road improvements to Old Saw Mill Road and Piney Green Road. 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.

3.5 AIR QUALITY

3.5.1 National Ambient Air Quality Standards and Attainment Status

Both government and the general public are concerned about the quality of the air we breathe. Air quality is of concern relative to the proposed action because its implementation has the potential to introduce air pollutants to the atmosphere. Each state implements programs to monitor and control air pollutant emissions in accordance with the requirements of the 1970 Clean Air Act (CAA) via State Implementations Plans and permitting requirements.

The US Environmental Protection Agency (USEPA), under requirements of the CAA as amended in 1977 and 1990, established National Ambient Air Quality Standards (NAAQS) for six contaminants, referred to as criteria pollutants (40 CFR Part 50). These are: carbon monoxide, lead, nitrogen dioxide, particulate matter (PM), ozone, and sulfur oxides. Ozone is formed as a result of complex photochemical reactions in the atmosphere between volatile organic compounds, nitrogen oxides, and oxygen. Therefore, ozone is controlled by strictly limiting emissions of volatile organic compounds and nitrogen oxides in areas where ozone is a problem.

The NAAQS include primary and secondary standards. Primary standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings. The primary and secondary standards are listed in Table 3.5-1. The North Carolina Department of Environment and Natural Resources (NCDENR) has an additional standard for total suspended particulates, which is also included in Table 3.5-1.

Areas that meet the NAAQS for a criteria pollutant are designated as being in "attainment." Where the criteria pollutant level exceeds the NAAQS, those areas are designated as being in "nonattainment."

Table 3.5-1

National Ambient Air Quality Standards

Pollutant	Averaging Time	NAAQS	
		Primary NAAQS	Secondary NAAQS
Carbon Monoxide	8 Hour	9 ppm (10 mg/m ³)	None
	1 Hour	35 ppm (40 mg/m ³)	None
Lead	Quarterly Average	1.5 µg/m ³	Same as Primary Standard
Nitrogen Dioxide	Annual Arithmetic Mean	0.053 ppm (100 µg/m ³)	Same as Primary Standard
Particulate Matter (PM ₁₀)	Annual Arithmetic Mean	Revoked	-
	24 Hour	150 µg/m ³	-
Particulate Matter (PM _{2.5})	Annual Arithmetic Mean	15 µg/m ³	Same as Primary Standard
	24 Hour	35 µg/m ³	-
Ozone	8 Hour	0.075 ppm (157 µg/m ³)	Same as Primary Standard
	1 Hour	0.12 ppm (235 µg/m ³)	
Sulfur Oxides	Annual Arithmetic Mean	0.03 ppm (80 µg/m ³)	-
	24 Hour	0.14 ppm (365 µg/m ³)	-
	3 Hour	-	0.50 ppm (1,300 µg/m ³)
North Carolina TSP Standard	Annual Geometric Mean	75 µg/m ³	
	24 Hours	150 µg/m ³	-

Notes: ppm = parts per million, µg/m³ = micrograms per cubic meter
Source: USEPA, May 2007.

Camp Lejeune and Onslow County are located in the Southern Coastal Plain Intrastate Air Quality Control Region (defined in 40 CFR Part 81.152), which is comprised of 13 counties. Each of the 13 counties that make up this region has been designated as being in attainment for all criteria pollutants (40 CFR Part 81.334).

Under Title V of the CAA, Camp Lejeune is required to obtain a Title V operating permit, which is issued by the NCDENR Division of Air Quality under the provisions of Article 21B of Chapter 143, General Statutes of North Carolina as amended and 15A North Carolina Administrative Code (NCAC) Subchapters 2D and 2Q. Camp Lejeune's "Air Quality Federal Title V and State Operation Permit" and "Air Quality State Construction Permit" authorizes the Base to operate and construct certain emission sources and associated air pollution control devices. This permit involves intensive monitoring, record keeping, and reporting requirements for approximately 800 different sources, such as external and internal combustion sources, surface coating operations, and engine testing operations.

3.5.2 General Conformity

The Clean Air Act Amendments (CAAA) of 1990 expand the scope and content of the CAA's conformity provisions by providing a more specific definition of conformity. As stipulated in CAAA Section 176(c), conformity is defined as "conformity to the State Implementations Plan's purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of such standards."

The USEPA published final rules on general conformity that apply to federal actions in areas designated nonattainment for any of the criteria pollutants under the CAA (40 CFR Parts 51 and 93) in the November 30, 1993 *Federal Register*. Since the proposed action would occur within an attainment area, this rule is not applicable to the project.

3.6 NOISE

Noise is one of the most common environmental issues associated with military operations such as weapons firing, demolitions, and aircraft operations. Noise levels are measured in units called decibels (dB). 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.

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 1 - acceptable for noise sensitive land uses
- Noise Zone 2 – normally not recommended for noise sensitive land uses
- Noise Zone 3 – not recommended for noise sensitive land uses (US Army Center for Health Promotion and Preventative Medicine [USACHPPM], November 2005)

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

The most recent noise study completed for MCB Camp Lejeune is a June 2007 study prepared by the USACHPPM to include existing and future noise contours (USACHPPM, June 2007). According to the contours of the June 2007 noise study, the project area is situated in Noise Zone 2 with C-weighted day-night average sound levels between 62 and 70 C-weighted decibel (dBC). There are no noise sensitive receptors, such as family housing, hospitals, or schools, within the immediate vicinity of the proposed project area. There are BEQs within the proposed project area.

3.7 INFRASTRUCTURE AND UTILITIES

3.7.1 Water Supply

The proposed project area is within the Hadnot Point community water system, which obtains water from 31 groundwater wells located on Base. Groundwater is pumped from the Castle Hayne aquifer, approximately 55 m (180 ft) below the ground. This water is pumped from the wells to a water treatment plant located on the main portion of the Base. As the raw water enters the storage reservoir, sodium hypochlorite is added to the water to protect against microbial contamination. Treated water is pumped from the reservoir and distributed throughout the Hadnot Point community water system. The Hadnot Point water treatment plant (WTP) has a 19 million liter per day (mld) (5 million gallons per day [mgd]) treatment capacity. The estimated average annual demand on the Hadnot Point WTP is 10.8 mld (2.85 mgd) (Sides, 2004/2005, in DoN, August 2005).

3.7.2 Wastewater

Wastewater at Camp Lejeune is conveyed to the wastewater treatment plant (WWTP) located in the French Creek area. The WWTP's process and sludge handling systems were designed for an average daily flow of 57 mld (15 mgd), and are currently processing approximately 19 mld (5 mgd) (Whited, February 2008). Camp Lejeune's National Pollutant Discharge Elimination System (NPDES) permit allows the discharge of up to 57 mld (15 mgd) through a diffuser into the New River. A portion of the wastewater residuals (bio-solids) is applied to approximately 690 ha (1,705 ac) of the Base's forested lands and open areas under Camp Lejeune's Residuals Application Program (MCB Camp Lejeune, Environmental Management Department, July 2006).

Under a separate project (Proposed Wastewater System Modifications and Upgrades) described in Subchapter 1.4, the USMC is planning to construct a series of upgrades and modifications to the existing wastewater collection and treatment system at MCB Camp Lejeune. These upgrades and modifications will provide parallel force main river crossings at the New River, Scales Creek, Northeast Creek, and Wallace Creek; construct a new lift station near Parachute Tower Road with a connection to the existing wastewater line; and replace an existing force main near Gonzales Boulevard. Additionally, the USMC will be constructing a new force main from US 17 along Verona Loop Road through the K Range area, under the New River and connecting to an existing force main that ultimately discharges to the WWTP at French Creek. The USMC also plans to construct a new pump station at the newly established MARSOC complex and near Verona Loop Road. Together these improvements to the wastewater system will improve the efficiency of the existing wastewater collection and treatment system. Specifically, the improvements will provide a backup system in the event of breakage or damage to the existing force main, while maintaining sufficient wastewater disposal capacity to support existing

operations on Base as well as the future needs of tenant commands, Base operations, and residents. These upgrades and modifications will facilitate the ability of MCB Camp Lejeune to meet the increasing demands on the Base wastewater disposal infrastructure resulting from planned population growth.

3.7.3 Electricity

The Progress Energy Company (formerly Carolina Power and Light Company) is the primary provider of electricity to Camp Lejeune, with Jones-Onslow Electric Membership Corporation as an additional source. There are no electrical supply or capacity issues at Camp Lejeune (Caston, January 2007).

3.7.4 Natural Gas

Piedmont Natural Gas is the local provider of natural gas to Camp Lejeune. There are no issues with natural gas capacity.

3.7.5 Solid Waste

Solid waste that is not reused or recycled is transported to the Base landfill located on Piney Green Road. Solid waste is visually monitored prior to entering the landfill. Waste that can be recycled is diverted to one of several recycling facilities: materials recovery, compost recycling, wood waste recycling, and construction and demolition debris recycling (MCB Camp Lejeune, Environmental Management Department, August 2006b). The rate of solid waste disposal at Camp Lejeune is rather variable, but averages approximately 3,583 metric tons per month (3,950 tons per month) (MCB Camp Lejeune, Public Works Division, July 2006).

The Base landfill is divided into five phases, with each phase expected to provide the capacity for five years of waste. Phase I of this landfill was used from 1998 to 2004. Phase II has been in operation since 2004 and is expected to close around 2010 (MCB Camp Lejeune, Public Works Division, July 2006). Phase III of the landfill is expected to be ready in late 2008, and should accommodate another five to six years of solid waste disposal capacity. Phases IV and V would be constructed when the previous phase nears its capacity. The Base landfill is expected to remain open until roughly 2030 (MCB Camp Lejeune, Environmental Management Department, January 2007).

3.7.6 Stormwater

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

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

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

3.8 CULTURAL RESOURCES

Camp Lejeune manages a variety of historic and prehistoric cultural resources. They 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 Department, August 2006a). In addition to extensive archaeological resources, Camp Lejeune also manages historic architectural properties. Camp Lejeune was constructed during the mobilization of the Marine Corps during World War II, and many of its buildings and developed areas remain as they were originally constructed and retain a high degree of historical integrity (MCB Camp Lejeune, Environmental Management Department, August 2006a).

3.8.1 Historic Resources

The proposed project area includes a historic district that was identified as being eligible for listing on the National Register of Historic Places (NHRP) during a historic architectural evaluation of Camp Lejeune's World War II-era construction. The Parachute Training Historic District, which is significant for its association with the paratroop training mission of Camp Lejeune during World War II (criterion A) and for embodying the distinctive characteristics of a specialized building developed by the military for the training of its personnel in particular skills (criterion C), consists of three discontinuous contributing resources: PT-4, PT-5, and PT-6.

Figure 3-1, Cultural Resources at the Wallace Creek Regimental Area, shows the locations of these resources. PT-4, PT-5, and PT-6 are the only extant resources of Camp Lejeune's parachute training facilities, which were established in mid-1942. Each of these three facilities originally consisted of a 76-m (250-ft) tall steel training tower supported by concrete footers at the corners of a two-story equipment building; the steel towers no longer stand. The North Carolina State Historic Preservation Office (NC SHPO) concurred that the Parachute Training Historic District is eligible for inclusion in the NRHP in June 2004 (Brook, June 2004) (Appendix A). For each building, the NRHP boundary extends 15.2 m (50 ft) from each elevation and includes the concrete footers (Dixon and Bowers, February 2000). The roadway running along the three buildings, Parachute Tower Road, is considered a non-contributing element in the district.

3.8.2 Archaeological Resources

Archaeological surveys of all high-probability soils within the project area have been undertaken. Three potentially eligible archaeological sites were identified within the boundaries of the proposed project area: 31ON1059, 31ON1077, and 31ON1132. These areas were discussed at the project kickoff meeting held at MCB Camp Lejeune on Thursday, 08 March 2007. Phase II field survey and evaluation of these sites was completed in November 2007. Preliminary results of the survey indicate that all three sites do not meet the NRHP criteria for eligibility (Appendix A). Consultation with the NC SHPO on the final results of the Phase II survey was initiated by a letter from MCB Camp Lejeune to the NC SHPO on April 9, 2008 (Appendix A).

3.9 NATURAL RESOURCES

3.9.1 Geology, Topography, and Soils

Geology at the proposed project area consists of marine deposits that form a weakly dissected alluvial plain. The deposits are mostly clean sand and clayey sand, layered with deposits of clay and marine shells. Along the coast, stream sediment deposition and natural shore processes develop and maintain beaches, swamps, and mud flats.

Two primary geomorphic surfaces are identified at the project area:

- Pamlico surface, elevations of 0 to 7.6 m (0 to 25 ft) in narrow strips along the New River and its tributaries
- Talbot surface, elevations of 7.6 to 13.7 m (25 to 45 ft) underlying most of mainside Camp Lejeune

Topography at the proposed project area is variable. Generally speaking, the area is characterized by upland areas with gradual to moderate slopes toward inland watercourses. Upland area elevation generally ranges between 7.6 to 13.7 m (25 to 45 ft) above mean sea level while wetland area elevation ranges between 0 to 7.6 m (25 ft) above mean sea level.

Soils at the proposed project area consist of Muckalee loam in wetland areas and change to Marvyn loamy fine sand, Pactolus fine sand, Onslow loamy fine sand, and Baymeade fine sand as one moves upward in elevation (Barnhill, July 1992). US Department of Agriculture Natural Resources Conservation Service soil descriptions for the soil types found in the proposed project area are summarized in Table 3.9-1.

Table 3.9-1

Summary of Soil Classes

Map Unit Name	Map Unit Description
Baymeade fine sand, 0 to 6 percent slopes	The Baymeade series consists of deep, well drained soils with moderately rapid permeability. They formed in loamy and sandy marine sediments of the lower Coastal Plain. Slopes range from 0 to 12 percent.
Marvyn loamy fine sand, 6 to 15 percent slopes	The Marvyn series consists of deep, well drained, moderately permeable soils that formed in loamy marine sediments on Coastal Plain uplands. Slope ranges from 0 to 15 percent.
Muckalee loam	The Muckalee series consists of poorly drained moderately permeable soils formed in loamy and sandy alluvium. These soils are on floodplains of streams in the Coastal Plain. Slopes range from 0 to 2 percent.
Onslow loamy fine sand	The Onslow series consists of moderately well drained and somewhat poorly drained soils that formed from moderately fine-textured Coastal Plain sediments. These soils are on nearly level to slightly convex divides of uplands. Slopes range from 0 to 3 percent.
Pactolus fine sand	The Pactolus series consists of moderately well drained and somewhat poorly drained soils that formed from sandy fluvial and marine sediments. Slopes range from 0 to 6 percent.
Source: US Department of Agriculture, Natural Resources Conservation Service, May 2007.	

3.9.2 Water Resources

No standing water bodies are located in the proposed project area; however, the surface water features located within the proposed project area include Wallace Creek, Beaverdam Creek, and Bearhead Creek. The water resources in the project area are shown on Figure 3-2, Water Resources at the Wallace Creek Regimental Area. These three tributaries flow into the New River and are considered inland waters as they have no direct access with the ocean. Approximately 1,822 m (5,978 linear ft) of intermittent streams and 8,830 m (28,970 linear ft) of perennial streams can be found throughout the project area in association with wetlands.

The creeks and portions of the New River closest to the project area are designated “Prohibited Areas” for shellfishing. “Prohibited Areas” are those areas that are administratively closed for the harvesting of shellfish for any purposes related to human consumption. 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).

High-density development near SA waters requires that there be no direct outlet channels or pipes to SA waters unless permitted in accordance with 15A NCAC 2H .0126. Additionally, BMPs must be infiltration systems designed to control the runoff from all surfaces generated by one and one-half inches of rainfall. Runoff in excess of the design volume must flow overland through a vegetative filter with a minimum length of 50 ft measured from mean high water of SA waters (15A NCAC 02H). There are no SA waters within the project area.

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” (NSW) 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” (HQW) are waters rated as excellent based on biological or physical/chemical characteristics (15A NCAC 02B). The North Carolina Marine Fisheries Commission has further designated these areas as “primary nursery areas” (15A NCAC 3N.0002). 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 (NC Division of Marine Fisheries, August 2006). There are no primary nursery areas within the project area. The closest primary nursery area is on the other side of the New River, directly to the west of the project area, approximately 1,250 m (4,100 ft) away. “Special secondary nursery areas” are located adjacent to “secondary nursery areas” but closer to the open waters of our

sounds and the oceans. The majority of the year when juvenile species are abundant, these waters are closed to trawling. There are no special secondary nursery areas within the project area. The lower reaches of Wallace Creek are considered special secondary nursery areas.

Wallace Creek

Wallace Creek is classified as SB, surface waters that are used for primary recreation, including frequent or organized swimming and all SC uses. In addition, Wallace Creek is considered NSW and is a tributary of the New River, generally flowing in a westward direction. Wallace Creek forms the western boundary of the proposed project.

Beaverdam Creek

Beaverdam Creek is also classified as SB and is considered NSW. Beaverdam Creek is a tributary of the New River and flows in a westward direction. The creek forms the northern boundary of the proposed project area.

Bearhead Creek

Bearhead Creek is located near the southwest extent of the proposed project area. Similar to Wallace and Beaverdam Creeks, it is classified as SB and is considered NSW. Bearhead Creek is a tributary of the New River and generally flows in a westward direction.

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. Within the New River estuary, all waters downstream from the Atlantic Coastline Railroad Trestle and north of Grey Point to the New River are classified as SC. In addition, all waters draining to the New River north of Grey Point are considered NSW. The New River and most tributary streams of the New River south of the City of Jacksonville have the additional designation of HQW (15A NCAC 3N.0002) and primary nursery areas (15A NCAC 3N.0002). The section of the New River nearest to the proposed project area is considered a special secondary nursery area (see Figure 3-2).

Groundwater

All of Onslow County, including Camp Lejeune, falls within the freshwater portion of the Castle Hayne aquifer. This aquifer is surficial or unconfined in that it overlies deeper aquifers confined by clay sediments. The Castle Hayne aquifer ranges 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 – 1.9 kiloliters per minute (200-500 gallons per minute) (NCDENR, Division of Water Resources, May 2007).

3.9.3 Wetlands and Floodplains

Wetlands

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

Development is proposed for roughly 122 ha (302 ac) of the entire 223 ha (551 ac) project area, although a much broader area, 383 ha (946 ac), was field surveyed to determine wetland boundaries in April 2007 (NAVFAC Atlantic, November 2007). The US Army Corps of Engineers, Wilmington District personnel field verified the delineated wetland boundaries at Wallace Creek on 3 May 2007. There were 99 ha (245 ac) wetland acres delineated in the Wallace Creek area.

The Wallace Creek project area includes three wetland systems: estuarine, riverine, and palustrine. The majority of the delineated wetlands were palustrine forested (90 ha [223 ac] or 91 percent) and occur along the floodplain of Wallace Creek and in association with stream tributaries of Bearhead Creek and Beaverdam Creek. Palustrine scrub-shrub wetlands (1.8 ha [4.5 ac]) and one isolated, emergent wetland (0.5 ha [1.3 ac]), were associated with a power line right of way in the project area. Estuarine wetlands 5 ha (12.4 ac) were found in proximity to Wallace Creek, while riverine wetlands 1.3 ha (3.14 ac) were identified in the upper reaches of Beaverdam Creek. Of the 223 ha (551 ac) project area, approximately 39 ha (97 ac) are wetlands. Figure 3-3, Wetlands and Floodplains at Wallace Creek Regimental Area, shows the wetlands, which have been identified and delineated within the project area.

Floodplains

Executive Order 11988, *Floodplain Management*, sets forth the responsibilities of federal agencies for reducing the risk of flood loss or damage to personal property, minimizing the impacts of flood loss, and restoring the natural and beneficial functions of floodplains. This order was issued in furtherance of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. Floodplains and flood hazard zones are generally present throughout MCB Camp Lejeune near the New River and its creeks and estuaries.

The 100-year floodplain for Beaverdam and Bearhead Creeks extend southeastward into the Wallace Creek Regimental Project Area. Approximately 32 ha (80 ac) of floodplains are present in the project area (Figure 3-3).

