

2615 Major upgrades to the sanitary sewer system are currently underway; major repairs to the 18- to
2616 24-inch pipe are on-going. The sewer construction associated with the new barracks project will
2617 accommodate future growth as well.

2618 **5.10.1.3. Solid Waste**

2619 Solid waste generated at Fort Jackson is primarily municipal solid waste, special waste and
2620 demolition debris. Municipal solid wastes generated on-Post are placed in dumpsters and
2621 collected, transported, and disposed of by a private contractor in an off-Post municipal solid
2622 waste landfill. One active sanitary landfill exists on the east portion of the Installation near Ivy
2623 Road.

2624 The DoD has directed Fort Jackson to continuously reduce the quantity of nonhazardous solid
2625 waste generated, increase the percentage of nonhazardous solid waste diverted from disposal
2626 facilities (diversion rate), and increase the economic benefit of solid waste diversion (Metts,
2627 2009). Fort Jackson was part of the Deconstruction Waste Diversion project, which involved the
2628 stockpiling, crushing and reuse of 100 percent of the concrete from seven structures (including
2629 a 19,750-square-foot cold-storage building). The project reused approximately 95 percent of the
2630 processed concrete on the Installation for road improvements (USAEC, 2012).

2631 Fort Jackson has an active recycling program regulated by FJ Reg 200-9. There are several
2632 drop-off sites for qualifying materials located throughout the Installation.

2633 **5.10.1.4. Stormwater Systems**

2634 Fort Jackson operates under a NPDES Permit (Number SCG731156) effective April 2011 and
2635 expiring December 2015 (USEPA, 2012d). DPW owns and operates Fort Jackson's storm
2636 drainage system, which functions through a network of pipes (approximately 326,000 linear feet
2637 with the largest pipe being 60" in diameter) and catch basins into a series of drainage swales
2638 and natural drainageways as well as several lakes on the Installation.

2639 Specifically, stormwater drains from high points along the west and east sides of the
2640 cantonment area toward the center of the Post and into Semmes Lake and associated creeks.
2641 Stormwater is not treated prior to entering these natural systems. The storm drainage
2642 infrastructure is in poor condition and in need of repair. A 2010 *Storm Utilities Assessment*
2643 *Technical Report* analyzed problem areas including undersized pipes, deficient stormwater
2644 structures, lack of basic maintenance, sinkholes, and poor grading for drainage. These issues
2645 create ponding, erosion, and safety concerns and prevent a fully functioning system. The report
2646 provides recommendations to rehabilitate these problem areas, which include six areas of
2647 significant flooding. Another serious concern is wastewater that has entered the storm system
2648 via a broken pipe in the sanitary sewer and storm drainage systems.

2649 Drainage facilities at Fort Jackson are regulated by DoD Unified Facilities Criteria (UFC 3-210-
2650 10, "*Low Impact Development*") and by the Installation's MS-4 stormwater discharge permit

2651 (issued by SCDHEC). DPW is responsible for enforcing stormwater regulations on the
2652 Installation. Prior to any significant construction, permits must be obtained by the SCDHEC.

2653 **5.10.1.5. Energy Sources**

2654 ***Electrical System***

2655 The Fort Jackson DPW owns, operates, and maintains its own electric distribution system. The
2656 distribution system provides power for approximately 800 buildings, including the four Central
2657 Energy Plants (CEPs), which consume the most electricity on the Installation. South Carolina
2658 Electric and Gas (SCE&G) supplies power to Fort Jackson through a 115-kilovolt (kV) overhead
2659 distribution line that connects to a single substation northwest of the intersection of Lee Road
2660 and Hill Street. It comes in at a capacity of 44.8 megavolt amperes (MVA) and the voltage is
2661 stepped down to 8.32 kV.

2662 Power consumption is higher than expected due to the addition of new facilities and the higher
2663 usage of electronics in the barracks. Current conditions indicate that the electric capacity has
2664 exceeded 80%. There are plans to construct a second 44.8 MVA substation in the northwest
2665 corner of the Installation in order to provide redundancy to the electric distribution system. The
2666 new substation will be partly owned by both the supplier and the Government. The supplier will
2667 own the transformation portion and the Government will own the distribution portion. Both
2668 substations will have expandable capability should the future consumption exceed 89.6 MVA.