3.9.4 Vegetation

Camp Lejeune encompasses approximately 37,352 ha (92,300 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. All forested land is managed by the Base's Forest Management Program. The Forest Management Program staff is responsible for all timber harvests associated with timber management and construction projects involving the removal of merchantable timber. The Base contributes 40 percent of the net proceeds from the sale of timber products to the Onslow County Schools System in accordance with 10 US Code 2665. However, the Forest Management Program does not have net proceeds every year. Fire also plays a deciding role in the vegetation communities of Camp Lejeune, affecting canopy and understory density and species composition.

Generally speaking, upland areas within the proposed project area are characterized by highly productive pine and mixed pine/hardwood forests. The most common tree species in this area are loblolly pine (*Pinus taeda*), white oak (*Quercus alba*), tulip poplar (*Liriodendron tulipifera*), and sweetgum (*Liquidambar styraciflua*). In the shrub layer American holly (*Ilex opaca*), redbay (*Persea borbonia*), and sweetgum (*Liquidambar styraciflua*) are present. Common herbaceous species of the upland area include western brackenfern (*Pteridium aquilorum*) and longleaf woodoats (*Chasmanthium sessiliflorum*). Wetland areas throughout the Wallace Creek area contain dominant tree species of sweetgum (*Liquidambar styraciflua*), black gum (*Nyssa sylvatica*), red maple (*Acer rubrum*), and pond pine (*Pinus serotina*). Shrub layer primarily consists of waxmyrtle (*Morella cerifera*) and redbay (*Persea borbonia*). The herbaceous layer of wetlands is made up of cinnamon fern (*Osmunda cinnamomea*) and lizard's tail (*Saururus cernuus*) (MCB Camp Lejeune. November 2007).

According to these vegetative types, the communities most likely present at the upland portion of the project site include dry coniferous woodlands (loblolly/slash pine forest) with their pocosin shrubs, loblolly pines, and sweetgum populations. The wetland portion of the project site includes vegetation indicative of coastal plain riverine aquatic communities and small wetland communities.

3.9.5 Wildlife

Wildlife at Camp Lejeune is typical of that found in the southeastern Coastal Plain of North Carolina. Mammals commonly found in forested habitat include white-tailed deer (*Odocoileus virginianus*), eastern gray squirrel (*Sciurus carolinensis*), opossum (*Didelphis virginiana*), southern flying squirrel (*Glaucomys volans*), and raccoon (*Procyon lotor*). The forested habitat within the project area ranges in age from approximately 50 to 100 years and is contiguous with

other forested areas on Base. Many reptiles and amphibians, from the diminutive pine wood snake (*Rhadinaea flavilata*) to the oak toad (*Bufo quercicus*), are abundant throughout the Base.

Birds common to the area include mourning dove (*Zenaida macroura*), northern bobwhite quail (*Colinus virginianus*), mockingbird (*Mimus polyglottos*), American robin (*Turdus migratorius*), catbird (*Dumetella carolinensis*), and various sparrows (*Fringillidae*) and warblers (*Parulidae*). Pairs of osprey (*Pandion haliaetus*) occupy nests scattered along the shores of the New River and its larger tributaries.

A multi-species scientific management strategy is used to maintain habitat requirements for several game and non-game species within Camp Lejeune. Game species include eastern wild turkey (*Meleagris gallopavo*), white-tailed deer (*Odocoileus virginianus*), black bear (*Ursus americanus*), fox squirrel (*Sciurus niger*), western gray squirrel (*Sciurus griseus*), bobwhite quail (*Colinus virginianus*), eastern cottontail (*Sylvilagus floridanus*), raccoon (*Procyon lotor*), wood duck (*Aix sponsa*), largemouth bass (*Micropterus salmoides*), bluegill (*Lepomis macrochirus*), red-ear sunfish (*Lepomis miniatus*), and channel catfish (*Ictalurus punctatus*). Non-game species management is focused on eastern bluebird (*Sialia sialis*), purple martin (*Progne subis*), least tern (*Sterna antillarum*), various neo-tropical migrant birds, and a variety of reptiles and amphibians (USMC, November 2001).

The Migratory Bird Treaty Act (MBTA) of 1918 was enacted to conserve migratory birds. The MBTA prohibits the taking, killing, or possessing of migratory birds unless permitted by regulation.

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

- 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
- Assess and document through the project planning process, using NEPA when applicable, the effect of the proposed action on species of concern
- Engage in early planning and scoping with the USFWS relative to potential impacts of a proposed action to proactively address migratory bird conservation, and to initiate appropriate actions to avoid or minimize the take of migratory birds

The Memorandum of Understanding points to several regional reports and plans to identify species of concern. MCB Camp Lejeune biologists have compiled these reports and used them to prepare a list of the species of concern that could potentially occupy the habitat in the area of the

proposed action. This list is provided in Appendix B. Chapter 4 of this EA provides an assessment of the likelihood of population level effects on these species.

3.9.6 Threatened and Endangered Species

The Endangered Species Act of 1973 and subsequent amendments provide for the conservation of threatened and endangered species of animals and plants, and the habitats in which they are found. The Endangered Species Act prohibits jeopardizing endangered and threatened species or adversely modifying critical habitats essential to their survival. Section 7 of the act requires consultation with the National Marine Fisheries Service and USFWS to determine whether any endangered or threatened species under their jurisdiction may be affected by the proposed action (USMC, January 2008). The Marine Corps ensures that consultations are conducted as required with USFWS 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 (USMC, January 2008).

Camp Lejeune is home to seven federally listed threatened and endangered species. Camp Lejeune’s threatened and endangered species program focuses on protection, management, and monitoring of the federally listed species found at the Base and listed in Table 3.9-3 (USMC, January 2007). None of the listed species are known to occur within the proposed project area. Furthermore, there is no designated critical habitat on MCB Camp Lejeune.

Table 3.9-2
Federal Threatened and Endangered Species – MCB Camp Lejeune

Common Name	Scientific Name	Status
Leatherback sea turtle	<i>Dermochelys coriacea</i>	Endangered
Loggerhead sea turtle	<i>Caretta caretta</i>	Threatened
Green sea turtle	<i>Chelonia mydas</i>	Threatened
Piping plover	<i>Charadrius melodus</i>	Threatened
Red-Cockaded woodpecker	<i>Picoides borealis</i>	Endangered
Seabeach amaranth	<i>Amaranthus pumila</i>	Threatened
Rough-leaved loosestrife	<i>Lysimachia asperulaefolia</i>	Endangered
Source: USMC, January 2007.		

Camp Lejeune currently supports 84 active red-cockaded woodpecker (RCW) clusters (USMC, January 2007). The *2006 RCW Camp Lejeune Recovery Plan* was developed to manage and direct continuing RCW growth on the Base. Camp Lejeune will maintain an established recovery goal of 173 RCW clusters. The nearest RCW cluster is located 2.6 km (1.6 mi) away from the project area.

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. There are no known rough-leaved loosestrife plants within the proposed project area.

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 (USMC, November 2001). The location of this bald eagle nest is over 10.5 km (6.5 mi) from the proposed project area. This is well outside the outermost protective buffer in which activity restrictions apply. Bald eagles would be expected to fish along the New River (USMC, January 2008). The USFWS recently removed the Bald eagle from the Endangered Species List. Bald eagles will continue to be protected by the Bald and Golden Eagle Protection Act and the MBTA.

Besides those species listed in Table 3.9-3, coastal goldenrod (*Solidago villosicarpa*) is a federal species of concern and is therefore considered a species at risk. A pilot program has been initiated by DoD, in cooperation with the USFWS and North Carolina state agencies, to proactively manage species at risk on military bases reducing the need to list those species. Coastal goldenrod is being monitored and managed at Camp Lejeune as a project under this program. A field survey conducted from November 29 through December 4, 2007 concluded that there are no known coastal goldenrod plants within the proposed project area (Ten Brink, January 2008).

3.10 HAZARDOUS MATERIALS AND WASTE

3.10.1 Hazardous Materials and Waste Management

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

The various departments and divisions within MCB Camp Lejeune generally order hazardous materials through the supply system. Purchases of hazardous materials not available from the

supply system can be obtained through outside vendors after it has been approved by the Authorized Users Lists Committee prior to purchase by government credit card. Implementation of the Hazardous Materials Management System has helped reduce the amount of hazardous materials purchased. Excess or shelf-life expired hazardous materials are brought to Environmental Management Department's Resource Conservation and Recovery Section for characterization. These materials are recycled if possible, or disposed of, mostly through the Defense Reutilization and Marketing Office. The Defense Reutilization and Marketing Office disposes of hazardous wastes via shipment to a licensed treatment, storage and disposal facility (Hamilton, January 2008).

A pesticide control shop (Solid Waste Management Unit [SWMU]-43) is located within the proposed project area (Figure 3-4, Contaminated Sites at Wallace Creek Regimental Area). Various pesticides are stored at this facility for use at several locations on the base. SWMU-43 has undergone a Resource Conservation and Recovery Act (RCRA) Facility Investigation (July 2006). Approximately 52 tons of soil impacted by chlorinated pesticides was removed by the Base Remedial Action Contract, as part of the Interim Measures at SWMU 43 in June 2007.

3.10.2 Contaminated Sites

As shown in Figure 3-4, three installation restoration (IR) sites, IR Site 19 – Former Naval Research Lab Dump, IR Site 20 – Former Naval Research Lab Incinerator, IR Site 25 - Former Base Incinerator, as well as ASR Site 2.82 - Active Base Skeet Range and ASR Site 2.78 - Former Practice Hand Grenade Range, are located within the project area. Below is a brief description of each site location, the period of operation, and the results of a recent focused site investigation that was completed within the project area. The focused site investigation was conducted between June and September 2007 at the Wallace Creek Regimental Area by NAVFAC Mid-Atlantic in an effort to determine the potential presence or absence of munitions and explosives of concern and hazardous and toxic waste within the project area and to determine subsequent human health risks (NAVFAC Mid-Atlantic, February 2008). The investigation assessed all of the sites discussed herein.

IR Site 19 – Former Naval Research Lab Dump

IR Site 19 is located off of Parachute Tower Road near the far northwest corner of the active base skeet range fan and encompasses approximately 0.8 to 1.2 ha (2 to 3 ac). The dump operated during the period 1956-1960 and was associated with the former Navy Medical Facility Research Laboratory (Building PT-37) (Figure 3-4). Materials that were disposed of at the facility included radioactive dosed animals (iodine-131), empty tanks, and scrap metal. The boundary of IR Site 19 also encompasses SWMU 43 (Pesticide Control Shop). Underground storage tank (UST) – PT37 is also located near IR Site 19 and in front of the Building PT37 (Figure 3-4).

According to a Naval Energy and Environmental Support Activity letter dated May 22, 1981, beta buttons containing strontium-90, animal remains dosed with strontium-90, as well as soil impacted by strontium-90 (approximately 160 pounds) were removed from a disposal pit area northwest of the Naval Research Lab area/Pesticide Control Shop. Samples were analyzed for strontium-90 and cesium-137. No further action was recommended for this dump in the RCRA Facility Assessment Report. However, the Naval Energy and Environmental Support Activity letter of May 22, 1981 also stated that personnel interviews generated concern that “[r]adioactive material may be present in a man-made pit located in the hazardous material dump site.” The Naval Research Lab also used iodine-131 in metabolic studies according to the Initial Assessment Study (NAVFAC Mid-Atlantic, February 2008).

On May 30, 2007, Naval Sea Systems Command Detachment, Radiological Affairs Support Office (RASO) was contacted by Naval Facilities Engineering Service Center concerning the Naval Energy and Environmental Support Activity letter of May 22, 1981. RASO, in June 2007, determined that no comprehensive follow-on report was ever issued following the Naval Energy and Environmental Support Activity letter of May 22, 1981 (NAVFAC Mid-Atlantic, February 2008).

Naval Sea Systems Command Detachment RASO and a contractor from New World Technology then visited MCB Camp Lejeune from July 23 to 25, 2007 to evaluate several sites associated with the former Navy Medical Facility Research Laboratory. During the site visit, radiological instrument measurements were taken at the Insect Vector Compound (Buildings PT-37 and PT-38), and designated burial site in the northwest corner of the Insect Vector Compound. Concrete samples were taken from the concrete pad adjacent to Building PT-37 and the Building PT-38 concrete pad (old incinerator). Soil samples were taken at the surface and at a 4-ft depth in the northwest corner of the Insect Vector Compound. The concrete and soil samples were analyzed by a certified laboratory for strontium-90. Radioactivity was not detected above natural background levels (NAVFAC Mid-Atlantic, February 2008).

Based on historical information and previous and recent radiological survey and sampling results, Naval Sea Systems Command Detachment RASO concluded there is no radiation exposure hazard for personnel working in the areas discussed in the previous paragraph. However, additional investigation for potential radioactive material was recommended by Naval Sea Systems Command Detachment RASO in the area as shown in Figure 3-4. A radiological investigation to be performed by Naval Sea Systems Command Detachment RASO and their associated contractors is programmed for FY2008.

Soil and groundwater at IR Site 19 were also sampled and analyzed for a range of constituents as part of the recent focused site investigation. For construction support purposes, a preliminary human health risk screening was conducted by comparing the maximum concentrations of detected constituents to USEPA Region IX Industrial Preliminary Remediation Goals (PRGs) for soil samples and to North Carolina Groundwater Quality Standards for groundwater samples.

Results indicated that arsenic concentrations exceeded Industrial PRGs at three surface soil locations. Since organic arsenic compounds have been used as pesticides, the area of arsenic impact on the north side of Building PT-37 may be associated with the past site operations of the pesticide shop (NAVFAC Mid-Atlantic, February 2008).

The SWMU 43 RCRA Facility Investigation (July 2006) also included a human health risk assessment that contained an evaluation of arsenic in soils. The maximum arsenic concentration reported in the surface soils at IR Site 19 during the 2007 investigation was less than the maximum concentration as well as the 95% Upper Confidence Level reported during the SWMU 43 RCRA Facility Investigation.

Based upon comparison with historical data from SWMU 43 and the human health risk assessment, the arsenic levels reported within the vicinity of IR Site 19 as a result of the investigation were determined to be within acceptable risk. However, it was recommended that a human health risk assessment be conducted on the data collected at IR Site 19 in order to confirm this data evaluation for arsenic. No impacts to subsurface soils and shallow groundwater (site-related) were reported (NAVFAC Mid-Atlantic, February 2008).

IR Site 20 – Former Naval Research Lab Incinerator

IR Site 20 is located southeast of IR Site 19 and encompasses approximately 0.2 ha (0.5 ac). The Former Naval Research Lab Incinerator operated during the period 1956-1960. Materials that were disposed of at the facility included ash and debris from the research lab. No Further Action was recommended for this facility in the 1996 RCRA Facility Assessment Report.

IR Site 20 was also investigated as part of the recent focused site investigation. Soil and groundwater at the IR Site 20 was sampled and analyzed for a range of constituents. Results of the sampling indicated that arsenic concentrations exceeded Industrial PRGs at four surface soil locations. Since organic arsenic compounds have been used as pesticides, the area of arsenic impact on the south side of Building PT-38 may be associated with the past site operations of the pesticide shop (NAVFAC Mid-Atlantic, February 2008).

When compared to the results of the SWMU RCRA Facility Investigation and subsequent human health risk assessment, the maximum arsenic concentration reported in the surface soils at IR Site 20 was less than the maximum concentration reported at SWMU 43 and only slightly more than the 95% Upper Confidence Level. Based upon comparison with historical data from SWMU 43 and the previous risk assessment, the arsenic levels reported within the vicinity of IR Site 20 as a result of the site investigation were determined to be within acceptable risk. However, it was recommended that a human health risk assessment be conducted on the data collected at IR Site 20 in order to confirm this data evaluation for arsenic (NAVFAC Mid-Atlantic, February 2008).

An elevated detection of trichloroethene was reported in the duplicate sample from one of the soil surface locations; however, it may have been an anomaly or an isolated sampling. It was

recommended that a confirmatory sampling be conducted in the area around this location to confirm if the trichloroethene concentrations in the surface soils are within an acceptable risk. No impacts to shallow groundwater (site-related) were reported (NAVFAC Mid-Atlantic, February 2008).

IR Site 25 - Former Base Incinerator

IR Site 25 is located off of McHugh Boulevard south of Wallace Creek and on the west side of the project area. The site encompasses approximately 0.2 ha (0.5 ac). The Former Base Incinerator operated during the period 1940-1960. Materials that were disposed of at the facility included burned trash and melted glass. No further action was recommended for this facility in the 1996 RCRA Facility Assessment Report; however, no prior environmental sampling had been conducted at the site.

Soil and groundwater was sampled at IR Site 25 during the recent site investigation. Results show that arsenic concentrations exceeded industrial PRGs at two surface soil locations and two subsurface soil locations. Since trace levels of pesticides were reported in the soils at IR Site 25, the area of arsenic impact may be associated with the past pesticide use within the vicinity of the former incinerator. Since the incinerator operated before the promulgation of environmental regulations it is possible that pesticide disposal activities also occurred in this area. The site investigation report recommended that a human health risk assessment be conducted on the data collected at IR Site 25 in order to evaluate if the arsenic concentrations are within an acceptable risk. No impacts to shallow groundwater (site-related) were reported (NAVFAC Mid-Atlantic, February 2008).

ASR Site 2.82 - Active Base Skeet Range

The Active Base Skeet Range is located off of Parachute Tower Road and in the central part of the proposed project area. The skeet range site encompasses approximately 60.3 ha (149 ac). Materials potentially present in the surface soils at the site include small-arms munitions constituents such as lead shot. Limited soil sampling in the vicinity of the Skeet Range was conducted in 2001 during an Area of Concern Background Study. The results of the study indicated the presence of lead in surface soils. In addition, soil and groundwater sampling were conducted at the UST-PT5 (SWMU 164) located immediately southeast of the range shooting points and Parachute Tower Road. Soils collected during the UST-PT5 investigation indicated the presence of Total Petroleum Hydrocarbons and Total Benzene, Toluene, Ethylbenzene, and Xylenes in groundwater. These results indicate that UST-PT5 is leaking (NAVFAC Mid-Atlantic, February 2008).

Results of the recent site investigation indicated that lead concentrations exceeded Industrial PRGs at nine surface soil locations and two shallow groundwater locations. The area of lead impact was generally within shot-fall region of the range, approximately 4.8 ha (11.8 ac). Additional sampling of surface soils and groundwater and a risk assessment were recommended

to address this area of elevated lead concentrations. There were no lead exceedances reported in subsurface soils (NAVFAC Mid-Atlantic, February 2008).

ASR Site 2.78 - Former Practice Hand Grenade Range

The Former Practice Hand Grenade Range (Site unexploded ordnance-03), is located off Birch Street and McHugh Boulevard. Only the northern portion of the site is within the proposed project area. This area is approximately 2 ha (5 ac). No prior sampling has occurred in the vicinity of this site. Potential hazards at this site include munitions and explosives of concern and munitions constituents (NAVFAC Mid-Atlantic, February 2008).

Results of the recent site investigation show no exceedances of Industrial PRGs in surface and subsurface soils. In addition, 17 total metals and 15 dissolved metals were detected in the shallow groundwater; however, none exceeded the North Carolina Groundwater Quality Standards (NAVFAC Mid-Atlantic, February 2008). An anomaly investigation to determine if unexploded ordnance exists at the site is programmed for FY2008.

4 ENVIRONMENTAL CONSEQUENCES

This chapter presents an analysis of the potential impacts upon various components of the environment that could result from the proposed action. The proposed action consists of the construction, operation, and maintenance of a four-battalion regimental complex at the Wallace Creek Regimental Area and associated influx of personnel at MCB Camp Lejeune, North Carolina. Following a format similar to Chapter 3, Chapter 4 discusses the No Action Alternative and the proposed action.

4.1 LAND USE AND COASTAL ZONE MANAGEMENT

4.1.1 Land Use

No Action Alternative

Impacts to land use would not occur under the No Action Alternative because land use patterns would not change. If the No Action Alternative were to be implemented, facilities supporting the two new infantry battalions and Regimental Headquarters would not be constructed. Other physical facilities at Camp Lejeune would remain, in the near term, the same as they are today.

Proposed Action

Construction projects associated with the Wallace Creek Regimental Area would total approximately 177,421 sq m (1,909,744 sq ft). Many of the new facilities would be multistory buildings (e.g., BEQs); therefore, the area of the footprint that the facilities would cover is smaller than the total building space. The footprint of the new facilities would be approximately 80,728 sq m (868,949 sq ft). Development of facilities would take place on roughly 122 ha (302 ac) of the entire 223 ha (551 ac) project area.

New paved parking lots would cover approximately 24 ha (59 ac). New paved roadways would be roughly 2.9 km (1.8 mi) in length and would cover approximately 4 ha (9.8 ac). The Birch Street road widening would total 1.3 km (0.8 mi) in length and would cover approximately 2 ha (5 ac). Sidewalks around each building would cover about 9,384 sq m (101,009 sq ft). Proposed stormwater ponds would be about 3 ha (7 ac) in size.

The land use classification would essentially remain the same: operational and training facilities. However, construction of facilities, infrastructure, and utilities would result in a change to the project area from mixed forest to developed areas. Some existing facilities would need to be demolished in order to make room for the proposed facilities. These include the pesticide storage facility and associated structures, military working dog kennels, and recreational skeet range. Camp Lejeune has recently identified new locations for the military working dog kennels and the skeet range that are outside of the proposed Wallace Creek project area.

4.1.2 Coastal Zone Management

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

The proposed action was reviewed to determine its consistency with the applicable requirements of the North Carolina Coastal Area Management Act (CAMA). As detailed in the Coastal Consistency Determination in Appendix C, the proposed action is not located in an Area of Environmental Concern (AEC).

The following is an analysis of the applicability of the CAMA AEC policies to the proposed action and the action's consistency with those policies, when applicable.

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

The Wallace Creek project area includes three types of wetlands: estuarine, riverine, and palustrine. The majority of wetlands in the project area are palustrine forested wetlands along the floodplain of Wallace Creek and in association with stream tributaries of Bearhead Creek and Beaverdam Creek. Estuarine wetlands are found in proximity to Wallace Creek, while riverine wetlands are in the upper reaches of Beaverdam Creek. Under the proposed action, estuarine wetlands would be avoided, and mitigation for palustrine wetlands would be implemented as required by wetland permit requirements.

The proposed action would impact 0.09 ha (0.22 ac) of wetlands. MCB Camp Lejeune would obtain the necessary permits prior to construction and would implement mitigations as required by the permit conditions. Wetland and stream impacts would be limited to a road crossing and the intent is to design the crossing to meet conditions of Nationwide Permit 14, not to exceed 0.2 ha (0.5 ac) of wetland fill and 45.7 linear meters (150 linear feet) of stream impact. MCB Camp Lejeune has not developed the specific design and mitigation plan. However, land within the project area 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 Department of Defense lands (including the Greater Sandy Run Wetland Mitigation Bank on Camp Lejeune) and lands of other entities would be considered for mitigation purposes when consistent with the US Environmental Protection Agency, US Army Corps of Engineer, North Carolina Division of Water Quality guidelines, and/or permit provisions.

The upper reaches of Wallace Creek, Bearhead Creek, Beaverdam Creek and their tributaries are inland waters. The lower reaches of Wallace Creek are estuarine. 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. Therefore, these policies are not applicable to the proposed action.

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

The project area for the proposed action is not within an ocean hazard area. Therefore, policies on ocean hazard areas are not applicable.

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

The construction of the proposed facilities would not affect areas where there are small surface water supply watersheds or public water supply well fields. Therefore, policies protecting public water supplies are not applicable.

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

15A NCAC 07H.0505 (Coastal Areas That Sustain Remnant Species). There are no federally-listed threatened or endangered species that are located within the project area. However, the proposed project would require the clearing of approximately 64 ha (158 ac) of mixed pine-hardwood forest. This policy is not applicable.

15A NCAC 07H.0506 (Coastal Complex Natural Areas). Camp Lejeune has two designated natural areas: the CF Russell Longleaf Pine Natural Area and the Wallace Creek Natural Area. Both have been designated and registered as natural areas by the North Carolina Natural Heritage Program. However, both are located well beyond the project limits of the project area. This policy is not applicable.

15A NCAC 07H.0507 (Unique Coastal Geologic Formations). No unique geological formations are located within the proposed project area. This policy is not applicable.

15A NCAC 07H.0508 (Use Standards). There are no fragile coastal natural or cultural resources within the project area. Implementing the proposed action would not cause irreversible damage to natural systems or cultural resources, scientific, educational, or associative values, or aesthetic qualities. This policy is not applicable.

15A NCAC 07H.0509 (Significant Coastal Archaeological Resources). Three potentially eligible archaeological sites were identified within the boundaries of the proposed project area: 31ON1059, 31ON1077, and 31ON1132. Results of the Phase II field survey indicate that all three sites do not meet the National Register of Historic Places criteria for eligibility. MCB Camp Lejeune has requested concurrence that implementation of the proposed action would not affect any National Register of Historic Places-eligible archaeological sites. This policy is not applicable.

15A NCAC 07H.0510 (Significant Coastal Historic Architectural Resources). The Parachute Training Historic District and its three contributing resources, PT-4, PT-5, and PT-6, would all remain intact and protected by a 15.2 m (50 ft) buffer. The project is consistent with this policy.

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

The proposed action was analyzed to determine the applicability of the CAMA's General Policy Guidelines and the action's consistency, when applicable. As detailed in the Coastal Consistency Determination in Appendix C, three of the eleven policies are applicable to the proposed action. Consistency with these applicable policies is addressed as follows:

15A NCAC 07M.0500 (Post-Disaster Policies)

These policies require that all state agencies prepare for disasters and coordinate their activities in the event of a coastal disaster. MCB, Camp Lejeune, Base Order P3440.6E, Destructive Weather, addresses how MCB Camp Lejeune would prepare for potential disasters and would respond in the event of a disaster, including coordination with North Carolina emergency services. The proposed action is consistent with these policies.

15A NCAC 07M.0700 (Mitigation Policy)

North Carolina's mitigation policy states that "Coastal ecosystems shall be protected and maintained as complete and functional systems by mitigating the adverse impacts of development as much as feasible, by enhancing, creating, or restoring areas with the goal of improving or maintaining ecosystem function and areal proportion." Impacts would 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 forest habitat and wildlife losses due to development of this site. 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 1,546 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 dollars 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.

Based on the conceptual plan for the layout of regimental facilities at Wallace Creek, the proposed action has the potential to adversely impact jurisdictional wetlands and waters of the US at MCB Camp Lejeune. The proposed action would impact approximately 0.09 ha (0.22 ac) of jurisdictional wetlands in the Wallace Creek Regimental Area. Other wetlands are present along the site boundary. 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.

The proposed project would be designed to avoid impacts to wetlands and waters of the US. 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 Department of Defense lands (including the Greater Sandy Run Wetland Mitigation Bank on Camp Lejeune) and lands of other entities would be considered for mitigation purposes when consistent with the US Environmental Protection Agency, US Army Corps of Engineer, 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. These permits would include the Clean Water Act, Section 404 wetland permit from the US Army Corps of Engineers (Nationwide or Individual Permit depending on the quantity of wetlands and waters of the US affected) and the Clean Water Act, Section 401 Water Quality Certification from the North Carolina Department of Environment and Natural Resources, Division of Water Quality.

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.

Chapter 11 of Marine Corps Order P5090.2A, Change 1 (USMC, January 2008), requires the use of native plants in landscaping. Native plant species would be used for landscaping to the extent practicable. No non-native, invasive vegetation would be used in any temporary or permanent landscaping.

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.

Other permits and approvals for the proposed action include:

- Erosion and Sedimentation Control Plan approval by North Carolina Department of the Environment and Natural Resources, Division of Land Resources, Land Quality Section
- Stormwater Management Permit from the North Carolina Department of Environment and Natural Resources, Division of Water Quality
- Non-Discharge Sewer Extension Permit from the North Carolina Department of Environment and Natural Resources, Division of Water Quality, Non-Discharge Branch
- Water Connection Permit from the North Carolina Department of Environment and Natural Resources, Public Water Supply Section
- Clean Air Act, Title V Construction and Operation Permit from the North Carolina Department of Environment and Natural Resources, Division of Air Quality
- Concurrence from the NC SHPO on cultural resources effects findings

The proposed action would be consistent with this policy.

15A NCAC 07M.0800 (Coastal Water Quality Policies)

Stormwater runoff would be managed and controlled in accordance with State-approved sedimentation/erosion and control plans and stormwater permits. These permits are issued by the NCDENR and reflect the most up-to-date requirements outlined in the State's Best Management Manual. In addition, since MCB Camp Lejeune is located in Onslow County which is considered a Phase II Coastal County, the Base must follow the requirements that are found in stormwater requirements 15A NCAC 02H.1005.

MCB Camp Lejeune is currently covered under a Phase I NPDES stormwater permit. This permit required the Base to develop and implement a Stormwater Pollution Prevention Plan which recommends measures to minimize pollutants from entering stormwater runoff from Base industrial activities.

Under the NPDES 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 and landscaping in select areas. This vegetation would aid in the control of stormwater runoff and to assure effective and continuous control of erosion and pollution.

As a result, the proposed action is not expected to impair coastal water quality. The project would not be located in primary or secondary nursery areas. Implementation of the proposed action would be consistent with coastal water quality policies.

The Marine Corps, through the Coastal Consistency Determination process, has determined that implementing the proposed action would be fully consistent with the applicable policies of the North Carolina Coastal Management Act. The North Carolina Division of Coastal Management concurred with this determination (see Appendix C).

4.2 SOCIOECONOMICS

Socioeconomics encompass population, income and employment, and housing. Impacts on these fundamental socioeconomic resources can also influence other components such as public services provisions.

4.2.1 Demographics

No Action Alternative

Under the No Action Alternative, the Wallace Creek Regimental Area would not be constructed and existing personnel levels at Camp Lejeune would remain the same. Therefore, there would be no impact on demographics.

Proposed Action

By 2010, when the proposed action is fully implemented, there would be a net gain to Camp Lejeune of approximately 2,100 military personnel. This would represent about a 5 percent increase from the existing 42,241 active duty personnel at Camp Lejeune. The incoming personnel would include approximately 115 officers and 1,985 enlisted personnel (Padgett, December 2006). Using factors provided by the Marine Corps, there would be approximately 82 married officers accompanied by approximately 212 dependents. Of the enlisted personnel, about 834 would be married and would be accompanied by about 1,751 dependents. There would be approximately 1,963 dependents associated with the proposed action (Brewer, September 2007).

The total incoming population of about 4,063 persons, comprising the new MCB Camp Lejeune personnel and their dependents, would be new to the region, or in-migrants. This population gain would potentially be realized in Onslow, Carteret, and Pender Counties. The population gain would represent a 1.5 percent increase in the existing tri-county region population (of 262,887 in 2006).

An estimated 787 of the 1,963 dependents associated with incoming personnel would be school-age children. Impacts of the added number of school-age children in the local school systems are discussed below, in Subchapter 4.3.3.

4.2.2 Income and Employment

No Action Alternative

Under the No Action Alternative, the Wallace Creek Regimental Area would not be constructed and existing personnel levels at Camp Lejeune would remain the same. Therefore, there would be no impact on income and employment.

Proposed Action

Under the proposed action, approximately 2,100 new military positions would be created at Camp Lejeune. These jobs would represent about one percent of the overall tri-county labor force (149,311 in 2005, see Subchapter 3.2.2). Based on average Marine Corps basic pay rates by grade for FY 2007, these new jobs would produce approximately \$64 million in annual payroll (assuming all positions created in FY 2007) (USMC, December 2007). The average pay for the personnel would be about \$30,449, which is approximately \$5,689 higher than the average annual pay in the tri-county ROI (\$24,760 in 2005, see Table 3.2-6).

An economic model, IMPLAN Pro, was used to estimate the gain associated with the long-term influx of 2,100 personnel and short-term construction expenditures associated with the proposed action (IMPLAN, 2007). The IMPLAN Pro model is based on regional information derived from data bases of federal agencies, such as the U.S. Bureau of Economic Analysis. The model was constructed to include Onslow, Carteret, and Pender counties. Because 2004 is the most recent data available for these counties, the output data is in 2004 dollars (but is adjusted for the timeline for implementation of the proposed action). The IMPLAN Pro econometric model operates by estimating the direct impact, indirect impacts, and induced impacts of specific economic activity. Direct effects relate to the initial economic activity, in this case the predicted influx of personnel and expenditure of dollars for new construction. An indirect effect is the inter-industry effects predicted in response to the Marine Corps' expenditures (i.e., construction contractor's expenditures in the local economy on such things as supplies, food, furnishings, and other merchandise and various services). An induced effect is a change in household spending in response to the Marine Corps' expenditures.

The modeled long-term direct impact of the influx of 2,100 federal Department of Defense personnel in the region would be \$129.9 million annually (2004 dollars, including payroll, benefits, and other forms of compensation). The induced impact would add another \$59.6 million annually (2004 dollars) from spending and recirculation of disposable income in a multitude of sectors such as real estate/housing, general merchandise and retail stores, and

service industries such as food, vehicle maintenance, banking, etc. An estimated 747 average annual full- and part-time jobs with a combined income of \$17.0 million (2004 dollars, wage and salary) would be supported by the induced impact. An additional \$15 million (2004 dollars) in property type income (i.e., payments from interest, rents, royalties, dividends, and profits) and \$4.7 million (2004 dollars) would be realized in indirect business taxes annually. (The model was run as if the influx of all personnel would occur in 2008.)

Additional residents in the local community would correspondingly increase the demand for community services and facilities, which would increase the need for government expenditures. The influx of personnel would have a positive impact on the generation of tax revenues for the tri-county ROI. The total estimated annual federal government tax impact is estimated at \$24.0 million and the state and local government tax impact is estimated at \$10.3 million. Additional tax impacts would occur during the construction phase.

The estimated \$716.7 million in expenditures for the 21 proposed MILCON projects was modeled with adjustments made for the timeline for implementation of these projects (fiscal years 2007 through 2010) and to express the expenditures in 2004 dollars (for a total of \$659.4 million in direct expenditures). The results of the modeling, shown in Table 4.2-1, indicate that the total short-term regional economic impact of the construction activity would be \$913.8 million in expenditures supporting an estimated total of 12,866 full- and part-time jobs. In addition, the total value added would be \$467.9 million in payments to factors of production/gross regional product to include labor income (employee compensation plus proprietor's income), other property type income (rent, dividends, interest, profits), and indirect business taxes (taxes collected by businesses on behalf of government). The employee compensation, at \$348.9 million, would account for approximately three quarters of the total value added. The construction activity would result in a gain of an estimated \$59.2 million in federal government taxes and \$37.6 million in state and local government taxes.

Table 4.2-1

Regional Economic Impact Resulting from MILCON Projects (2004 dollars)

	Total Industry Output (\$000)	Employment	Total Value Added (\$000)
Direct Effects	659,379.0	9,678.0	319,202.7
Indirect Effects	105,009.8	1,415.1	56,188.7
Induced Effects	149,373.1	1,872.3	92,474.4
Total Effects	913,761.9	12,965.5	467,865.8
Source: IMPLAN Professional Version 2.0, Copyright 1999-2007.			

Once the funds are used for construction of the four-battalion regimental complex in the Wallace Creek area, these dollars would no longer be circulating through the regional economy (i.e., due to leakages such as savings, payment of taxes, or purchases of goods and services outside the region) and the economic gains would no longer be realized.

The indirect and induced impacts would be realized in a variety of economic sectors, particularly utilities, architectural and engineering services, wholesale trade, truck transportation, construction materials, merchandise stores/retailers, real estate, health care, food and drinking establishment, and other stores and services.

4.2.3 Housing

No Action Alternative

Existing housing conditions would not change under the No Action Alternative. The Wallace Creek Regimental Area would not be constructed and existing personnel levels at Camp Lejeune would remain the same. Thus, no impacts to housing would occur.

Proposed Action

Under the proposed action, the gain of approximately 4,063 persons, including military personnel and dependents, would generate a commensurate requirement for housing. The proposed action would construct 27 BEQs to meet the need for housing single enlisted personnel. For this analysis, it is assumed that all of the single enlisted personnel (1,151) would reside on base. Of the rest of the military personnel (949), using data provided by MCB Camp Lejeune, under a worst case scenario, approximately 90 percent (854) would live off base with their dependents (1,767) (MCB Camp Lejeune, October 2006b). Although Camp Lejeune has been addressing the military housing shortfall through Public Private Venture housing initiatives, housing requirements that could not be accommodated by military housing would result in housing demand within the tri-county ROI.

Under these assumptions, at least 854 units of off-base housing would be needed in the ROI. The vacancy rates for area housing (17.4 percent for the tri-county area, see Table 3.2-7) indicate that the community housing market could meet this demand. Furthermore, private entities in the community could respond to an increased demand in housing by 2010, when the proposed action would be fully implemented. Military personnel residing in community housing receive Basic Allowance for Housing in addition to basic pay. For personnel with dependents, these range from a low of \$815 per month for a Private First Class (E2) to a high of \$1,472 per month for a Brigadier General (O7) and above (DoD, April 2007). Overall, impacts to housing conditions would be expected to be minor and would resolve as the private housing market adjusts.

4.2.4 Environmental Justice

No Action Alternative

Implementation of the No Action Alternative would maintain the status quo at Camp Lejeune. No changes would occur that would affect minority populations, low-income populations, or children. Thus, no impacts to environmental justice issues would occur under the No Action Alternative.

Proposed Action

As evaluated in accordance with Executive Orders 12898 and 13045, 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 Camp Lejeune or in Onslow County. This includes minorities, low-income populations, and children. As a result, the proposed action would not result in impacts to minority populations, low-income populations, and children.

4.3 COMMUNITY FACILITIES AND SERVICES

4.3.1 Emergency Services

No Action Alternative

Under the No Action Alternative, demands on existing emergency services are expected to remain the same. Camp Lejeune would continue to meet these demands. No impacts to emergency services would occur.

Proposed Action

Overall, the demand for fire protection and law enforcement would continue to be met by Camp Lejeune. Adverse impacts to emergency services in the community as a result of immigration would be minor.

4.3.2 Hospitals

No Action Alternative

Under the No Action Alternative, the demand for and provision of health care would remain the same. No impacts to Camp Lejeune or other area hospitals are expected.

Proposed Action

A medical/dental clinic would be constructed as part of the proposed action to serve the personnel working within the Wallace Creek Regimental Area. The clinic would provide primary medical and dental care, preventative medicine, acute care, and deployment health assessments. Demand for and provision of health care services would increase slightly as a result of the population gain associated with the proposed action, resulting in minor adverse impacts on area hospitals.

4.3.3 Schools

No Action Alternative

Under the No Action Alternative, the proposed action would not be implemented and existing personnel levels at Camp Lejeune would remain the same. Therefore, there would be no impact on schools.

Proposed Action

As previously mentioned, it is estimated that there would be a gain of 787 school-aged children as a result of the establishment of new positions at the Wallace Creek Regimental Area. While the Camp Lejeune Dependent School system has capacity to accommodate additional school age children, there would be increased demand for area public and private schools for those in-migrant military families that reside off-base. A conservative estimate is that 90 percent, or 708 of the in-migrant children, would attend local area schools. As indicated in Tables 3.3-1, 3.3-2, 3.3-3, membership/enrollment at schools within the ROI are operating near, at, or in excess of their capacities. The estimated increase in student population would exacerbate this situation and result in overcrowding. Affected local area school districts would receive some additional funding for the influx of federally connected students through the federal impact aid program described in Subchapter 3.3.4. However, these funds generally do not cover full per-pupil costs received through property taxes because the amount of impact aid available for dispensation by the department depends on Congressional approval. Therefore, local school districts likely would incur additional expenses associated with the projected increase in enrollment under the proposed action.