2669 In 2009, ten hydrogen fuel cells were installed to replace the Uninterruptable Power Supply
2670 (UPS) system used to provide uninterrupted temporary power to the energy monitoring and
2671 control facility, telecommunications building, and emergency services center.

2672 The Post's distribution system is approximately 30 years old and includes about 64 miles of
2673 overhead and underground, primary, and secondary lines located on-Post. Only 10 percent of
2674 the lines are underground and there is currently no available funding to convert the electric from
2675 overhead to underground. The electric distribution system needs maintenance including (but
2676 not limited to) the poles, cables, transformers, etc. The Installation is currently building a
2677 permanent staff to maintain the system.

2678 ***Heating and Cooling Systems***

2679 The heating and cooling plants at Fort Jackson are located within four CEPs, built between
2680 1966 and 2005. Seventy to eighty percent of the heating and cooling on Fort Jackson is
2681 supplied by the CEPs. Fort Jackson DPW conducted an evaluation of the CEPs to determine
2682 the capability of the individual CEP systems and required upgrades necessary to support all
2683 current and future construction, including projects designated to be supported by stand-alone
2684 systems.

2685 Overall, the heating and cooling infrastructure is aging and is in need of rehabilitation. Moving
2686 forward, the Installation would like to interconnect the CEPs to minimize the number of boilers

2687 for energy saving purposes and move away from centralized heating systems for better
2688 efficiency. Additionally, it is desired that a looped system be created to allow for growth and to
2689 optimize distribution. Currently there is no flexibility to backfeed.

2690 **Natural Gas**

2691 The natural gas system at Fort Jackson is owned, operated, and maintained by the Installation.
2692 SCE&G supplies natural gas to the Installation, primarily for heating and hot water generation
2693 through a regulator and meter station north of Gate 1. Approximately 567 million cubic feet of
2694 natural gas is delivered from SCE&G, making up approximately 50% of the Installation's overall
2695 energy consumption. The natural gas system is nearing maximum capacity. Improvements to
2696 the gas system have been limited to repairs only. Additionally, the single natural gas entry point
2697 creates a lack of redundancy within the system.

2698 The natural gas system is connected to the propane plant for backup. The propane plant can
2699 sustain the mission for up to eight days. The propane plant includes three 60,000 gallon buried
2700 tanks adjacent to CEP #2. The tanks are in need of maintenance and upgrades. The distribution
2701 system consists of approximately 37 miles of underground pipe. There are 108 monitoring
2702 locations and most of the main buildings are metered. The major problem existing with the gas
2703 system is lack of maintenance. However, there are plans to eventually phase out natural gas
2704 and switch to electric. In particular, the family housing should all be converted to electric within
2705 the next two years.

2706 The *Gas Utilities Assessment Technical Report* included physical inspection of the gas
2707 distribution system and recommended improvements.

2708 **Geothermal**

2709 Geothermal heating and cooling systems are present in the Palmetto Lodge and Kennedy Hall;
2710 however, Kennedy Hall is no longer operational.

2711 **5.10.1.6. Communication**

2712 Fort Jackson utilizes the Network Enterprise Center (NEC), which is essentially the Army's
2713 defense network, for its telephone and internet connection services to all buildings, with the
2714 exception of the RCI housing area. RCI has a system independent of the Post's
2715 telecommunications system. An Installation Information Infrastructure Modernization Program
2716 (I3MP) is being implemented in which all of the switches and cables will be upgraded. As part
2717 of these efforts, major duct systems will be installed to accommodate future development, a
2718 fiber loop will be installed around all range areas, and two new communication shelters will be
2719 constructed.

2720 A majority of the telecommunications lines remain underground, but there are still some areas,
2721 particularly in the ranges, where overhead lines exist. There are no plans to change all the
2722 overhead lines to underground, but any new construction requires underground lines.

2723 **5.10.2. Transportation Systems**

2724 This section describes the transportation system within the ROI in terms of access and
 2725 circulation. The ROI for transportation is defined as the Fort Jackson Installation and the
 2726 immediate vicinity. Fort Jackson has immediate access to an established transportation
 2727 network that serves its mission of collecting soldiers for basic training from locations nationwide.
 2728 While the primary means of transportation to the Installation is via roadway network, Fort
 2729 Jackson's proximal location to the greater Columbia region provides potential connectivity to a
 2730 transportation network that adds mass transit and air, rail, port, and freight facilities as well as
 2731 pedestrian trails and bike paths.