In response to high population growth rates in the area due to regional trends, as well as from growth at Camp Lejeune, Onslow County Schools has initiated a redistricting process that will serve to balance elementary school populations by moving children from overcrowded schools to ones with excess capacity. In addition, two new schools are being constructed. Meadow View Elementary School is scheduled to open in August 2008 with a capacity of 805 students and Stateside Elementary School will open in 2009 with a capacity of 800 students (Hudson, February 2008 and Hudson, June 2008). The Marine Corps is also working with the local school districts to identify ways to minimize any potential effects.

4.3.4 Recreational Facilities

No Action Alternative

Under the No Action Alternative, a Wallace Creek Regimental Area would not be constructed and existing personnel levels at Camp Lejeune would remain the same. Therefore, there would be no impact to on- or off-base recreational facilities.

Proposed Action

An indoor fitness facility would be constructed under the proposed action. The facility would provide exercise areas, space for equipment and gear storage, laundry facility, and shower and locker areas.

Under the proposed action, the recreational skeet range would be demolished. Camp Lejeune has recently identified a new location for the skeet range that is outside of the proposed Wallace Creek project area. The affected environment for this replacement facility is similar to actions being analyzed within the *Environmental Assessment for Security Gate Upgrades, Road Improvements, Landfill Expansion, and Relocation of Skeet Range, MCB Camp Lejeune, North Carolina*. Therefore, this new replacement facility has been included for impact analysis in that document.

If the proposed action were implemented, there would be no adverse impacts to on or off-base recreational facilities.

4.4 TRANSPORTATION AND TRAFFIC

No Action Alternative

The on-base transportation system would not change under the No Action Alternative. There would be no increase in transportation of goods or the number of commuters to the project area. Existing traffic conditions in the vicinity of the project area would remain the same. Thus, no impacts to traffic conditions and transportation would occur.

Proposed Action

Under the proposed action, construction-related car, truck, and other heavy vehicle traffic would increase during the construction phase at the Wallace Creek Regimental Area project area. This would cause minor short-term impacts to traffic flow that would not have a lasting effect on the Base's transportation network.

Construction of the Wallace Creek Regimental Area would alter the existing roadway network at MCB Camp Lejeune. The existing Birch Street would be widened for most of its length between the proposed fitness center (P-1160) and Holcomb Boulevard. Two new roadways would also be constructed under this alternative. One would be an access road for the Wallace

Creek Regimental Area and the other would be a loop road within the Regimental Area. The access road would connect the Wallace Creek Regimental Area with Birch Street and would be approximately 845 m (2,770 ft) long. The loop road would loop to the north from the access road and would be approximately 1,234 m (4,050 ft) long.

Once construction has been completed, daily traffic to the Wallace Creek Regimental Area project area would increase due to additional commuters. However, this increase in traffic is expected to result in a minor adverse impact because of the aforementioned roadway improvements. In addition, under a separate proposed project, security gate upgrades at Main Gate and Piney Green Gate and road improvements to Old Saw Mill Road and Piney Green Road will help reduce traffic congestion due to additional commuters.

New parking lots are also included in the proposed action to accommodate the parking demand at the Wallace Creek Regimental Area.

4.5 AIR QUALITY

No Action Alternative

Physical facilities would remain the same under the No Action Alternative. Accordingly, levels of air emissions currently generated by activities on the Base and existing air quality conditions at Camp Lejeune would remain roughly the same. Similarly, the Southern Coastal Plain Intrastate Air Quality Control Region is expected to remain in attainment for all criteria pollutants. Hence, no impacts to air quality would occur under the No Action Alternative.

Proposed Action

Long- and short-term impacts to air quality for criteria pollutants from the proposed action would be considered minor. Emission thresholds associated with the Federal CAA conformity requirements are the primary means of assessing the significance of air quality impacts and do not apply to the proposed action because the proposed project area is in attainment for all criteria pollutants listed in Table 3.5-1. Potential impacts are evaluated based on estimated direct and indirect emissions associated with the construction and operation of the Wallace Creek Regimental Area. The CAA requires that the USEPA promulgate rules to ensure that Federal actions conform to the appropriate State Implementation Plan. These rules also are only applicable to non-attainment areas, and are therefore not relevant to this proposed project since Onslow County is in attainment for all criteria pollutants. However, due to the large scale of this project, emissions estimates were calculated and are provided below. No lead containing materials or leaded gasoline would be used under the proposed action; therefore, lead emissions would be zero.

Short-Term Emissions

There would be minor and short-term impacts to air quality from the construction of the proposed Wallace Creek Regimental Area as summarized in Table 4.5-1. These impacts would be related to emissions from worker privately owned vehicles, mobile sources utilized at the site (i.e., construction vehicles and petroleum-fueled equipment) and from fugitive dust emissions. These impacts would be temporary in nature and would cease following the completion of construction activities and therefore, would not result in the proposed project area falling into non-attainment status under the CAA.

The greatest emissions would occur during the final year of construction when the largest amount of facilities are built (2010). Emissions calculations for 2007-2009 are in compliance with the most stringent emissions *de minimis* thresholds for all criteria pollutants. With the exception of PM₁₀ emissions, estimated criteria pollutant emission for 2010 would be within the *de minimis* thresholds set for marginal/moderate nonattainment areas. Particulate matter emissions would be greatly reduced and controlled using standard management practices (e.g., routine sweeping and wetting).

Table 4.5-1

Wallace Creek Short-Term Air Emission Totals - Years 2007 – 2010 (tons/year)

(Construction, Worker Commute)

Year	Volatile Organic Compounds	Carbon Monoxide	Nitrogen Oxides	Sulfur Dioxide	PM ₁₀	PM _{2.5}
2007	4.12	7.90	15.34	1.71	40.33	4.80
2008	5.78	8.00	19.43	2.24	61.66	7.23
2009	0.55	2.48	5.28	0.62	4.25	0.72
2010	21.84	28.88	74.16	8.55	522.38	56.18

Long-Term Emission

There would be minor long-term impacts to air quality as a result of privately owned vehicles of Marines commuting from areas off-base and from the operation of standard heating equipment in the newly constructed facilities. Estimated long-term annual emissions resulting from the proposed action are presented in Table 4.5-2. Long-term emissions calculations are in compliance with the most stringent emissions *de minimis* thresholds for all criteria pollutants. These emissions are considered to be minor.

Table 4.5-2

Wallace Creek Long-Term Emission Totals (tons/year)
(Commute, Air Operations)

Volatiles Organic Compounds	Carbon Monoxide	Nitrogen Oxides	Sulfur Dioxide	PM ₁₀	PM _{2.5}
2.24	24.70	7.56	0.30	0.74	0.74

4.6 NOISE

No Action Alternative

Under the No Action Alternative, existing noise conditions on the Base would remain relatively unchanged. There would be no noise impacts under the No Action Alternative.

Proposed Action

The proposed action would not include weapons firing, demolition, or aircraft noise. The noise generated by the proposed action would be associated with the construction phases of the project. Construction activities that would impact community noise levels include noise from construction equipment operating at the site and construction/delivery vehicles traveling to and from the site. Noise levels at a given receptor location would depend on the type and number of pieces of construction equipment being operated and the receptor's distance from the construction site. Small increases in noise levels along the truck routes would be expected as a result of the operation of delivery trucks and other construction vehicles. Noise impacts would vary widely, depending on the phase of construction and the specific task being undertaken. Phases of construction that would generate noise include: land clearing and excavations, foundation and capping, erection of structural steel, and construction of exterior walls. Increased noise levels would be greatest during the early stages of each construction phase, although these periods would be of relatively short duration. Under these circumstances, the noise generated would be similar to noise generated by other construction projects on the Base.

The proposed action would construct residential uses (BEQs) in a Noise Zone 2 area. Land use compatibility guidelines outlined in the MCBCL Range Compatible Use Zone state that residential use is conditionally compatible in a Noise Zone 2 if measures are taken to achieve a noise level reduction of 25dB from outside to inside. Mitigation measures such as mechanical ventilation and appropriate construction materials would be included in the design phase of the proposed project. Further, as with the existing BEQs located in Noise Zone 2 areas, the military occupants would normally be at work during the day hours when military noise sources such as weapons firing would be most active. In addition, military personnel would be expected to be

less sensitive to military noise than the general public. Therefore, construction of BEQs in a Noise Zone 2 area would result in a minor adverse impact.

4.7 INFRASTRUCTURE AND UTILITIES

4.7.1 Water Supply

No Action Alternative

Water would continue to be provided by the Hadnot Point WTP under the No Action Alternative. The demand for water would not change and no impacts to the water supply are expected.

Proposed Action

The proposed action would have no adverse impacts on water supply. The Hadnot WTP is one of the Base's largest water supply and treatment systems. The Hadnot WTP has a capacity of 19 mld (5 mgd) and an estimated average demand of 10.8 mld (2.85 mgd). Based on recently calculated water usage rates for a similarly sized project, the MARSOC Complex, it is estimated that the proposed action would generate a water demand of approximately 0.515 mld (0.136 mgd). The demand created by operation of facilities is expected to be within the available capacity of the Hadnot WTP.

Existing waterlines run along McHugh Blvd. and Birch Road and have sufficient capacity to serve the Regimental complex for domestic water requirements. Water will be fed to a new 946,353 liter (250,000 gallon) elevated water tank funded by FY'08 project P-137. Water for fire suppression shall be distributed from fire hydrants and to sprinkler systems inside of buildings.

4.7.2 Wastewater

No Action Alternative

Under the No Action Alternative, there would be no development of the Wallace Creek Regimental Area. Wastewater processing would remain unchanged and no impacts would occur.

Proposed Action

The advanced WWTP located in the French Creek area presently processes 19 mld (5 mgd). The WWTP was designed for and is permitted to discharge up to 57 mld (15 mgd). Based on similar wastewater generation rates from the MARSOC Complex, it is anticipated that the proposed action would generate approximately 0.75 mld (0.19 mgd) of wastewater (2.82 mld

[0.74 mgd] peak flow). Therefore, the WWTP could accommodate the additional wastewater generated by operation and maintenance of the proposed Wallace Creek Regimental Area. In addition, the planned wastewater system upgrades and modifications proposed by the USMC under a separate project and described in Subchapter 1.4 will further reduce the likelihood of adverse effects.

A gravity collection system will service the Wallace Creek Regimental Area. This will drain to a proposed sewer lift station that will pump to the proposed lift station adjacent to the utility corridor to the east, north of its intersection with Parachute Tower Road (described in Subchapter 1.4). The regimental complex pump station shall be sized to handle the flows from FY'08 through the final FY'10 project build-out.

4.7.3 Electricity

No Action Alternative

Under the No Action Alternative, there would be no development of the Wallace Creek Regimental Area. The demand for electricity would not change and no impacts would occur.

Proposed Action

Detailed engineering has yet to be performed, and specific electrical demands have yet to be determined; however, the demand for additional electricity at the proposed Wallace Creek Regimental Area is expected to be met without difficulty. Any adverse impacts to the supply of electricity are expected to be minor.

4.7.4 Natural Gas

No Action Alternative

Under the No Action Alternative, there would be no development of the Wallace Creek Regimental Area. Natural gas usage would remain the same and impacts would not occur.

Proposed Action

Natural gas would fuel a portion of the Wallace Creek Regimental Area buildings. The local gas company, Piedmont Natural Gas, would install, own, and operate the new branch main(s) and services to individual buildings. In general, meters would be provided at the individual buildings. Some of the small facilities may not require natural gas service. Any adverse environmental impacts from supplying natural gas are expected to be minor. Routes for natural gas service would be reviewed by the Base environmental staff when identified.

4.7.5 Solid Waste

No Action Alternative

If the No Action Alternative were to be implemented, then solid waste generation at Camp Lejeune would remain the same. There would be no impacts to solid waste.

Proposed Action

Solid waste generated during construction and operation of the Wallace Creek Regimental Area would be disposed of at the Base landfill on Piney Green Road. Solid waste would be generated by personnel living in the BEQs, personnel working at the complex, and the routine operation of the complex. By 2010, it is estimated that proposed action would consist of a gain of approximately 2,100 personnel, which would be a 5 percent increase from the existing 42,241 active duty personnel at Camp Lejeune. As a result, there would be additional solid waste generated from personnel working at the Wallace Creek Regimental Area and from operation of facilities.

Several types of materials would be recycled from office operations and would not become solid waste: paper products, compact disks, aluminum cans, food and beverage cans, glass, plastic bottles, and toner cartridges. In addition, construction wastes would be minimized and recycled to the greatest extent available.

The USEPA estimates that the average person generates approximately 4.54 pounds of solid waste per day (USEPA, October 2006). Using this USEPA estimate, the increase in solid waste generated by the proposed action is calculated to be 4.3 metric tons per day (9,534 pounds per day) or 129 metric tons per month (142 tons per month). Compared to the rate of solid waste disposal at MCB Camp Lejeune as a whole, this represents about a 4 percent increase. The proposed action would result in minor adverse impacts to solid waste.

4.7.6 Stormwater

No Action Alternative

Under the No Action Alternative, there would be no development of the Wallace Creek Regimental Area. Stormwater management would remain much the same and impacts would not occur.

Proposed Action

The Base's 2002 Stormwater Pollution Prevention Plan is a comprehensive program to control stormwater discharges while its Standard Operating Procedure establishes requirements and assigns responsibilities for the implementation of the Stormwater Management NPDES Phase II requirements (the permit is expected to be issued in 2008). Both would be followed during the design and operation of the Wallace Creek regimental area facilities to control and treat

runoff. Development of facilities would take place on roughly 122 ha (302 ac) and approximately 38 ha (94 ac) of that would be impervious surfaces. This will increase the amount and velocity of stormwater. However, according to conceptual design, approximately 3 ha (7 ac) of stormwater ponds would be constructed within the Wallace Creek Regimental Area project area to control this increase in stormwater.

Best management practices (BMPs) 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. Long-term BMPs, such as oil/water separators, would be developed as part of the site design process. Other mitigation measures would include planting grass on bare areas and planting ornamental shrubs and trees with mulching in select areas. This vegetation would serve to aid in absorption and filtering stormwater runoff.

Lastly, Camp Lejeune's current Stormwater Phase I permit was approved in 2004. When this permit is renewed again (sometime around 2009) all new facilities, such as those included in the proposed action, would be evaluated for compliance with the permit requirements to determine if they need to be included. This permitting process involves preparation of an outfall management plan; the proposed action would be included in that plan. Therefore, the proposed action would result in minor adverse impacts to stormwater.

4.8 CULTURAL RESOURCES

4.8.1 Historic Resources

No Action Alternative

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

Proposed Action

In 2004, the NC SHPO concurred that the Parachute Training Historic District is eligible for inclusion in the NRHP (Brook, June 2004) (Appendix A). The Parachute Training Historic District consists of three discontinuous contributing resources: PT-4, PT-5, and PT-6. These three resources are within the area of potential effects (Figure 4-1, Cultural Resources - Area of Potential Effects at the Wallace Creek Regimental Area). However, PT-4 and PT-5 are not in proximity to the construction of the complex facilities. PT-6 is adjacent to one of the buildings and a parking area, but no physical alteration or construction would occur within the NRHP

boundary of the building. In addition, the roadway running along the three buildings, Parachute Tower Road, is considered a non-contributing element and therefore its realignment is not considered to be an issue. Therefore, no historic properties would be affected by the proposed action (Townson, April 2008) (Appendix A).

4.8.2 Archaeological Resources

No Action Alternative

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

Proposed Action

Three potentially eligible archaeological sites were identified within the boundaries of the proposed project area: 31ON1059, 31ON1077, and 31ON1132. Phase II field survey and evaluation of these sites determined that none of the three sites meet the NRHP criteria for eligibility. Therefore, implementation of the proposed action would not affect any NRHP-eligible archaeological sites (Townson, April 2008) (Appendix A).

4.9 NATURAL RESOURCES

4.9.1 Geology, Topography, and Soils

No Action Alternative

The No Action Alternative would not result in impacts to geology, topography, or soils. Soil profiles and vegetative cover would remain intact at the project area.

Proposed Action

Minor impacts to existing topography would occur during clearing and grading of the Wallace Creek Regimental Area project area. Construction activities would have no direct impact on geological formations at the project area. During construction, soils at the site would be affected through clearing, grading, compaction, and potential erosion. Erosion impacts would be temporary and would be minimized by employing BMPs for soil erosion and sedimentation control at the construction site. Most of the affected soils would eventually be covered with impervious surfaces or vegetation, preventing long-term erosion.

4.9.2 Water Resources

No Action Alternative

Neither surface water nor groundwater resources would be impacted under the No Action Alternative because there would not be any construction at the project area. Groundwater levels and water quality would remain in their current condition.

Proposed Action

Construction of the proposed Wallace Creek Regimental Area would have minimal adverse effect on surface waters. Approximately 8 m (26 ft) of intermittent streams and approximately 9 m (30 ft) of perennial streams near Beaverdam Creek would be impacted by the construction of the Wallace Creek Regimental Area facilities. This would occur from the new road crossing Beaverdam Creek and Birch Road being widened over Beaverdam Creek. Appropriate BMPs would be used both during construction and during the long-term operation and maintenance of the complex. The BMPs would ensure removal of suspended particulates prior to surface runoff entering Wallace Creek, New River, Beaverdam Creek, and Bearhead Creek. Camp Lejeune would prevent contamination of water resources by properly storing all fuel and maintaining hazardous materials storage areas in compliance with MCO P5090.2A, Change 1, Chapter 20 and the Base's 2002 Stormwater Pollution Prevention Plan (DoN, February 2002).

Withdrawing groundwater from the Castle Hayne aquifer to provide potable water to the new facilities is not expected to cause a decline in groundwater levels (see Subchapter 4.7.1). Camp Lejeune would continue to monitor groundwater quality and quantity.

4.9.3 Wetlands and Floodplains

No Action Alternative

There would be no impacts to floodplains or wetlands as the No Action Alternative does not involve facility development. When facility development is considered on Base, it is routinely planned to avoid floodplains and wetlands whenever possible.

Proposed Action

The layout of the proposed development has been designed to avoid and minimize direct and indirect impacts to wetland, streams, and floodplain areas to the greatest extent possible. However, the proposed action has the potential to adversely impact wetlands at MCB Camp Lejeune. New road construction would adversely impact two wetland areas where they are crossed (Figure 4-2, Impacts to the Wetlands at the Wallace Creek Regimental Area). The proposed new westernmost road would impact approximately 630 sq m (6781 sq ft) of wetland area. This road has been aligned to cross the wetland at its narrowest point near the complex. The widening of Birch Street may impact approximately 250 sq m (2691 sq ft) of wetland area. Other wetlands are present along the site boundary; therefore, protective measures would be

used to avoid the indirect impact to adjacent wetlands. Wetland protection measures as outlined in the *Memorandum of Agreement Between the Department of the Army and the Environmental Protection Agency, The Determination of Mitigation under the Clean Water Act Section 404 (b) (1) Guidelines* (US Army Corps of Engineers and USEPA, February 1990) would be followed:

- Avoidance - avoid potential impacts to the maximum extent practicable
- Minimization - take appropriate and practicable steps to minimize the adverse impacts (e.g., limit the anticipated impact to an area of the wetland with lesser value than other areas, or reduce the actual size of the impacted area)
- 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)

The total area of wetlands to be impacted by the proposed construction of the Wallace Creek Regimental Area would be approximately 0.09 ha (0.22 ac). MCB Camp Lejeune would mitigate impacts to wetlands in accordance with the wetland permit conditions to satisfy mitigation requirements.

Approximately 32 ha (80 ac) of floodplains are present in the project area. Based on the conceptual plan for the layout of facilities, the construction of one of the BEQs (P-138) would occur within the Wallace Creek floodplain and would adversely affect approximately 25 sq m (270 sq ft) of floodplain. If design plans should be developed for construction purposes, MCB Camp Lejeune would work closely with the design-build contractor to site the P-138 BEQ outside of the floodplain.

The construction of the new roadways has the potential to adversely impact approximately 520 sq m (5,600 sq ft) of floodplain, and the widening of Birch Street may impact approximately 370 sq m (3,983 sq ft) of floodplain. All remaining facilities would be located outside of the floodplain and would have no impact. In total, the proposed action has the potential to adversely impact approximately 0.09 ha (0.22 ac) of floodplain. The parking lot would not be considered an incompatible type of development within a floodplain.

Typically, placing fill in floodplains may block the flow of water and increase flood heights. However, proposed development within the floodplain would only be about a tenth of one percent of the total size of the Wallace Creek floodplain and is considered to be a minor adverse impact.

4.9.4 Vegetation

No Action Alternative

The No Action Alternative would not affect vegetation because no land clearing activities would occur. The Base's Forest Management Program would continue to support the military mission, enhance the ecological integrity of forestlands, and generate revenue to support active forest management.

Proposed Action

The project area is approximately 162 ha (401 ac) of mixed pine-hardwood forest. Implementation of the proposed action would result in the removal of roughly 64 ha (158 ac) of the total 162 ha (401 ac) forested area. The forested portion of the proposed project area contains merchantable timber with stocking levels and tree ages that would make the stand commercially valuable. After clearing, this acreage would be permanently removed from future timber commodity production. The forested portion of the proposed project area represents less than one percent of the Base's total forested land (37,352 ha [92,300 ac]). Although land would be cleared to accommodate the proposed facilities, the scale of land clearing in comparison to the current extent of managed forests on-base or the amount of resources remaining for management after project construction would be minor. Therefore, the impact to vegetation would be minor. After construction, mitigation measures would include planting grass along roadsides and around buildings, with the addition of ornamental shrubs, trees, and mulching in select areas. The proposed action would result in a permanent change of vegetation within the footprint of development from forest to a developed area.

4.9.5 Wildlife

No Action Alternative

The No Action Alternative would not result in impacts to wildlife or wildlife habitat. 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.

Proposed Action

The removal of 64 ha (158 ac) of mixed pine-hardwood forested habitat at the Wallace Creek Regimental Area 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 as a result of construction activity. Wildlife residing in the periphery of the construction site may be temporarily displaced as a result of the noise and activity of construction. There would also be a permanent loss of foraging habitat. While there would be an adverse impact to individual animals under the proposed action, these impacts would not affect the stability of local wildlife populations.

Migratory bird species that have the potential to occur within the project area are identified in Appendix B. Minor impacts to migratory birds would occur due to loss of resting, roosting, and foraging habitat. Population level effects would not occur because the proposed action area represents a small portion of the habitat available on a base-wide and regional basis. Therefore, the proposed action would have minor adverse impacts on a population of migratory bird species and would not require prior coordination with the USFWS. Similarly, the proposed action is not anticipated to have adverse impacts to a population of migratory and non-migratory bird species of conservation concern as identified by the USFWS in their *Bird of Conservation Concern 2002*.

4.9.6 Threatened and Endangered Species

No Action Alternative

There would be no impacts to threatened and endangered species or their habitat under the No Action Alternative. Protected species and their habitats would continue to be managed under Camp Lejeune's Threatened and Endangered Species Management Program for conservation and recovery in accordance with all environmental laws, regulations, and terms and conditions in applicable USFWS biological opinions.

Proposed Action

No threatened and endangered species are known to occur in the project area. The nearest RCW cluster is located 2.6 km (1.6 mi) from the project area. The forested habitat in the Wallace Creek Regimental Area is not in or near the RCW Management Areas, where resources are managed to enhance RCW habitat. Therefore, the removal of forest within the project area for development of facilities and infrastructure would not impact potential RCW habitat.

The nearest bald eagle nest is 10.5 km (6.5 mi) away from the proposed project area. This is well outside the outermost protective buffer in which activity restrictions apply. Therefore, the proposed action is not likely to adversely affect the RCW, bald eagle, or any other federally endangered or threatened species currently proposed for federal listing under the Endangered Species Act.

4.10 HAZARDOUS MATERIALS AND WASTE

4.10.1 Hazardous Materials and Waste Management

No Action Alternative

The existing conditions in hazardous materials and waste management would not change under the No Action Alternative. Camp Lejeune would continue with currently scheduled remedial actions and environmental pollution abatement as outlined in the Base Order on *Oil and*

Hazardous Substance Pollution Prevention and Pollution Abatement Facility Management (MCB Camp Lejeune, May 1999). Management of waste streams would be unaffected. As a result, no impacts are expected to hazardous materials and waste management under the No Action Alternative.

Proposed Action

Implementation of the proposed action would result in an increase in the use of various hazardous materials including but not limited to; oils, lubricants, acids, solvents and degreasers. This increase would in turn result in an increase in the volumes of hazardous materials and wastes entering and leaving the base. During operations and maintenance of the proposed Wallace Creek Regimental Area, the management of hazardous materials would be conducted in accordance with all applicable laws and regulations. All personnel would be required to follow the procedures established by Base Orders 6240.5B and 11090.3A for handling hazardous materials and petroleum, oil, and lubricants. By following these procedures, releases of contaminants would be minimized.

The increased use of hazardous materials on base has the potential to result in an increase of accidental releases of contaminants (i.e. spills). Handling of hazardous materials and wastes by personnel would be conducted in accordance with all applicable procedures in order to minimize spill occurrence and any accidental releases would be immediately addressed in accordance with the facility spill response plan. As a result, impacts from accidental releases or hazardous material would be considered minor.

Implementing the proposed action at the Wallace Creek Regimental Area project area would result in minor adverse impacts from hazardous materials and waste management.

4.10.2 Contaminated Sites

No Action Alternative

The existing conditions at contaminated sites would not change under the No Action Alternative. MCB Camp Lejeune would continue with currently scheduled remedial actions and environmental pollution abatement as outlined in the Base Order on *Oil and Hazardous Substance Pollution Prevention and Pollution Abatement Facility Management* (MCB Camp Lejeune, May 1999). No impacts are expected to occur within the project area under the No Action Alternative.

Proposed Action

Demolition of existing facilities and remediation would be completed prior to construction activities where necessary. Usual BMPs would be employed in the handling, removal and disposal of potentially hazardous substances. Furthermore, if necessary, MCB Camp Lejeune

would obtain appropriate approvals from USEPA and NCDENR regarding proposed development at the project area.

IR Site 19 – Former Naval Research Lab Dump

Based on historical information and the results of previous and recent radiological survey and sampling at IR Site 19, there is no radiation exposure hazard for personnel working in the project area (NAVFAC Mid-Atlantic, February 2008). However, additional investigation for potential radioactive material was recommended by Naval Sea Systems Command Detachment RASO in the area as shown in Figure 4-3. A radiological investigation to be performed by Naval Sea Systems Command Detachment RASO and their associated contractors is programmed for FY2008. Comparison of recent soil and groundwater sampling data with historical data from SWMU 43 RCRA Facility Investigation indicate that arsenic levels reported within the vicinity of site 19 are determined to be within acceptable risk. It is recommended that a human health risk assessment be conducted on the collected data. If health risk assessments determine an unacceptable risk, industrial remediation would be required to reduce risk to site workers. Site workers would also be required to wear appropriate personal protective equipment to prevent potential health risks.

Figure 4-3, Contaminated Sites - Areas of Concern at the Wallace Creek Regimental Area, shows the location of IR Site 19 in relation to the proposed facilities associated with the proposed action. Maintenance operations facilities would be constructed immediately west of IR Site 19. Most of IR Site 19 would be overlain by a parking lot. The construction of a parking area would constitute an engineered control and would effectively contain underlying contaminated material. A messhall and BEQs are proposed to be near but outside the boundaries of the IR Sites. Dependent on the proximity of these proposed facilities, residential remediation goals may be required. These would include surficial soil removal and the use of engineered controls such as paving to isolate the arsenic which is found to exceed the USEPA residential PRGs limit of .39 ppm. As a result of testing IR Site 19 and subsequent remedial activities, the proposed action would have a long-term beneficial impact to site soils.

IR Site 20 – Former Naval Research Lab Incinerator

Soil and groundwater sampling data compared with SWMU 43 RCRA Facility Investigation indicated arsenic levels at IR Site 20 to be within acceptable risk. A human health risk assessment is recommended to be performed on data collected on IR Site 20. An elevated detection of trichloroethene was reported in a duplicate sample from one of the soil surface locations at IR Site 20. It may have been an anomaly or isolated sampling; however confirmatory sampling would be conducted prior to implementation of the proposed action. If such an analysis should determine trichloroethene levels to pose an unacceptable risk, remedial activities would be required in order to reduce the risk to acceptable levels.

As shown in Figure 4-3, IR Site 20 would be overlain by a parking area. Proposed facilities located near IR Site 20 include a medical/dental clinic, maintenance operations facilities, and

BEQs and a messhall. Dependent on the proximity of these facilities, residential remediation goals may be required. These may include but are not limited to paving and surficial soil removal. Contaminants that exceeded USEPA residential PRGs in surficial soils at this site include arsenic, with a 0.39 ppm maximum and trichloroethene with a 53 ppm maximum.

In addition to remediation, site workers would be required to wear appropriate personal protective equipment to protect them from any potential health risks. As a result of testing IR Site 20 and subsequent remedial activities, the proposed action would have a long-term beneficial impact to site soils.

IR Site 25 – Former Base Incinerator

Soil and groundwater sampling data compared with SWMU 43 RCRA Facility Investigation indicated arsenic levels at IR Site 25 to be within acceptable risk. A human health risk assessment is recommended to be performed on data collected on IR Site 25 in order to confirm this data evaluation for arsenic.

Several BEQs are proposed near IR Site 25, though the entire site boundary would be overlain by a parking area. The construction of the parking area would constitute an engineered control and would effectively contain underlying contaminated material. Industrial PRGs for surficial soils would still need to be met and appropriate personal protective equipment used during construction to ensure site worker health.

ASR Site 2.82 – Active Base Skeet Range

Lead concentrations at the active base skeet range exceeded Industrial PRGs at nine surface soil locations and two shallow groundwater locations. The area of lead impact was generally within shot-fall region of the range. Additional sampling of surface soils and groundwater as well as a risk assessment was recommended to address this area of elevated lead concentrations. Should subsequent investigations and assessments determine that the site poses an unacceptable risk, remedial activities to USEPA industrial PRGs would be required in order to reduce the risk to site workers to acceptable levels prior to the implementation of the proposed action. An anomaly investigation, to determine if unexploded ordnance exists at the site, is programmed for FY2008.

Since several BEQs are proposed to be constructed within the footprint of the active base skeet range fan, stricter residential remediation goals for this site may be required for surficial soils. Interim USEPA guidelines call for exposure-reduction activities (e.g., using ground cover to create a barrier over contaminated soil) when lead levels in bare residential soil are between 400 and 5,000 ppm. Permanent abatement (e.g., removal and replacement) of bare residential soil is recommended when lead concentrations exceed 5,000 ppm. The Housing & Urban Development guidelines set exterior dust lead levels in excess of 74 micrograms per sq m (800 micrograms per sq ft) as a lead hazard (DeGrandchamp, June 2005).

The proposed action would have a beneficial impact to site soils and groundwater. Long-term beneficial impacts associated with the removal of the Active Base Skeet Range would be offset by the creation of a replacement skeet range elsewhere on the Base. Camp Lejeune has recently identified a new location for the skeet range that is outside of the proposed Wallace Creek project area. The affected environment for this replacement facility is similar to actions being analyzed within the *Environmental Assessment for Security Gate Upgrades, Road Improvements, Landfill Expansion, and Relocation of Skeet Range, MCB Camp Lejeune, North Carolina*. Therefore, this new replacement facility has been included for impact analysis in that document.

ASR Site 2.78 – Former Practice Hand Grenade Range

Results of the recent site investigation and sampling of the former practice hand grenade range show no excess of industrial PRGs in surface and subsurface soils. In addition, 17 total metals and 15 dissolved metals were detected in the shallow groundwater; however, none exceeded the North Carolina Groundwater Quality Standards. Since no housing structures are proposed in this area, remediation beyond industrial criteria is not warranted.

4.11 UNAVOIDABLE ADVERSE IMPACTS

The primary unavoidable, adverse impacts on the environment resulting from the implementation of the proposed action would be the long-term effects of the removal of up to 64 ha (158 ac) of mixed pine- hardwood forest. This would reduce the carrying capacity for wildlife species associated with that type of habitat but would be minor in the context of all similar forested areas within Camp Lejeune. Currently, this area is under forest management. Once developed, future revenue from the sale of forest products within the project area would be eliminated. In addition, noise generating activities would occur during the construction phases of the project and also from military training that would be conducted at proposed training facilities within the Wallace Creek Regimental Area. The proposed action also includes several actions that would result in increased air emissions.

Approximately 8 m (26 ft) of intermittent and approximately 9 m (30 ft) of perennial streams near Beaverdam Creek would be impacted by the construction of the Wallace Creek Regimental Area facilities. Additionally, new road construction would adversely impact wetlands where they are crossed. The proposed new westernmost road would impact approximately 630 sq m (6781 sq ft) of wetland area. The widening of Birch Street may impact approximately 250 sq m (2691 sq ft) of wetland area. In addition, the proposed action has the potential to adversely impact approximately 0.09 ha (0.22 ac) of floodplain. Five hazardous waste sites would be impacted by the proposed action. However, assessment/site investigation and any necessary remediation would be completed prior to construction.

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

4.12 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 facilities at the project areas.

From a long-term perspective, the proposed action would improve the military's capability to provide a mission ready force. The negative impacts of achieving this capability would be the removal of up to 64 ha (158 ac) of mixed pine-hardwood habitat and the associated wildlife species. The loss of forested habitat also results in a long-term, though minimal, reduction in commodity production and revenues. While the initial clearing of the proposed action area would generate timber revenues, this would be at the expense of long term revenue generation from future thinning and regeneration of a forest site. This lost revenue would directly reduce funding for forest management activities on the Base.

4.13 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

Fuel, construction materials, and labor would be expended during construction of facilities. Operating the new facilities would require energy to heat, cool, and light the buildings. Commitment of these resources would be considered minor. Moreover, the proposed action would not result in the destruction of environmental resources such that the range of potential uses of the environment would be limited, nor impact the biodiversity of the region.

4.14 MITIGATION MEASURES

The following mitigation measures would be implemented as part of the proposed action:

- 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 at telephone (910) 451-7230
- BMPs would be used to avoid and minimize the release of sediments into stormwater. Mitigation plans would include both short-term (construction phase) and long-term (project life) features to meet the requirements of the Base's Stormwater Pollution Prevention Plan
- All projects would be designed to avoid and minimize impacts to wetlands and waters of the US

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5 CUMULATIVE IMPACTS

Cumulative impacts are defined by the Council on Environmental Quality in 40 CFR 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.

The Council on Environmental Quality regulations further require that NEPA environmental analyses address connected, cumulative, and similar actions in the same document (40 CFR 1508.25). There are several recent, present, and future planned projects at Camp Lejeune to be considered when analyzing the cumulative effects of the proposed facility construction at the Wallace Creek Regimental Area and associated influx of 2,100 Marines and their family members.

5.1 OTHER PAST OR PLANNED ACTIONS IN THE VICINITY OF THE PROPOSED ACTION

Past and future MCB Camp Lejeune projects that could interact directly or indirectly with the proposed action are discussed below. These projects, which are all on MCB Camp Lejeune, are neither dependent on the proposed action nor part of it. Other projects on MCB Camp Lejeune that do not have the potential to interact cumulatively with the proposed action are not addressed in this EA.

5.1.1 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, September 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, FY 2005. The EA for the Force Structure Review Group Initiatives for FY 2005 (MCB Camp Lejeune, August 2005) assessed the impacts of constructing 57,400 sq m (617,900 sq ft) of facilities and modifying several existing facilities, all of which were designed to accommodate 2,100 new military personnel at MCB Camp Lejeune. These personnel 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, November 2005). 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 EA determined that there would be no significant adverse impacts on the environment. Impacts to coastal zone management, navigation, air quality, environmental justice, noise, wildlife, and vegetation would be negligible. State-approved erosion and sedimentation control plans have been implemented as necessary for construction activities. 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 MARSOC Complex (MCB Camp Lejeune, August 2007) that is proposed in the Stone Bay Rifle Range part of the Base. MARSOC is expected to have approximately 1,750 Marines at Camp Lejeune by 2010. It is estimated that half of these personnel would transfer into MARSOC from other existing on-base units, while the remaining half would be new personnel. Thus, the proposed action involves approximately 875 new personnel becoming stationed at Camp Lejeune. The MARSOC Complex would be 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 MARSOC Complex resulted in a determination of a FONSI.

5.1.2 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. Finally, 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. This lift station would be designed to accommodate the wastewater from the proposed Wallace Creek Regimental Area.

Security Gate Upgrades, Road Improvements, and Landfill Expansion. 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, and construction of Phase III of the Municipal Solid Waste Landfill Facility 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.

Grow the Force. The USMC is preparing an EIS to address the total influx of personnel that is expected at MCB Camp Lejeune in the coming years in relation to achieving a balanced growth in capability throughout the Marine Corps. Although the total USMC growth in end strength has not yet been quantified, it is expected that there would be yearly incremental increases in the existing war-fighting organization of the Marine Corps. This EIS will also be addressing facility construction designed to meet the operational and training needs of these incoming personnel. An EA and FONSI have been prepared to analyze the impacts of temporary facilities that are needed to accommodate the influx of personnel at MCB Camp Lejeune until permanent facilities can be analyzed in the EIS and later constructed.

5.2 POTENTIAL CUMULATIVE IMPACTS BY ENVIRONMENTAL RESOURCE AREA

5.2.1 Land Use and Coastal Zone Management

The proposed action would result in a change to the project area land use from mixed forest to developed areas. The Marine Corps, through the Coastal Consistency Determination process, has determined that implementing the proposed action would be fully consistent with the applicable policies of the North Carolina Coastal Management Act. Other projects on Camp Lejeune would be subject to the North Carolina Coastal Area Management Act and other land use policies. These regulations would ensure that the proposed action, in conjunction with other projects in the vicinity of Camp Lejeune, would not result in cumulative impacts to land use and coastal zone management.

5.2.2 Socioeconomics

The influx of personnel associated with the new regiment at Wallace Creek, in addition to the influx of personnel associated with MARSOC and Force Structure Review Group Initiatives, FY 2005, would not result in cumulative adverse impacts to socioeconomics. Impacts associated with employment and income would result in benefits to the regional economy. The proposed action would not be fully implemented until 2010, reducing the intensity of population growth. The cumulative impacts associated with the proposed action (construction, operation, and maintenance of the Wallace Creek Regimental Area with an influx of 2,100 new personnel) in

conjunction with the past, present, and reasonably foreseeable future actions within Camp Lejeune are anticipated to be minor.

The proposed action would have no impacts to environmental justice. Other projects on Camp Lejeune would be subject to Executive Orders 12898 and 13045, which would ensure that the proposed action, in conjunction with other projects in the vicinity of Camp Lejeune, would have no cumulative impacts to minorities, low-income populations, or children.

5.2.3 Community Facilities and Services

The influx of personnel associated with the new regiment at Wallace Creek, in addition to the influx of personnel associated with MARSOC and Force Structure Review Group Initiatives, FY 2005, would result in minor adverse cumulative impacts to community facilities and services. The proposed action would not be fully implemented until 2010, reducing the intensity of population growth. Further, current initiatives and construction activities by the Onslow County Schools are increasing the capacity of the school district, particularly at the elementary school level. In addition, the Marine Corps is working with local school districts to identify ways to lessen potential impacts. The cumulative impacts associated with the proposed action (construction, operation, and maintenance of the Wallace Creek Regimental Area with an influx of 2,100 new personnel) in conjunction with the past, present, and reasonably foreseeable future actions within Camp Lejeune are anticipated to be minor.