2732 **5.10.2.1. Highways and Roads**

2733 ***Off-Post Roadways***

2734 The greater Columbia regional roadway network in the vicinity of Fort Jackson serves the
 2735 community by providing: local access to nearby destinations, major commuter routes that
 2736 connect Fort Jackson to other outlying communities and the Columbia core, and long-distance
 2737 access to the entire eastern United States for both commercial and personal vehicle traffic. This
 2738 network includes three major interstates that converge in Columbia to form an informal beltway
 2739 around the city.

2740 Primary access to the Installation is provided via Forest Drive, Jackson Boulevard, and I-77.
 2741 Strom Thurmond Boulevard and Fort Jackson Boulevard provide access to Fort Jackson's main
 2742 cantonment via interchanges with I-77. Fort Jackson Boulevard and Gate 1 connect the
 2743 southern portion of the cantonment to I-77; Forest Drive/South Carolina State Route 12 (SC
 2744 12)/Strom Thurmond Boulevard and Gate 2 provide access to the western and northern portion
 2745 of the cantonment. I-77 is used by the majority of personnel, visitors, and incoming/outgoing
 2746 basic training soldiers to access the Installation, as three of the Installation's four Access
 2747 Control Points (ACP) are directly served via I-77. While this proximal location to I-77 provides
 2748 immediate, easy access to a major interstate, it also causes issues with queuing and congestion
 2749 during peak commuter periods. Interstate 20 (I-20) parallels Fort Jackson's northern boundary
 2750 but does not directly bound the Installation nor directly provide access to any ACP. Interstate
 2751 26 (I-26) forms the western side of the beltway around Columbia. The majority of personnel
 2752 residing off-Post use Gate 2 for daily access to the installation. Various secondary roads
 2753 provide access to the Installation from the north, south, east, and west. Table 5-11 highlights
 2754 nearby roadways and their annual average daily traffic (AADT) volumes (Fort Jackson 2011a).

2755 **Table 5-11 Fort Jackson Adjacent Roadways Annual Average Daily Traffic (AADT)**

Roadway Segment	Annual Average Daily Traffic (AADT)
I-77 at Fort Jackson Boulevard Exit	58,300
I-77 to SC 12/Strom Thurmond Boulevard	71,400
Strom Thurmond Boulevard at SC-12	17,100
Fort Jackson Boulevard	60,000
Garner's Ferry Road (378) to Fort Jackson Boulevard	77,000

2756 Source: SCDOT 2010

2757 Due to the urban nature of the greater Columbia region and Fort Jackson's location within that
 2758 region, commuting trips to the Installation affect traffic on all classifications of roadways, from
 2759 the major interstates to the local highways and streets. In general, the intersections on the road
 2760 network around Fort Jackson exhibit heavy queuing and congestion during peak periods in both
 2761 the morning and afternoon due to daily trips of installation personnel and visitors. Additionally,
 2762 the influx of visitor traffic on Graduation and Family Days at the Installation further negatively
 2763 impacts the roadway network directly outside the installation.

2764 ***On-Post Roadways and Gate Traffic***

2765 The goal of the internal transportation network at Fort Jackson is to safely distribute tactical and
 2766 non-tactical vehicles, from, and within the Installation with a minimal amount of congestion while
 2767 providing for troop movements, pedestrians, and other network users. Internal transportation
 2768 within Fort Jackson is provided via a network of paved primary, secondary, and tertiary roads,
 2769 as well as a vast system of unpaved roads and fire breaks that is used extensively for training
 2770 operations (Figure 5.1). Fort Jackson has more than 207 miles of roads, of which approximately
 2771 110 are paved and 74 are unpaved. Paved roads have a bituminous surface and are in
 2772 generally good condition. The loose surface and dirt roads are in the training and range areas
 2773 outside the cantonment area.

2774 In general, roadways within the cantonment area can be characterized as continuous two- to
 2775 four-lane roadways with 12-foot travel lanes, paved shoulders, and sidewalk. These roadways
 2776 form a loose grid pattern. Primary east-west roadways include Boyden Arbor Road, Hampton
 2777 Parkway, Strom Thurmond Boulevard, Semmes Road, and Washington Road. Primary north-
 2778 south roadways include Jackson Boulevard, Lee Road, and Dixie Road. Overall, few issues
 2779 with traffic congestion occur across the existing roadway network, primarily within the
 2780 cantonment area on normal weekdays (Fort Jackson 2011a {PAL EA}). Several intersections
 2781 along Strom Thurmond Boulevard, Semmes Road, and Forest Drive are congested or partially
 2782 congested during peak travel periods (MSD and DCTEA 2011). There is no continuous internal
 2783 perimeter road to patrol the Installation boundary. Currently, there are no funded improvements
 2784 including widening or realignment of any internal roadways.