5.2.4 Transportation and Traffic

The proposed Wallace Creek Regimental Area would cause an increase in traffic due to additional commuters. However, this increase in traffic is expected to result in a minor short-term impact because of the proposed additional roads and other roadway improvements. In addition, under a separate proposed project, security gate upgrades at Main Gate and Piney Green Gate and road improvements to Old Saw Mill Road and Piney Green Road will help reduce traffic congestion from additional commuters. The proposed project, in conjunction with other past, present, and reasonably foreseeable future projects, would result in minor cumulative impacts to transportation and traffic.

5.2.5 Air Quality

Air quality emissions from the proposed action could potentially be generated in conjunction with emissions from the projects discussed in Subchapter 5.1 during project operations and training. However, due to the mobile and intermittent nature of the proposed emission sources, project operational emissions would not produce substantial ambient impacts in a given locality.

As a result, air emissions from the proposed action, in conjunction with reasonably foreseeable future project emissions, would not exceed any ambient air quality standard and would result in minor cumulative air quality impacts.

5.2.6 Noise

The proposed action would have minor, short-term noise impacts. Other projects on MCB Camp Lejeune would be subject to existing federal regulations/guidelines and state, regional, and local policies and programs relating to noise exposure. Therefore, the proposed action, in conjunction with other projects in the vicinity of Camp Lejeune, would not result in cumulative noise impacts.

5.2.7 Infrastructure and Utilities

No adverse impacts to the supply or capacity of utilities would result from the operation of the proposed Wallace Creek Regimental Area. Camp Lejeune has the supply and capacity to accommodate the current demand for water, electricity, and natural gas, and the existing wastewater and solid waste generation, in addition to the demand created by the proposed action. The proposed action, in conjunction with other activities on Camp Lejeune, would have minor adverse cumulative impacts on the supply or capacity of utilities.

The proposed action, as well as other projects on Camp Lejeune, will be required to follow the Base's 2002 Stormwater Pollution Prevention Plan and the Standard Operating Procedure for the implementation of the Stormwater Management NPDES Phase II requirement. Therefore, the proposed action, in conjunction with other projects in the vicinity of Camp Lejeune, would result in minor adverse cumulative impacts to stormwater.

5.2.8 Cultural Resources

The proposed action would have no adverse impacts to cultural resources. Other projects on Camp Lejeune would be subject to NEPA and Section 106 of the NHPA. These requirements, coupled with continued implementation of the Integrated Cultural Resources Management Plan and Base Order 11000.19A would ensure that the proposed action, in conjunction with other activities on Camp Lejeune, would not result in cumulative impacts to cultural resources.

5.2.9 Natural Resources

The proposed action would result in minor adverse impacts to geology, topography, and soils. Minor impacts to existing topography would occur during clearing and grading of the Wallace Creek Regimental Area project area. Construction activities would have no direct impact on geological formations at Hadnot Point. During construction, soils at the site would be affected through clearing, grading, compaction, and potential erosion. With the implementation of measures identified in the Integrated Natural Resource Management Plan (INRMP) (January 2007) to limit erosion and sedimentation, and the resultant effects on aquatic communities, the proposed action in conjunction with other activities on Camp Lejeune, would have minor cumulative impacts on geology, topography, and soils.

Implementation of the proposed action would result in minor impacts to the quality or quantity of surface water or groundwater resources at MCB Camp Lejeune. The construction of the Wallace Creek Regimental Area would be designed to minimize any discharge of pollutants to marine, estuarine, or freshwater environments. Other activities and new projects on MCB Camp Lejeune are conducted in compliance with Clean Water Act requirements for stormwater controls and discharge permits. Implementation of measures identified in the INRMP would further ensure that the proposed action, in conjunction with other activities on MCB Camp Lejeune, would have minor adverse cumulative impacts on surface water and groundwater resources.

Where wetlands or floodplains occur near the proposed construction areas, the proposed project would be designed to avoid impacts to these features to the maximum extent practicable. If wetlands are to be impacted, the USMC would obtain the appropriate Section 404 wetland permit from the US Army Corps of Engineers (nationwide or individual permit depending on the quantity of wetlands affected) prior to construction, and would implement mitigation as required by wetland permit conditions. The proposed action, in conjunction with other activities on Camp Lejeune, would have minor adverse cumulative impacts on wetlands or floodplains.

The forested portion of the proposed project area represents less than one percent of the Base's total forested land. Although land would be cleared to accommodate proposed facilities, the scale of land clearing in comparison to the extent of managed forests on-base is relatively small. The amount of remaining resources under forest protection, reforestation, and sustainable timber management under Camp Lejeune's Forestry Management Program would remain substantial. Implementation of measures identified in the INRMP would further ensure that the proposed action, in conjunction with other activities on MCB Camp Lejeune, would have minor cumulative impacts on vegetation.

The proposed action would not have impacts on populations of migratory birds. There would be minor adverse impacts to wildlife in the immediate vicinity of the proposed action, but the stability of wildlife populations would not be affected. The proposed action would have no impact to threatened and endangered species as none of the listed species or their habitats are

known to occur within the proposed project area. Implementation of measures identified in the INRMP would further ensure that the proposed action, in conjunction with other activities on MCB Camp Lejeune, would have minor cumulative impacts on migratory birds, threatened and endangered species, or other wildlife.

5.2.10 Hazardous Materials and Waste

The proposed action would result in minor adverse impacts from hazardous materials, waste management, or existing contaminated sites. Remediation of contamination would be completed prior to construction activities where warranted. Usual BMPs would be employed in the handling, removal, and disposal of potentially hazardous substances. Furthermore, if necessary, MCB Camp Lejeune would obtain appropriate approvals from US Environmental Protection Agency and the North Carolina Department of Environmental and Natural Resources regarding proposed development at the project area.

The reasonably foreseeable creation of a new recreational skeet range would likely result in the long-term environmental degradation of the new site resulting from the deposition of lead from shot. However, with proper management, impacts to the site could be maintained at levels considered to be minor.

5.3 CONCLUSION

Implementation of the proposed action would result in minor adverse impacts to the environment. Any cumulative impacts from the proposed action, in conjunction with other past, present, and reasonably foreseeable future actions, would be expected to be minor.

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APPENDIX A
CULTURAL RESOURCE COORDINATION

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Re: Site visit summary and *Historical Architectural Evaluations*, Camp Lejeune,
Onslow County

Dear Mr. Richardson: *Rick*

This letter is to summarize our April 29, 2004, visit with you at Camp Lejeune. We apologize for taking so long to prepare the summary, but several pressing matters arose during the interim and we were without the able assistance of our intern Erin Kane, who has become our "Camp Lejeune expert."

The purpose of the meeting on April 29th was for all of our staff members, who have review responsibilities for Camp Lejeune, to tour those areas of the base identified in the *Historic Architectural Evaluations: Marine Corps Base, Camp Lejeune (HAE)* and determine whether or not we concur with the property evaluations within the context of the World War II Mobilization. We were very fortunate to be able to visit all of the areas addressed in the *HAE*, and thank you and Tara for the excellent tour. Based on the tour, maps you provided for the tour, and the information contained in the *HAE*; we offer the following comments.

Individual Buildings Eligible for the National Register

- SHPO concurs that the following buildings are individually eligible for inclusion in the National Register:
 - Building H1, **Naval Hospital**
 - Building 1, **Post Headquarters**
 - Building 15, **Infirmary**
 - Building 16, **Protestant Chapel**
 - Building 17, **Catholic Chapel**
 - Building 19, **Base Theater**
 - Building 235, **Bus Station**

www.hpo.der.state.nc.us

	Location	Mailing Address	Telephone/Fax
ADMINISTRATION	507 N. Blount St, Raleigh, NC	4617 Mail Service Center, Raleigh, NC 27699-4617	(919) 733-4763 • 733-8653
RESTORATION	515 N. Blount St, Raleigh, NC	4617 Mail Service Center, Raleigh, NC 27699-4617	(919) 733-6547 • 715-4801
SURVEY & PLANNING	515 N. Blount St, Raleigh, NC	4617 Mail Service Center, Raleigh, NC 27699-4617	(919) 733-4763 • 715-4801

Historic Districts Eligible for the National Register

- SHPO concurs that the following districts are eligible for inclusion in the National Register as defined in *HAE* documentation:
 - **Assault Amphibian Base Historic District**
 - **Stone Bay Rifle Range Historic District**
 - **Parachute Training Historic District**

- SHPO feels that the following districts are eligible for inclusion in the National Register with the recommended changes to *HAE* documentation:
 - **Command Services Historic District and Regimental Area No. 3 Historic District** - SHPO recommends these areas be combined to form one contiguous historic district. A rough estimate of boundaries for the combined historic district begins at Bldg. 17 (Catholic Chapel) north boundary documented in *HAE* following south along McHugh Boulevard encompassing Bldg. 1 (Post Headquarters) and Bldg. 15 (Dispensary), and their respective northeast boundaries as documented in *HAE*. The boundary should continue northeast along Holcomb Boulevard to include the Power Plant and a portion of the adjacent industrial/warehouse complex to the northeast to form the eastern boundary. The southeast boundary should follow the southern border of the Parade Ground, encompassing Bldg. 16 (Protestant Chapel) with its southeast boundary as documented in *HAE*. From Bldg. 16 the boundary should then follow northwest along McHugh Boulevard to I Street, southwest along I Street to H Street, following the previously documented boundary for Regimental Area No. 3 Historic District along Julian C. Smith and encompassing Bldg. 2 (Division Headquarters) with boundaries documented in *HAE* as the southwest boundary and following G Street as previously documented. The boundary should then encompass Bldg. 235 (Bus Station) and its previously documented boundaries in *HAE*, then continue northwest along McHugh Boulevard encompassing Bldg. 236 (Training Pool) and Bldg. 19 (Base Theater), and their *HAE* documented boundaries bordered by C Street and D Street at the north and south, again returning to and traveling along McHugh Boulevard back to Bldg. 17 (Catholic Chapel). Exact boundaries encompassing the power plant and industrial area at the northeast boundary need to be determined upon further consultation.

The following buildings previously identified as **Command Services Historic District** are both individually eligible and are included as contributing buildings within the redrawn district:

- | | | |
|------|------|-------|
| • 1 | • 16 | • 19 |
| • 15 | • 17 | • 235 |

The following buildings previously identified as contributing to **Regimental Area No. 3 Historic District**, along with contributing landscape features described in *HIAE*, are included as contributing features within the redrawn district:

- 2
- 300
- 302
- 302A
- 303
- 307
- 308
- 309
- 311
- 312
- 313
- 314
- 315
- 316
- 317
- 318
- 319
- 320
- 321
- 322
- 322A
- 323
- 324
- 325
- 326
- 327
- 328
- 333
- 334
- 339
- 340
- 341
- 342
- 343
- 344

The following buildings and features previously identified as non-contributing should be identified as contributing within the redrawn district, in addition to buildings associated with the power plant and industrial complex at the northeast boundary to be identified upon further evaluation:

- 20
- 55
- Parade Ground
- 209
- 782?
- 42

The following buildings will remain non-contributing within the new district boundaries:

- 14
- 14A
- 16A
- HP3
01
- HP
302
- HP
306
- HP
307
- HP
30

The following buildings previously identified as contributing to the **Regimental Area No. 3 Historic District** should be removed from the boundaries of the redrawn district:

- 331
- 332

The layout, open spaces, and landscape features, as well as the buildings and their architectural considerations, are important to the national significance of MCB Camp Lejeune as an historic military landscape and should be considered contributing elements to the district.

- **Montford Point Camp No. 1 Historic District** - SHPO concurs with the district's western and southern boundaries, but feels the northern and eastern boundaries should

be redrawn. Buildings at the northeast corner of the currently identified historic district appear to be eligible as buildings contributing to Montford Point Camp No. 1 Historic District

SHPO identified the following buildings as potentially eligible for inclusion in the National Register within Montford Point camp No. 1 Historic District: at MCB Camp Lejeune and requests additional documentation for these and additional buildings located to the north and east of these that cannot be seen on maps provided to SHPO:

- M401-M424
 - M603
 - M604
- **Montford Point Camps No. 2 and 2A Historic District** - SHPO recommends the following buildings be excluded from the district due to the repetitive nature of these buildings that can be found elsewhere at MCB Camp Lejeune:
 - M203
 - M255

SHPO concurs with the current boundaries as documented in *HAE*, with the above exclusions. However, in prior discussions MCB Camp Lejeune has proposed demolition of several buildings from this historic district in conjunction with the construction of a new consolidated classroom building within Montford Camp No. 1 Historic District buildings. To maintain the historic setting and continuity of the military landscape at **Montford Point Camps No. 2 and 2A Historic District** as a district eligible for inclusion in the National Register, SHPO is willing to delete the following buildings from the proposed district.

- M208
- M209
- M210
- M220
- M221
- M222
- M223
- M224
- M225
- M226
- M227
- M228
- M229

Additionally, during the site visit we noted overhead steam heating systems were not included as a character-defining element in the districts. Elements such as these contribute to the overall historic nature of these districts, and should be included in documentation as such.

- **Naval Hospital** - Building H1 as identified in *HAE* documentation is individually eligible for the National Register. Additionally, SHPO feels the following buildings, historically known as "Surgeon's Row," appear eligible for inclusion in the National Register and should be included with the Naval Hospital to form a historic district:
 - H25
 - H26
 - H27
 - H35
 - H41
 - H42

SHPO requests additional information for the following buildings as they are potentially eligible for inclusion in the National Register as part of the Naval Hospital/Surgeon's Row district:

- H49 - H69
- **Training Pool Historic Buildings** - SHPO recommends the following building be a contributing building within the new district formed from **Command Services Historic District and Regimental Area #3 Historic District**:
 - 236

Properties Not Eligible for the National Register

- SHPO feels the following buildings previously identified as eligible for inclusion in the National Register are not eligible due to loss of integrity:
 - BB28, **Barrage Balloon Classroom Historic Building**
 - 540, **Training Pool**

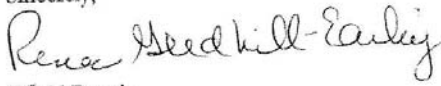
We are continuing our review of the Draft Programmatic Agreement and *Guidelines for Historic Buildings Management* submitted by MCB Camp Lejeune. The Draft PA refers to Appendices A, B, and C, but does not specifically name these. From the PA text and past correspondence, we gather Appendix B refers to the *HAE* and Appendix C is the *Guidelines for Historic Buildings Management* document. We would like to clarify the make-up of Appendices A, B, and C. Additionally, we are unable to locate a copy of Camp Lejeune's Integrated Cultural Resources Management Plan (ICRMP), which is referenced in the Executive Summary section of the *Guidelines*. Comments on the PA are forthcoming.

We would like to schedule a follow-up site visit during the week of July 12-16 to evaluate the potential boundary changes outlined above and discuss how we might assist Camp Lejeune in revising the *HAE*.

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,


David Brook

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UNITED STATES MARINE CORPS

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

IN REPLY REFER TO:
5090.8

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APR 09 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: ARCHAEOLOGICAL EVALUATION OF SIX SITES AT MARINE CORPS
BASE, CAMP LEJEUNE, AND ONE SITE AT MARINE CORPS AIR STATION,
NEW RIVER, ONSLOW COUNTY, NORTH CAROLINA

Dear Mr. Sandbeck:

Please find enclosed (enclosure 1) two copies of the draft report "Archaeological Evaluation of Six Sites at Marine Corps Base, Camp Lejeune, and One Site at Marine Corps Air Station, New River, Onslow County, North Carolina", prepared by Southeastern Archaeological Research (SEARCH), Inc., a consultant for Marine Corps Base, Camp Lejeune (MCBCL). This report details the results of Phase II National Register of Historic Places (NRHP) evaluation of archaeological sites 31ON631, 31ON1057, 31ON1059, 31ON1061, 31ON1077, 31ON1132, and 31ON1367. Enclosure 2 details the general location of the sites evaluated and proposed future construction that may impact them. Three of the seven sites may be directly impacted from proposed construction of a new four-battalion regimental complex in the Wallace Creek area of MCBCL, including one that would be impacted by cleanup of an existing skeet range (enclosure 3). Enclosure 4 details the location of contributing Buildings PT-4, PT-5 and PT-6 within the NRHP eligible discontinuous Parachute Training Historic District located in the proposed Wallace Creek Regimental Complex area of potential effect (APE). One site overlooking Wallace Creek may be impacted by construction of a proposed sewer line and associated staging area (enclosure 5); and, one archaeological site (enclosure 6) would be impacted by proposed construction of new Bachelor Enlisted Quarters (BEQ) at Marine Corps Air Station, New River (MCASNR).

The proposed Wallace Creek Regimental Complex APE encompasses approximately 551 acres (enclosure 3). The proposed action is to construct, operate and maintain a four-battalion regimental complex to accommodate the influx of approximately 2,100 personnel to MCBCL. The proposed facilities and infrastructure at the Wallace Creek Regimental Complex would fully support the operational and training

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mission of the four infantry battalions and Regimental Headquarters. All high probability soils within the Wallace Creek Regimental Complex APE have been previously surveyed (TRC FY 2002 Survey; Richardson 4th MEB 2003 Survey-SHPO letter dated July 18, 2005, ER04-0110; and Mathis MWR Road/Birch Street Extension project- SHPO letter dated October 28, 1998, ER99-7376). Three sites recorded during the TRC FY 2002 survey (31ON1059, 31ON1077, 31ON1132) lie within the Wallace Creek Regimental Complex APE (enclosure 3). Two of these would be directly impacted by construction of new facilities, and the third would be impacted during cleanup and relocation of the existing skeet range within the APE. As detailed in the enclosed draft report, sites 31ON1059, 31ON1077, and 31ON1132, are recommended not eligible for the NRHP based on SEARCH's investigation.

In addition to the three archaeological sites discussed above, Building PT-6, a NRHP eligible contributing building to the discontinuous Parachute Training Historic District, is located within the APE and adjacent to proposed building and parking construction (enclosure 4). The initial design for the Regimental Complex would have required the demolition of Building PT-6. However, re-design efforts were implemented to minimize the impact of new construction to this building and to the Parachute Training Historic District. Building PT-6 will now be maintained in its current condition. The remaining two buildings associated with the historic district (PT-4 and PT-5) are also located within the APE, but at some distance from the proposed construction area for the Regimental Complex, and would not be impacted by the undertaking. No direct impacts would occur to the Parachute Training Historic District or any NRHP eligible archaeological sites as a result of the proposed construction of the Wallace Creek Regimental Complex.

Archaeological sites 31ON631, 31ON1057, and 31ON1061 are located north and outside of the Wallace Creek Regimental Complex APE across Bearhead Creek from the proposed complex (enclosure 5). These three sites would not be impacted by the Regimental Complex construction. However, future proposed wastewater system upgrades would potentially impact archaeological site 31ON631. The proposed wastewater treatment modifications and upgrades are in the early planning stage, but disturbance of site 31ON631 is anticipated due to construction staging required for sewer line improvements (see enclosure 5). We will coordinate the remaining portion of the wastewater system upgrades with your office when complete plans become available. No known impacts to archaeological sites 31ON1057 and 31ON1061 are anticipated at this time. However, a proposed road

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for future development may be required in the area of the two sites. Plans for the road have not yet been developed, and will be coordinated with your office once completed at a sufficient level to conduct environmental analysis.

All high probability soils in the area of sites 31ON631, 31ON1057, and 31ON1061 have been surveyed (Goodwin and Associates, Inc., 1993 Wastewater Treatment Upgrade; Environmental Services, Inc., 1997 Natural Gas Pipeline; and TRC FY 2002 Silvicultural Prescription). Results from the current SEARCH investigation indicate that sites 31ON631 (recorded by Environmental Services, Inc.), 31ON1057 and 31ON1061 (recorded by TRC) lack sufficient integrity and research potential to be considered eligible for listing in the NRHP. Thus, future impacts resulting from proposed sewer upgrades and possible road construction would not impact any NRHP eligible historic properties.