2785 Fort Jackson can be accessed by four gates. ACPs are required as per anti-terrorism/force
2786 protection (AT/FP) requirements in order to maximize Installation security. These gates are
2787 located within the vicinity of the cantonment area and are the only right-of-entries into Fort
2788 Jackson that have permanent and standardized facilities to safely screen vehicular movements.
2789 Gate 1 (Fort Jackson Boulevard) and Gate 5 (Semmes Road) may only be used by personnel
2790 with a vehicle decal. Gate 2 (Main Gate to Strom Thurmond Boulevard) is the Installation's
2791 main entrance for unescorted visitors and is the only ACP that has continuous hours of
2792 operation. Gate 4 (Boyden Arbor Road) serves all traffic for Graduation Days and must be used
2793 by all commercial and delivery vehicles. During peak commuter periods on normal weekdays,
2794 queuing and congestion occur at Gates 1, 2, and 4 causing substantial delays. Inbound, the
2795 queue of traffic waiting to be processed through the gates can accumulate onto I-77.

2796
2797 In general, there are minimal issues with traffic congestion or circulation within the cantonment
2798 on normal work days, other than minor queuing during peak periods. Ingress and egress at the
2799 ACPs are the main choke-point with regard to traffic at Fort Jackson. Normal, daily traffic
2800 patterns within the Installation are disrupted by two functions that are vital to the mission of Fort
2801 Jackson: physical training and graduation ceremonies.

2802 There are approximately five miles of sidewalk on Post. A portion of the Palmetto Trail (a
2803 recreational trail that traverses the state), is located along the southern portion of the Installation
2804 with trailheads located at Gate 1 and Gate 5. Bicycle traffic is prevalent on Fort Jackson though
2805 there are no dedicated bicycle lanes which can be a safety hazard.

2806 ***Public and Other Transportation***

2807 Fort Jackson does not operate any shuttles between the Installation and external destinations,
2808 nor does it have an internal, fixed-route shuttle bus to provide work-day transportation
2809 throughout the Installation. The Directorate of Logistics (DOL) runs an installation shuttle bus for
2810 sick-call soldiers that provides service to/from troop areas and the hospital via a loop route
2811 throughout the cantonment area. The total number of buses that the DOL maintains and
2812 operates is 52: five for the sick-call shuttle; 30 for troop lift to the ranges; and the remainder are
2813 dedicated to specific functions on the Installation. All buses are parked at the maintenance
2814 facility.

2815 There is both a taxi stand and a Greyhound bus station located on-post. The main taxi stand is
2816 located on the corner of Jackson Boulevard and Anderson Street and the Greyhound station is
2817 located on Magruder Street.

2818 Fort Jackson has five helicopter landing zones within the cantonment area, which are mainly
2819 used for emergency medical evacuation or transporting dignitaries, as well as several landing
2820 zones within the range area. There are no other active air, rail, port, or associated cargo
2821 facilities within the installation boundary.

2822 The Columbia Metropolitan Airport is 10 miles west of the Installation and is serviced by several
2823 major airlines. There are two military air fields located within 20 miles of Fort Jackson. McEntire
2824 National Guard Joint Air Base is located in Eastover, South Carolina, eight miles south of Fort
2825 Jackson, and Shaw AFB is located in Sumter, South Carolina, 20 miles east of Fort Jackson.

2826 **5.11. Environmental Restoration and Compliance**

2827 **5.11.1. Hazardous Waste**

2828 This section describes the existing conditions of hazardous and toxic substances on Fort
2829 Jackson. For purposes of this EA, hazardous materials are those regulated under federal,
2830 state, DoD, and Army regulations. Hazardous materials are required to be handled, managed,
2831 treated, or stored properly by trained personnel under the following regulations: OSHA
2832 Hazardous Communication, 29 CFR 1900.1200 and 29 CFR 1926.59; and Department of
2833 Transportation Hazardous Materials, 49 CFR 172.101; EPA, 40 CFR 260 et seq. (OSHA, 2006).
2834 Management of hazardous materials and hazardous wastes are discussed in this section, as
2835 well as site clean-up. The ROI is defined as the Fort Jackson Installation.