Enclosure 6 details the location of archaeological site 31ON1367 at MCASNR. All high probability soils in the vicinity of this site have been previously surveyed (TRC FY 2005). Marine Corps Air Station, New River (MCASNR) proposes to construct new Bachelor Enlisted Quarters (BEQs) south of Douglas Road. The purpose and need for the proposed BEQ construction is driven by the deficiency of adequate housing for enlisted personnel. The area of potential effect (APE) for BEQ construction encompasses approximately 16 acres of forest land. Construction of the BEQs would impact archaeological site 31ON1367, which was recorded by TRC during the FY 2005 Silvicultural Prescription Survey. Results from the current investigation detailed in the enclosed draft report indicate that this site lacks sufficient integrity and research potential to be considered eligible for listing in the NRHP. Based on the results of SEARCH's investigation and previous surveys, no historic properties would be affected by the proposed BEQ construction.

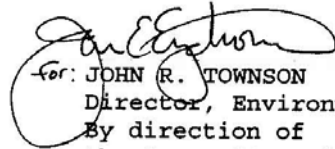
We have reviewed and concur with the recommendations provided in enclosure 1, and request your review and comments, or concurrence by April 30, 2008. Based on the results of the archaeological evaluation of seven sites by SEARCH, Inc., we have determined that no NRHP eligible archaeological sites will be affected by proposed construction of the Wallace Creek Regimental Complex, proposed sewer improvements at Wallace Creek, and proposed BEQ construction at MCASNR. In addition, the construction of the proposed Wallace Creek

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Regimental Complex would have no effect on the discontinuous Parachute Training Historic District.

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,



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

Enclosures:

1. Two Copies of Draft Report "Archaeological Evaluation of Six Sites at Marine Corps Base, Camp Lejeune, and One Site at Marine Corps Air Station, New River, Onslow County, North Carolina."
2. Project Locations.
3. Proposed Wallace Creek Regimental Complex and Cultural Resource Locations within the Proposed Area of Potential Effect.
4. Parachute Training Historic District within Proposed Wallace Creek Regimental Complex.
5. Proposed Sewer Upgrades and Location of Archaeological Sites in the Vicinity.
6. Proposed Location of BEQ Construction and Archaeological Site 31ON1367 at MCASNR.

	Post-It® Fax Note	7671	Date	5/5	# of pages	1
	To	Rick Richards	From	SHPO		
	Co./Dept.		Co.			
	Phone #		Phone #	919-807-6579		
	Fax #	910-451-1787	Fax #			

North Carolina Department of Cultural Resources
State Historic Preservation Office

Peter B. Sandbeck, Administrator

Michael F. Easley, Governor
 Eithen C. Evans, Secretary
 Jeffrey J. Crow, Deputy Secretary

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

April 28, 2008

John R. Townson, Director
 Environmental Management
 USMC Base Camp Lejeune
 PSC Box 2004
 Camp Lejeune, NC 28542-0004

Re: Archaeological Evaluation of Six (6) Sites at Marine Corps Base, Camp Lejeune, and One (1) Site at Marine Corps Air Station, New River, Onslow County, ER 08-0985

Dear Mr. Townson:

Thank you for your letter of April 9, 2008. We have reviewed the testing report and offer the following comments.

The report provides details regarding Phase II archaeological testing of sites 31ON631, 31ON1057, 31ON1059, 31ON1061, 31ON1077, 31ON1132, and 31ON1367. This work was undertaken by SEARCH, Inc. to determine the eligibility of the sites for listing on the National Register of Historic Places (NRHP). Based on the results of the work, all of the sites were recommended as ineligible for the NRHP. No further work was recommended for these sites. We concur with these recommendations.

The report meets our office's guidelines and those of the Secretary of the Interior. There are no specific concerns or corrections which need to be addressed in this regard. The present version of the document can stand as the final report 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 Gladhill-Earley, environmental review coordinator, at 919-807-6579. In all future communication concerning this project, please cite the above-referenced tracking number.

Sincerely,



Peter Sandbeck

cc: Bryan Farrell, Southeastern Archaeological Research, Inc.

bc: Claggett/Abbott
 County

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APPENDIX B
MIGRATORY BIRD INVENTORY

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No.	Species, Status, Family	Habitat
45	BLACK VULTURE (<i>Coragyps atratus</i>) Status: NCWRC-SC Family: Cathartidae	Open country, dumps, and urban areas.
48	BALD EAGLE (<i>Haliaeetus leucocephalus</i>) Status: Camp Lejeune's INRMP-T, NCWRC-T Family: Accipitridae	Breeds in forested areas near large bodies of water. Winters in coastal areas, along large rivers, and large unfrozen lakes.
49	AM. SWAL. T. KITE (<i>Elanoides forficatus</i>) Status: BCC, PIF Family: Accipitridae	Forested regions near marshes or swamps, often bottomland, or riverine forest, also open pine woodland.
51	AMERICAN KESTREL (<i>Falco sparverius</i>) Status: BCC, PIF Family: Falconidae	Breeds in a variety of open habitats, including meadows, grasslands, deserts, parkland, agricultural fields, urban and suburban areas.
53	COOPERS HAWK (<i>Accipiter cooperii</i>) Status: NCWRC-SC Family: Accipitridae	Breeds in deciduous, mixed, coniferous forests and open woodland. Becoming more common in suburban and urban areas.
77	LOGGERHEAD SHRIKE (<i>Lanius ludovicianus</i>) Status: NCWRC-SC Family: Laniidae	Open country with some shrubs and trees.
92	BROWN-HD.NTHTCH (<i>Sitta pusilla</i>) Status: BCC, PIF Family: Sittidae	Pine forests, especially in open, mature forests with periodic fires.
94	BROWN CREEPER (<i>Certhia americana</i>) Status: NCWRC-SC Family: Certhiidae	Coniferous and mixed coniferous-deciduous forests.
104	WOOD THRUSH (<i>Hylocichla mustelina</i>) Status: BCC, PIF Family: Turdidae	Breeds in the interior and edges of deciduous and mixed forests, in rural to urban areas, generally in cool, moist sites, often near water.
116	NORTH. PARULA W. (<i>Parula americana</i>) Status: BCC, PIF Family: Parulidae	Deciduous and coniferous forests, usually near water.
123	PRAIRIE WARBLER (<i>Dendroica discolor</i>) Status: BCC, PIF Family: Parulidae	Various shrubby habitats, including regenerating forests, dry brushy areas, open fields, old fields, young pine plantations, mangrove swamps, and Christmas-tree farms. Florida residents live in mangrove forests.
127	WORM-EATING WARB. (<i>Helmitheros vermivorum</i>) Status: PIF Family: Parulidae	Breeds in mature deciduous or mixed deciduous-coniferous forest with patches of dense understory, usually on steep hillside. Winters in tropical forests.

No.	Species, Status, Family	Habitat
129	SWAINSON'S WARB. (<i>Limnothlypis swainsonii</i>) Status: BCC, PIF Family: Parulidae	Breeds in swamps and southern forests with thick undergrowth, especially canebrakes and floodplain forests in lowlands and rhododendron-mountain laurel in Appalachians. Winters in tropical scrub, evergreen, and gallery forests.
152	LAUGHING GULL (<i>Larus atricilla</i>) Status: NAWCP Family: Laridae	Nests in marshes, on beaches, and on islands along coast. Found along coasts, in estuaries, bays, and inland lakes. Feeds along the ocean, on rivers, at landfills, and in urban parks.
154	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.
155	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.
175	CHUK-WIL'S-WIDOW (<i>Caprimulgus carolinensis</i>) Status: BCC Family: Caprimulgidae	Along edges of coniferous or mixed forests; often along rivers.
184	RED-COCKAD.WOOD (<i>Picooides borealis</i>) Status: NCWRC-E, PIF Family: Picidae	Open pine forest maintained by frequent fires, especially longleaf pine forests.
186	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.
191	HOODED WARBLER (<i>Wilsonia citrina</i>) Status: PIF Family: Parulidae	Dense shrubbery in mature deciduous woodlands, especially near streams.
199	PAINTED BUNTING (<i>Passerina ciris</i>) Status: BCC, PIF Family: Cardinalidae	Open brushlands, thickets, and scattered woodlands. Along Atlantic coast, also in hedges and yards.
201	BACHMAN'S SPAR. (<i>Aimophila aestivalis</i>) Status: NCWRC--SC and FSC; BCC, PIF Family: Emberizidae	Open pine or oak woods, brushy fields. Found primarily in open pine woods with understory of wiregrass, palmettos, and weeds, and in oak-palmetto scrub, grasslands.
221	ORCHARD ORIOLE (<i>Icterus spurius</i>) Status: BCC Family: Icteridae	Nests in gardens, orchards, open woods, wetlands, suburban areas, parks, along streams and lakes, and in large planted trees near houses. In winter found in tropical forests.

APPENDIX C
COASTAL CONSISTENCY DETERMINATION

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UNITED STATES MARINE CORPS

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

IN REPLY REFER TO:
5090.11.2
BEMD
MAY 01 2008

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

Dear Mr. Rynas:

The United States Marine Corps proposes to construct, operate, and maintain a four-battalion regimental complex in the Wallace Creek area of Marine Corps Base, Camp Lejeune to accommodate the influx of approximately 2,100 personnel.

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

A Coastal Consistency Determination is enclosed for your review. MCB Camp Lejeune requests that the Division of Coastal Management concur with this consistency determination.

If you have any questions or require additional information please contact Mr. Martin Korenek, Environmental Conservation Branch, (910) 451-7235 or martin.korenek@usmc.mil

Sincerely,

A handwritten signature in black ink that reads "John R. Townson".

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

Enclosure: 1. Coastal Consistency Determination for MCB Camp Lejeune, Wallace Creek Regimental Area

**FEDERAL COASTAL CONSISTENCY DETERMINATION FOR
WALLACE CREEK REGIMENTAL AREA
MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA**

April 2008

The United States Marine Corps has determined that implementing the proposed action is consistent to the maximum extent practicable with the enforceable policies of North Carolina's approved Coastal Management Program.

1.0 FEDERAL AGENCY ACTION

The United States Marine Corps proposes to construct, operate, and maintain a four-battalion regimental complex in the Wallace Creek area of Marine Corps Base (MCB) Camp Lejeune, Onslow County, to accommodate the influx of approximately 2,100 personnel (Figure 1, Location of Wallace Creek Regimental Area). The project area for the Wallace Creek Regimental Area is approximately 223 hectares (ha) (551 acres [ac]).

The proposed facilities and infrastructure are intended 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. The combined size of the proposed facilities would be approximately 177,421 square meters (sq m) (1,909,744 square feet [sq ft]). New parking lots would cover approximately 24 ha (59 ac). Proposed roads would be roughly 7 kilometers (km) (4 miles [mi]) in length. Approximately 1.3 km (0.8 mi) of Birch Street would be widened. An existing pesticide storage facility and associated structures along with the military working dog kennels would need to be demolished to make room for the new construction projects. Lastly, an existing skeet range in the Wallace Creek area would be closed. To date, the site selection process is in the early stages for identifying new locations for the military working dog kennels and the skeet range.

The purpose and need for this proposed action is to sustain the ability of the Marine Corps to meet the military and defense posture and challenges of the current era. Marine Corps forces are currently engaged in Operation Iraqi Freedom and Operation Enduring Freedom in Afghanistan. In order for the Marine Corps to continue to defend the world from grave danger of terrorism, they must be adequately and effectively trained to be mission-ready to meet all operational needs. The proposed influx of personnel would provide combatant commanders with the capabilities needed in these operations.

Current plans call for two existing infantry battalions to be co-located with the two new infantry battalions under the operational control of a Regimental Command. Consolidating battalion functions within a Regimental Area would not only accommodate the mission and training requirements for the two new battalions and the two existing battalions, but it would let each battalion have its command post closer to their barracks, allowing for better management of Marines.

This consistency determination assesses the proposed action for its applicability and consistency with the North Carolina Coastal Area Management Act and the Onslow County Land Use Plan. The information contained in this consistency determination is derived primarily from the Draft Environmental Assessment for the Wallace Creek Regimental Area, Marine Corps Base Camp Lejeune, Onslow County, North Carolina. Additional information regarding the proposed project can be found in the Draft Environmental Assessment, which is incorporated herein by reference.

2.0 NORTH CAROLINA COASTAL AREA MANAGEMENT ACT

In 1972, Congress passed the Coastal Zone Management Act, which encouraged states to keep the coasts healthy by establishing programs to manage, protect and promote the country's fragile coastal resources. Two years later, the North Carolina General Assembly passed the Coastal Area Management Act (CAMA). 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 three nautical mile 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 projects located outside of an AEC but with the potential to affect coastal resources. Both of these are explained in more detail below.

2.1 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
- 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

The following is an analysis of the applicability of the CAMA AEC policies to the proposed project and the project's consistency with those policies, when applicable. Figure 2 shows the location of the proposed action relative to the AECs in the project vicinity. The project is not located within an AEC.

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

The Wallace Creek project area includes three types of wetlands: estuarine, riverine, and palustrine. The majority of wetlands in the project area are palustrine forested wetlands along the floodplain of Wallace Creek and in association with stream tributaries of Bearhead Creek and Beaverdam Creek. Estuarine wetlands are found in proximity to Wallace Creek, while riverine wetlands are in the upper reaches of Beaverdam Creek. Under the proposed action, estuarine wetlands would be avoided, and mitigation for palustrine wetlands would be implemented as required by wetland permit requirements.

The proposed action would impact 0.09 ha (0.22 ac) of wetlands. As stated under 15A NCAC 7M .0700, MCB Camp Lejeune would obtain the necessary permits prior to construction and would implement mitigations as required by the permit conditions. Wetland and stream impacts would be limited to a road crossing and the intent is to design the crossing to meet conditions of Nationwide Permit 14, not to exceed 0.2 ha (0.5 ac) of wetland fill and 45.7 linear meters (150 linear feet) of stream impact. MCB Camp Lejeune has not developed the specific design and mitigation plan. However, land within the project area 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 Department of Defense lands (including the Greater Sandy Run Wetland Mitigation Bank on Camp Lejeune) and lands of other entities would be considered for mitigation purposes when consistent with the US Environmental Protection Agency, US Army Corps of Engineer, North Carolina Division of Water Quality guidelines, and/or permit provisions.

The upper reaches of Wallace Creek, Bearhead Creek, Beaverdam Creek and their tributaries are inland waters. The lower reaches of Wallace Creek are estuarine (Figure 2). 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. Therefore, these policies are not applicable to the proposed action.

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

The project area for the proposed action is not within an ocean hazard area. Therefore, policies on ocean hazard areas are not applicable.

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

The construction of the proposed facilities would not affect areas where there are small surface water supply watersheds or public water supply well fields. Therefore, policies protecting public water supplies are not applicable.

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

15A NCAC 07H.0505 (Coastal Areas That Sustain Remnant Species). There are no federally-listed threatened or endangered species that are located within the project area. However, the proposed project would require the clearing of approximately 64 ha (158 ac) of mixed pine-hardwood forest. This policy is not applicable.

15A NCAC 07H.0506 (Coastal Complex Natural Areas). Camp Lejeune has two designated natural areas: the CF Russell Longleaf Pine Natural Area and the Wallace Creek Natural Area. Both have been designated and registered as natural areas by the North Carolina Natural Heritage Program. However, both are located well beyond the project limits of the project area. This policy is not applicable.

15A NCAC 07H.0507 (Unique Coastal Geologic Formations). No unique geological formations are located within the proposed project area. This policy is not applicable.

15A NCAC 07H.0508 (Use Standards). There are no fragile coastal natural or cultural resources within the project area. Implementing the proposed action would not cause irreversible damage to natural systems or cultural resources, scientific, educational, or associative values, or aesthetic qualities. This policy is not applicable.

15A NCAC 07H.0509 (Significant Coastal Archaeological Resources). Three potentially eligible archaeological sites were identified within the boundaries of the proposed project area: 31ON1059, 31ON1077, and 31ON1132. These areas were discussed at the project kickoff meeting held at MCB Camp Lejeune on Thursday, 08 March 2007. Phase II field survey and evaluation of these sites was completed in November 2007. Preliminary results of the survey indicate that all three sites do not meet the National Register of Historic Places criteria for eligibility. MCB Camp Lejeune has requested concurrence that implementation of the proposed action would not affect any National Register of Historic Places-eligible archaeological sites. This policy is not applicable.

15A NCAC 07H.0510 (Significant Coastal Historic Architectural Resources). The Parachute Training Historic District and its three contributing resources, PT-4, PT-5, and PT-6, would all remain intact and protected by a 15.2 m (50 ft) buffer. The project is consistent with this policy.

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

2.2 GENERAL POLICY GUIDELINES

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

- Shoreline erosion policies
- Shorefront access policies
- Coastal energy policies
- Post-disaster policies
- Floating structure policies
- Mitigation 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.

The following is an analysis of the applicability of the General Policy Guidelines to the proposed project and the project's consistency with those policies, when applicable.

15A NCAC 07M.0200 (Shoreline Erosion Policies)

No ocean or estuarine shorelines are included in the project area for the proposed action, so these policies are not applicable (please refer to Figure 2).

15A NCAC 07M.0300 (Shorefront Access Policies)

Due to extensive daily military training, Camp Lejeune is a closed military installation. Historically, the public has not had beach access or uncontrolled water access (boat launches). The project would not change any existing public access to or use of the shorefront or water. Therefore, these policies are not applicable.

15A NCAC 07M.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.

15A NCAC 07M.0500 (Post-Disaster Policies)

These policies require that all state agencies prepare for disasters and coordinate their activities in the event of a coastal disaster. MCB, Camp Lejeune, Base Order P3440.6E, Destructive Weather, addresses how Camp Lejeune would prepare for potential disasters and would respond in the event of a disaster, including coordination with North Carolina emergency services. The proposed action is consistent with these policies.

15A NCAC 07M.0600 (Floating Structure Policies)

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

15A NCAC 07M.0700 (Mitigation Policy)

North Carolina's mitigation policy states that "Coastal ecosystems shall be protected and maintained as complete and functional systems by mitigating the adverse impacts of development as much as feasible, by enhancing, creating, or restoring areas with the goal of improving or maintaining ecosystem function and areal proportion." Impacts would 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 forest habitat and wildlife losses due to development of this site. The loss of upland forest habitat on this site is recognized as a locally important impact. However, in an ecosystem context, Camp Lejeune is actively working to maintain complete and functional ecosystems within the state's coastal zone. Camp Lejeune's participation with the state of North Carolina, and other conservation partners in a long-term encroachment partnering strategy has resulted in preservation of 1,546 ha (3,820 ac) of coastal lands identified by state, federal, and non-governmental partners as having significant or unique natural resources. The Marine Corps has contributed over \$10 million dollars to restrict development and conserve wildlife habitat on large land tracts adjacent to and in the vicinity of Camp Lejeune in support of regional conservation initiatives.

Based on the conceptual plan for the layout of regimental facilities at Wallace Creek, the proposed action has the potential to adversely impact jurisdictional wetlands and waters of the US at MCB Camp Lejeune. The proposed action would impact approximately 0.09 ha (0.22 ac) of jurisdictional wetlands in the Wallace Creek Regimental Area. Other wetlands are present along the site boundary. 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.

The proposed project would be designed to avoid impacts to wetlands and waters of the US. 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 Department of Defense lands (including the Greater Sandy Run Wetland Mitigation Bank on Camp Lejeune) and lands of other entities would be considered for mitigation purposes when consistent with the US

Environmental Protection Agency, US Army Corps of Engineer, 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. These permits would include the Clean Water Act, Section 404 wetland permit from the US Army Corps of Engineers (Nationwide or Individual Permit depending on the quantity of wetlands and waters of the US affected) and the Clean Water Act, Section 401 Water Quality Certification from the North Carolina Department of Environment and Natural Resources, Division of Water Quality.

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.

MCB, Camp Lejeune, Base Order P5090.2A, Chapter 11, requires the use of native plants in landscaping. Native plant species would be used for landscaping to the extent practicable. No non-native, invasive vegetation would be used in any temporary or permanent landscaping.

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 on-site construction supervisor 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.