2836 Fort Jackson manages hazardous waste according to the *Hazardous Substance Management*
2837 *Plan (formerly referred to as the Hazardous Material and Waste Management Plan)* (FJ, 2011).
2838 This Plan provides the proper handling and disposal of hazardous wastes and is consistent with
2839 all applicable local, state, and federal regulations. Common types of hazardous materials and
2840 wastes at Fort Jackson include paints, adhesives, sealants, fuels, lubricants, solvents,
2841 PreservCyt solution, weapons cleaning solids, pesticide vat rinsate, photography chemicals,
2842 dental amalgams, chemotherapy drugs, aqueous brake solution, batteries, lamps, inactivated
2843 Meals Ready to Eat heaters, and oil filters. Bio-medical wastes generated within the MACH,
2844 troop clinics, and dental clinics are handled and disposed of in compliance with MEDCOM
2845 Regulation 40-35, *Medical Services, Management of Regulated Medical Wastes*.

2846 The Installation is required to track annually the amount of hazardous materials used on the
2847 Installation and report to the regulatory agencies. Fort Jackson no longer has a regulated on
2848 Post Hazardous Waste storage facility. Fort Jackson is a RCRA Large Quantity Generator of
2849 hazardous waste and operates under permit number SC 3210020449, which was issued
2850 February 2010 and expires March 2020. Facility inspections are conducted each year by
2851 SCDHEC and every four to five years by the EPA.

2852 Military operations have been on-going at Fort Jackson for over 80 years. During that time the
2853 industrial operations have grown in support of the training programs. Former industrial activities
2854 generated wastes, which were stored, treated or disposed of at the Post according to standard
2855 practices at that time. As a result, there are multiple contaminated soil and/or groundwater sites
2856 on Fort Jackson. A greater environmental awareness has called for the evaluation of former
2857 treatment, storage, or disposal and release sites (known as solid waste management units or
2858 SWMUs) to determine if there is contamination of concern to human health or the environment.
2859 Fort Jackson implemented the Installation Restoration Program (IRP) in 1988 in order to

2860 evaluate these past sites. The *Installation Action Plan (IAP)*, included in the IRP, provides
 2861 information on the contamination of groundwater, sediment, soil, and surface water on the
 2862 Installation. The lead organization for the IRP/IAP is Army Environmental Command and
 2863 Installation Management Command Southeast Region (IMCOM SE) and the lead executing
 2864 agency for Fort Jackson is the USACE Savannah District.

2865 The 2013 IAP will identify 28 sites, including six Military Munitions Response Program (MMRP)
 2866 sites (Figures 5.4 – 5.8) and five Compliance Restoration Sites on Fort Jackson, some of which
 2867 have several associated areas under one Site ID. None of the sites listed in the IAP have been
 2868 identified on the National Priorities List (NPL). Land Use Controls (LUC) have been developed
 2869 and implemented for certain sites which are summarized in the IRP.

2870 According to AR 200-1, *Environmental Protection and Enhancement*, LUCs are defined as any
 2871 type of physical, legal, or administrative mechanism that restricts the use of, or limits access to,
 2872 real property to prevent or reduce risks to human health, safety and the environment. Each LUC
 2873 requires engineering and institutional controls. Engineering controls are meant to be a visual or
 2874 physical notification to people approaching a site with an active LUC. There are eight LUCs in
 2875 place for the following sites: ID FTJA-01, -02, -03, -05, -06, -13, -21, -32 on Fort Jackson as
 2876 described below in Table 5-12. Additional detailed information on FTJA-01,-02,-03,-05,-06,-13,-
 2877 21,-32 and its corresponding LUCs can be found in the *Installation's Army Defense*
 2878 *Environmental Restoration Program Installation Action Plan* dated, August 2012.

2879 **Table 5-12 Fort Jackson Land Use Controls**

Site ID	ROD/DD Title	Restriction Level	Land Use Restriction	Engineering Controls	Institutional Controls	LUC Enforcement
FTJA-01	Decision Document for FTJA-01	Prohibitive	Prohibit excavation on land fill cap or cover system	Fences, signs	Construction Permit, Dig Permits, Notations in Master Plan, Restrictions on Groundwater Withdrawal, Restrictions on Land Use	Annual Inspections, Five Year Reviews, Other
FTJA-02	Decision Document for FTJA-02	Prohibitive	Prohibit installation of utility system lines through the site	Fences, signs	Construction Permit, Dig Permits, Notations in Master Plan, Restrictions on Groundwater Withdrawal,	Annual Inspections, Five Year Reviews, Other

Site ID	ROD/DD Title	Restriction Level	Land Use Restriction	Engineering Controls	Institutional Controls	LUC Enforcement
					Restrictions on Land Use	
FTJA-03	Decision Document for FTJA-03	Restrictive	Restrict construction of buildings that may interfere with land fill cap or cover system	Fences, signs	Construction Permit, Dig Permits, Notations in Master Plan, Restrictions on Groundwater Withdrawal, Restrictions on Land Use	Annual Inspections, Five Year Reviews, Other
FTJA-05	Decision Document for FTJA-05	Prohibitive	Prohibit activities that would impact the land fill cap or cover system.	Fences, signs	Construction Permit, Dig Permits, Notations in Master Plan, Restrictions on Groundwater Withdrawal, Restrictions on Land Use	Annual Inspections, Five Year Reviews, Other
FTJA-06	Decision Document for FTJA-06	Restrictive	Restrict construction and plantings that interfere with the land fill cap or cover system (Roots that penetrate the cap or cover system).	Fences, signs	Construction Permit, Dig Permits, Notations in Master Plan, Restrictions on Groundwater Withdrawal, Restrictions on Land Use	Annual Inspections, Five Year Reviews, Other
FTJA-13	Decision Document for FTJA-13	Restrictive	Restrict diggings, soil exposure or removal.	Fences, signs	Construction Permit, Dig Permits, Notations in Master Plan, Restrictions on Groundwater Withdrawal, Restrictions	Annual Inspections, Five Year Reviews, Other

Site ID	ROD/DD Title	Restriction Level	Land Use Restriction	Engineering Controls	Institutional Controls	LUC Enforcement
					on Land Use	
FTJA-21	Decision Document for FTJA-21	Restrictive	Prohibit digging and restrict vehicular traffic	Fences, signs	Construction Permit, Dig Permits, Notations in Master Plan, Restrictions on Groundwater Withdrawal, Restrictions on Land Use	Annual Inspections, Five Year Reviews, Other
FTJA-32	Decision Document for FTJA-32	Restrictive	Restrict diggings, soil exposure or removal.	Fences, signs	Construction Permit, Dig Permits, Notations in Master Plan, Restrictions on Groundwater Withdrawal, Restrictions on Land Use	Annual Inspections, Five Year Reviews, Other
All SWMUs, AOCs and UST sites			Groundwater monitoring	Documented	Required by REC	Annual for three years.

2880

2881 **5.11.2. Polychlorinated Biphenyl (PCB)**

2882 Guidance for Fort Jackson’s management of polychlorinated biphenyl (PCB)-containing items is
 2883 contained in Headquarters, TRADOC PCB policy, established in 1989. In 1989, 1,010 electrical
 2884 transformers at Fort Jackson were inspected for PCB contamination during an Installation-wide
 2885 survey. Of those inspected, only 59 transformers were found to be contaminated, meaning they
 2886 exceeded the 50 parts per million (ppm) standard. An additional 30 transformers were
 2887 determined to be PCB transformers, indicating they exceeded the 500 ppm standard. All of
 2888 these transformers have been replaced with non-PCB transformers.

2889 Occasionally PCB materials are identified on-Post. When this occurs, these materials are
 2890 handled and disposed of in accordance with all applicable federal, state and local regulations.

2891 **5.11.3. Petroleum, Oil and Lubricants (POL)**

2892 The Underground Storage Tank (UST) Program conforms to the requirements of the Federal
2893 and state UST management regulations or the Federal Spill Prevention, Control and
2894 Countermeasure (SPCC) regulations. These regulations provide the ENV with guidance in
2895 respect to inventory notification/reporting of data; leak detection and tank testing; remedial
2896 action; tank closing procedures; new construction of replacement tanks; and leak detection
2897 monitoring systems for underground storage tanks.