Other permits and approvals for the proposed action include:

- Erosion and Sedimentation Control Plan approval by North Carolina Department of the Environment and Natural Resources, Division of Land Resources, Land Quality Section
- Stormwater Management Permit from the North Carolina Department of Environment and Natural Resources, Division of Water Quality
- Non-Discharge Sewer Extension Permit from the North Carolina Department of Environment and Natural Resources, Division of Water Quality, Non-Discharge Branch
- Water Connection Permit from the North Carolina Department of Environment and Natural Resources, Public Water Supply Section
- Clean Air Act, Title V Construction and Operation Permit from the North Carolina Department of Environment and Natural Resources, Division of Air Quality
- Concurrence from the North Carolina State Historic Preservation Officer (NC SHPO) on cultural resources effects findings

The proposed action would be consistent with this policy.

15A NCAC 07M.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 State-approved sedimentation/erosion and control plans and stormwater permits. These permits are issued by the NCDENR and reflect the most up-to-date requirements outlined in the State's Best Management Manual. In addition, since MCB Camp Lejeune is located in Onslow County which is considered a Phase II Coastal County, the Base must follow the requirements that are found in stormwater requirements 15A NCAC 02H.1005.

MCB Camp Lejeune is currently covered under a Phase I NPDES stormwater permit. This permit required the Base to develop and implement a Stormwater Pollution Prevention Plan which recommends measures to minimize pollutants from entering stormwater runoff from Base industrial activities.

Under the NPDES 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 and landscaping in select areas. This vegetation would aid in the control of stormwater runoff and to assure effective and continuous control of erosion and pollution.

As a result, the proposed action is not expected to impair coastal water quality. The project would not be located in primary or secondary nursery areas (refer to Figure 2). Implementation of the proposed action would be consistent with coastal water quality policies.

15A NCAC 07M.0900 (Policies on Use of Coastal Airspace)

The proposed action does not involve the use of coastal airspace, so these policies are not applicable.

15A NCAC 07M.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 so these policies are not applicable.

15A NCAC 07M.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, so these policies are not applicable.

15A NCAC 07M.1200 (Policies on Ocean Mining)

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

3.0 ONSLOW COUNTY COASTAL MANAGEMENT POLICIES

The CAMA required local governments in each of the 20 coastal counties in the state to prepare, 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 county has zoning controls applicable to only one special area, Golden Acres in Stump Sound Township. The county does, however, require review of subdivisions, providing for minimum standards, enforced by the county Planning Department. Incorporated areas within the county implement their own zoning regulations. Onslow County's *Citizen's Comprehensive Plan for Onslow County*, adopted in 2003, also addresses land use planning in relation to the Coastal Area Management Act. Table 1 contains a list of Onslow County's comprehensive plan policies and their applicability to this project.

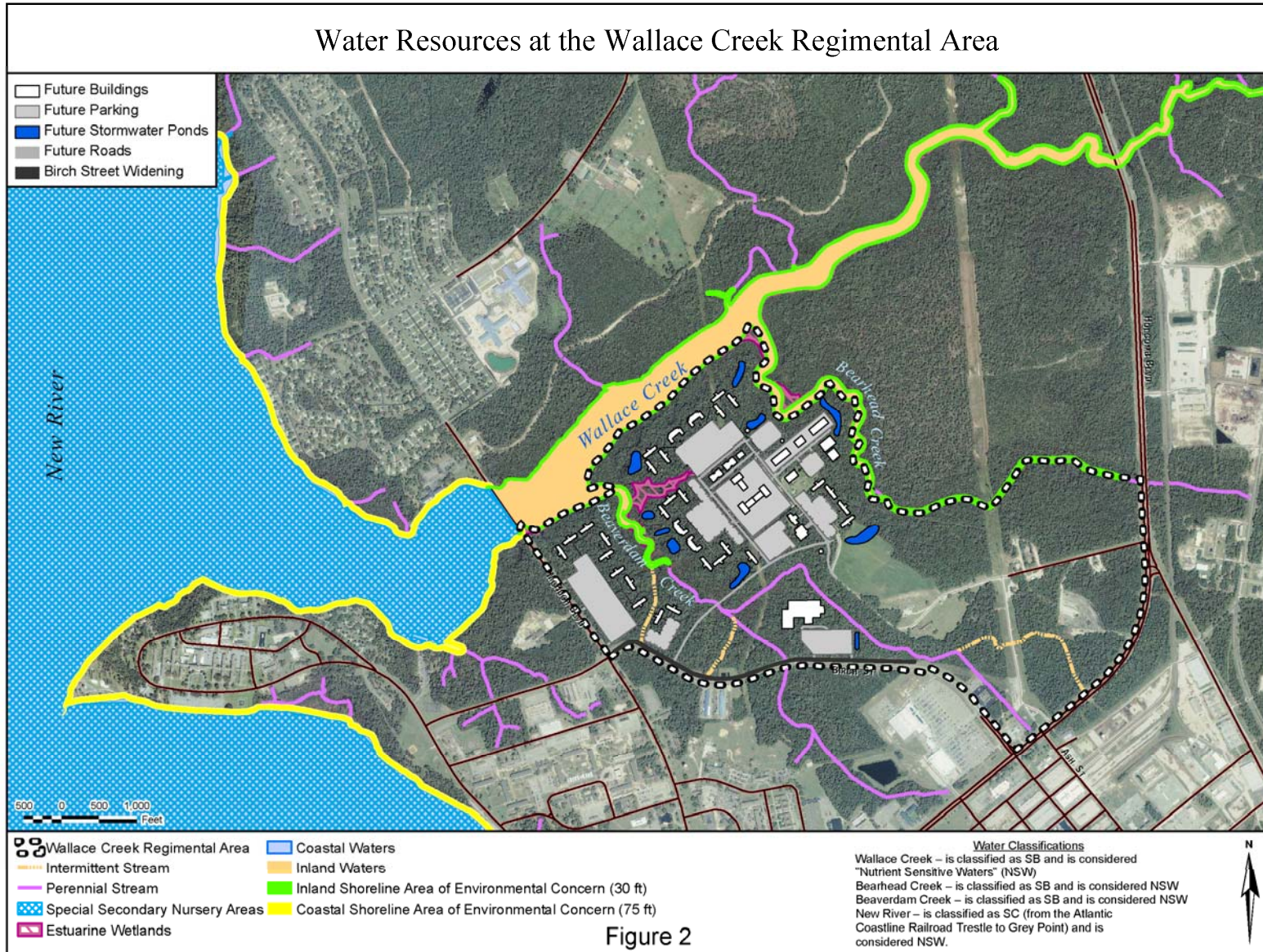
Table 1
Onslow County Comprehensive Plan Policies

Land Use and Development Policies	Applicability
Preferred Development Pattern	Not Applicable
Housing and Neighborhood Development	Not Applicable
Commercial and Office Development	Not Applicable
Industrial Development	Not Applicable
Agricultural and Rural Area Preservation	Not Applicable
Waterfront and Waterborne Development	Not Applicable
Infrastructure and Service Policies	Applicability
Transportation	Consistent
Water and Sewer Services	Consistent
Stormwater Management, Drainage and Flooding	Consistent
Solid Waste Management	Consistent
Natural Resources Management and Use Policies	Applicability
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
Economy and Culture Policies	Applicability
Economic Development	Not Applicable
The Military and the Community	Consistent
Educational Facilities	Consistent
Parks and Recreation Facilities	Not Applicable
Cultural History, Historic Preservation/Revitalization	Not Applicable
Community Appearance	Not Applicable

4.0 CONCLUSION

In conclusion, after careful consideration of the proposed action, the 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.







North Carolina Department of Environment and Natural Resources
Division of Coastal Management

Michael F. Easley, Governor

James H. Gregson, Director

William G. Ross Jr., Secretary

June 23, 2008

John R. Townson
Director, Environmental Management
Marine Corps Base
PSC Box 2004
Camp Lejeune, NC 28542-0004

SUBJECT: CD08-036 – Consistency Concurrence for the Proposed Establishment of a Regimental Complex at Wallace Creek, Camp Lejeune, Onslow County (DCM#20080065)

Dear Mr. Townson:

We received your Consistency Determination on May 15, 2008 for the proposed establishment of a regimental complex at Wallace Creek, at Camp Lejeune in Onslow County, North Carolina. Camp Lejeune proposes to construct, operate, and maintain a four battalion regimental complex, which includes operational facilities, maintenance facilities, support facilities, housing, roads, and other related infrastructure. Approximately 2,100 personnel will be assigned to this area. The project area for the Wallace Creek Regimental Area is approximately 551 acres in size.

North Carolina's coastal zone management program consists of, but is not limited to, the Coastal Area Management Act, the State's Dredge and Fill Law, Chapter 7 of Title 15A of North Carolina's Administrative Code, and the land use plan of the County and/or local municipality in which the proposed project is located. It is the objective of the Division of Coastal Management (DCM) to manage the State's coastal resources to ensure that proposed Federal activities would be compatible with safeguarding and perpetuating the biological, social, economic, and aesthetic values of the State's coastal waters.

To solicit public comments, DCM circulated a description of the proposed project to State agencies that would have a regulatory interest. No comments asserting that the proposed activity would be inconsistent with the State's coastal management program were received. A copy of the responses received has been attached for reference.

DCM has reviewed the submitted information pursuant to the management objectives and enforceable policies of Subchapters 15A NCAC 07H and 15A NCAC 07M of Chapter 7 of Title 15A of North Carolina's Administrative Code which are a part of the State's certified coastal management program and concurs that the proposed Federal activity, as conditioned below, is consistent, to the maximum extent practicable, with the enforceable policies of North Carolina's coastal management program.

400 Commerce Avenue, Morehead City, North Carolina 28557-3421
Phone: 252-808-2808 \ FAX: 252-247-3330 \ Internet: www.nccoastalmanagement.net

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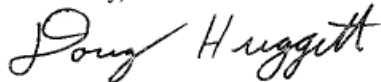
In order to be found consistent with North Carolina's coastal management, the US Marine Corps (Applicant) shall comply with the following conditions of concurrence.

- Should the proposed project result in wetland impacts of either equal to or greater than 0.5 acres, the Applicant shall obtain written approval of a water quality certification from the North Carolina Division of Water Quality before initiating any land disturbing activities. A copy of that certification shall be mailed to DCM within two weeks of receipt. The Applicant shall comply with the requirements of the water quality certification.
- The Applicant, prior to initiating any land disturbing activities, shall obtain the approval of the NC Division of Land Resources of an erosion and sediment control plan. The Applicant shall comply with the requirements of the approved sediment and erosion control plan. A copy of the plan approval shall be forwarded to DCM.
- The Applicant, prior to initiating any land disturbing activities, shall obtain a stormwater permit from the NC Division of Water Quality. The Applicant shall comply with the requirements of the stormwater permit. A copy of the permit shall be forwarded to DCM.

This letter of concurrence is contingent on the Federal agency agreeing with the conditions stated above. In the event that the Federal agency does not agree with the conditions of concurrence, this letter effectively becomes a letter of State "Objection". Should the Federal agency not agree with the conditions stated above, a letter of non-agreement should be sent to DCM. The procedures of 15 CFR 930.43 would then need to be followed.

Should the proposed action be modified, a revised consistency determination could be necessary. This might take the form of either a supplemental consistency determination pursuant to 15 CFR 930.46, or a new consistency determination pursuant to 15 CFR 930.36. Likewise, if further project assessments reveal environmental effects not previously considered by the proposed development, a supplemental consistency certification may be required. If you have any questions, please contact Stephen Rynas at 252-808-2808. Thank you for your consideration of the North Carolina Coastal Management Program.

Sincerely,



Doug Huggett
Manager, Major Permits and Consistency Unit

Cc: Steve Everhart, Division of Coastal Management
Tere Barrett, Division of Coastal Management
Molly Ellwood, NC Wildlife Resources Commission
Shannon Jenkins, NC Division of Environmental Health

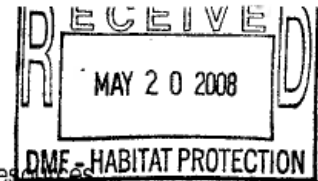


North Carolina Department of Environment and Natural Resources
Division of Coastal Management

Michael F. Easley, Governor

James H. Gregson, Director

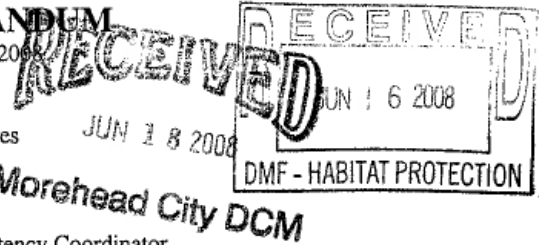
William G. Ross Jr., Secretary



(E)

MEMORANDUM

May 19, 2008



TO: Anne Deaton
NCDENR - Division of Marine Fisheries
P.O. Box 769
Morehead City, NC 28557-0769

FROM: Stephen Rynas, AICP; Federal Consistency Coordinator

SUBJECT: Consistency Submission for Proposed Establishment of a Regimental Complex (DCM#20080065)

LOCATION: Wallace Creek Area, Camp Lejeune, Onslow County; North Carolina

This document is being circulated for consistency review and comment by **June 6, 2008**. Your responses will assist us in determining whether the proposed project would be consistent with the State's Coastal Management Program. If the proposed project does not conform to your requirements, please identify the measures that would be necessary to bring the proposed project into conformance. If you have any additional questions regarding the proposed project you may contact me at 252-808-2808 or e-mail me at: "stephen.rynas@ncmail.net".

REPLY

- No Comment.
- This office supports the project as proposed.
- Comments to this project are attached.
- This office objects to the project as proposed.

Signed: Anne Deaton

Date: 6/11/08
6/13/08

CORRECTIONS

Please identify any corrections, additions, or deletions that should be made in terms of contact information.

RETURN COMPLETED FORM

to
Stephen Rynas, Federal Consistency Coordinator
NC Division of Coastal Management
400 Commerce Avenue
Morehead City, NC 28557-3421



RECEIVED

JUN 5 2008

North Carolina Department of Environment and Natural Resources
Division of Coastal Management

Michael F. Easley, Governor

James H. Gregson, Director

William G. Ross Jr., Secretary

MEMORANDUM

May 19, 2008

TO: Molly Ellwood
Division of Inland Fisheries, Habitat Conservation Program
NC Wildlife Resources Commission
127 Cardinal Drive Extension
Wilmington, NC 28405-5406

FROM: Stephen Rynas, AICP; Federal Consistency Coordinator

SUBJECT: Consistency Submission for Proposed Establishment of a Regimental Complex (DCM#20080065)

LOCATION: Wallace Creek Area, Camp Lejeune, Onslow County; North Carolina

This document is being circulated for consistency review and comment by **June 6, 2008**. Your responses will assist us in determining whether the proposed project would be consistent with the State's Coastal Management Program. If the proposed project does not conform to your requirements, please identify the measures that would be necessary to bring the proposed project into conformance. If you have any additional questions regarding the proposed project you may contact me at 252-808-2808 or e-mail me at: "stephen.rynas@ncmail.net".

REPLY

- No Comment.
- This office supports the project as proposed.
- Comments to this project are attached.
- This office objects to the project as proposed.

Signed:

Date: 4 June 2008

CORRECTIONS

Please identify any corrections, additions, or deletions that should be made in terms of contact information.

RETURN COMPLETED FORM

to
Stephen Rynas, Federal Consistency Coordinator
NC Division of Coastal Management
400 Commerce Avenue
Morehead City, NC 28557-3421



North Carolina Department of Environment and Natural Resources
Division of Coastal Management

Michael F. Easley, Governor

James H. Gregson, Director

William G. Ross Jr., Secretary

MEMORANDUM

May 19, 2008

TO: John Fear
Research Coordinator
NC National Estuarine Research Reserve
101 Pivers Island Road
Beaufort, NC 28516

FROM: Stephen Rynas, AICP; Federal Consistency Coordinator

SUBJECT: Consistency Submission for Proposed Establishment of a Regimental Complex
(DCM#20080065)

LOCATION: Wallace Creek Area, Camp Lejeune, Onslow County; North Carolina

This document is being circulated for consistency review and comment by **June 6, 2008**. Your responses will assist us in determining whether the proposed project would be consistent with the State's Coastal Management Program. If the proposed project does not conform to your requirements, please identify the measures that would be necessary to bring the proposed project into conformance. If you have any additional questions regarding the proposed project you may contact me at 252-808-2808 or e-mail me at: "stephen.rynas@ncmail.net".

REPLY

- No Comment.
- This office supports the project as proposed.
- Comments to this project are attached.
- This office objects to the project as proposed.

Signed: _____

Date: _____

5-27-08

CORRECTIONS

Please identify any corrections, additions, or deletions that should be made in terms of contact information.

RETURN COMPLETED FORM

to

Stephen Rynas, Federal Consistency Coordinator
NC Division of Coastal Management
400 Commerce Avenue
Morehead City, NC 28557-3421



RECEIVED
MAY 21 2008

North Carolina Department of Environment and Natural Resources
Division of Coastal Management

Michael F. Easley, Governor

James H. Gregson, Director

William G. Ross Jr., Secretary

MEMORANDUM

May 19, 2008

RECEIVED
JUN 9 2008

Morehead City DCM

TO: Dan Sams
NCDENR - Division of Land Resources
127 Cardinal Drive Extension
Wilmington, NC 28405-5406

FROM: Stephen Rynas, AICP; Federal Consistency Coordinator

SUBJECT: Consistency Submission for Proposed Establishment of a Regimental Complex (DCM#20080065)

LOCATION: Wallace Creek Area, Camp Lejeune, Onslow County; North Carolina

This document is being circulated for consistency review and comment by **June 6, 2008**. Your responses will assist us in determining whether the proposed project would be consistent with the State's Coastal Management Program. If the proposed project does not conform to your requirements, please identify the measures that would be necessary to bring the proposed project into conformance. If you have any additional questions regarding the proposed project you may contact me at 252-808-2808 or e-mail me at: "stephen.rynas@ncmail.net".

REPLY

The complex will require erosion and sediment control plan application and approval.

- No Comment.
- This office supports the project as proposed.
- Comments to this project are attached.
- This office objects to the project as proposed.

Signed:

Date: MAY 23, 2008

CORRECTIONS

Please identify any corrections, additions, or deletions that should be made in terms of contact information.

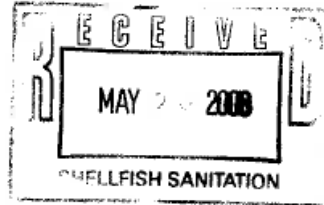
RETURN COMPLETED FORM

to
Stephen Rynas, Federal Consistency Coordinator
NC Division of Coastal Management
400 Commerce Avenue
Morehead City, NC 28557-3421



North Carolina Department of Environment and Natural Resources
Division of Coastal Management Morehead City DCM
Michael F. Easley, Governor James H. Gregson, Director William G. Ross Jr., Secretary

MEMORANDUM
May 19, 2008



TO: Patty Fowler
Shellfish Sanitation District
NCDENR - Division of Environmental Health
Marine Fisheries Building, P.O. Box 769
Morehead City, NC 28557-0769

FROM: Stephen Rynas, AICP; Federal Consistency Coordinator

SUBJECT: Consistency Submission for Proposed Establishment of a Regimental Complex (DCM#20080065)

LOCATION: Wallace Creek Area, Camp Lejeune, Onslow County; North Carolina

This document is being circulated for consistency review and comment by **June 6, 2008**. Your responses will assist us in determining whether the proposed project would be consistent with the State's Coastal Management Program. If the proposed project does not conform to your requirements, please identify the measures that would be necessary to bring the proposed project into conformance. If you have any additional questions regarding the proposed project you may contact me at 252-808-2808 or e-mail me at: "stephen.rynas@ncmail.net".

REPLY

- No Comment.
- This office supports the project as proposed.
- Comments to this project are attached.
- This office objects to the project as proposed.

Signed: Andrew Hamm for Patti Fowler Date: 5/20/08

CORRECTIONS

Please identify any corrections, additions, or deletions that should be made in terms of contact information.

RETURN COMPLETED FORM

to
Stephen Rynas, Federal Consistency Coordinator
NC Division of Coastal Management
400 Commerce Avenue
Morehead City, NC 28557-3421