2898 In an effort to maintain compliance with these evolving regulations, over the past several years
2899 Fort Jackson has removed hundreds of aboveground storage tanks (AST) and USTs and
2900 upgraded or installed new mission critical tanks to meet regulatory compliance requirements
2901 and deadlines. During FYs 1990 to 1997, 88 regulated and more than 50 non-regulated USTs
2902 were removed. Fort Jackson currently has seven USTs regulated by these rules, all meeting the
2903 current requirements of Title 40 CFR, Section 280 and the South Carolina USTR. Fort Jackson
2904 USTs include three each at the service stations (Buildings 4522 and 4120), and one at MACH
2905 (Building 4500) to serve the emergency generator. To meet these requirements, the seven
2906 tanks located at both Army Air Force Exchange Service (AAFES) stations were upgraded by
2907 installing new double-wall fiberglass tanks and new double-wall underground piping. In
2908 addition, these tanks have spill and overfill protection as well as state-of-the-art electronic
2909 inventory monitoring equipment. A liner was installed on the fuel oil tank for the emergency
2910 generator at MACH and a new cathodic protection system was installed.

2911 The SPCC details spill prevention and procedures for responding to accidental releases of
2912 petroleum-based products, hazardous materials and hazardous wastes. In addition, Hazardous
2913 Communication (HAZCOM) training is required for all personnel exposed to hazardous
2914 substances. Fort Jackson is performing assessments and investigations at several former AST
2915 and UST sites that have been impacted by product contamination. Once work plans are
2916 approved by the SCDHEC, the sites are assessed to determine the extent of contamination and
2917 to identify the most efficient, effective, and economical method of clean-up.

2918 Fort Jackson does not use transportation pipelines to bring POL to the facilities. Deliveries of
2919 POL to the installation are made by tank truck. Fort Jackson does not have pipelines that could
2920 reasonably be expected to spill oil into or upon the navigable waters of the United States.

2921 **5.11.4. Asbestos**

2922 Asbestos-containing materials (ACM) at Fort Jackson are managed in accordance with all
2923 applicable federal, state, and local regulations and the *Fort Jackson Asbestos Hazard*
2924 *Management Plan* (AHMP; FJ, 2009b). The AHMP provides the documentation for asbestos
2925 management efforts and procedures carried out in support of the Toxic Management Program
2926 at Fort Jackson. The SC DHEC regulation 61-86.1, “*Standards of Performance for Asbestos*
2927 *Projects*” and Title 40 CFR, Part 61, Subpart M, “*National Emission Standards for Hazardous Air*
2928 *Pollutants-Asbestos*” the facility or portion of the facility being renovated or demolished shall be

2929 thoroughly inspected to detect the presence, location, condition, and estimated quantity of ACM
2930 which may be disturbed during the renovation or demolition activity.

2931 Facility inspections are used to obtain accurate and reliable information on the presence and
2932 condition of ACM in each facility. The inspection must be performed prior to any renovation or
2933 demolition activity and must be performed by a person who has been trained and licensed as an
2934 asbestos building inspector in accordance with state training and licensing requirements. The
2935 size of Fort Jackson requires these inspections to be conducted on different schedules but all
2936 facilities maintain the three-year time period required for inspections. ACM are known to exist
2937 on-Post; they include floor tiles, duct joint compound, sink coat, vinyl floor covering, and floor
2938 tiles. These materials are managed and disposed of during renovation and demolition in
2939 accordance with the SCDHEC, EPA, Army, and local regulations and the AHMP.

2940 **5.11.5. Lead-Based Paint (LBP)**

2941 It is possible that painted surfaces in buildings constructed before 1978 may contain lead. AR
2942 200-1, *Environmental Protection and Enhancement* outlines a strategy for an installations lead-
2943 based paint (LBP) management program. This program is aimed at identifying the lead hazards
2944 in facilities where children are present, performing risk assessments, control or elimination of
2945 LBP hazards through abatement, and continual monitoring of painted surfaces that contain lead.

2946 Army policy calls for controlling LBP by using in-place management (as opposed to mandated
2947 removal procedures). In-place management is used to prevent deterioration over time for
2948 surfaces likely to contain LBP, followed by replacement as necessary. Major renovations and
2949 unit demolition would require that contractors remove LBP in accordance with state and federal
2950 guidelines. At Fort Jackson, LBP surveys are conducted for facilities on a project-by-project
2951 basis when facility demolition or renovation is necessary. As the scheduled demolitions or
2952 renovations occur, contractors would remove and dispose of LBP (FJ, 2011).

2953 **5.11.6. Pest Management**

2954 Pesticides are listed commercial products that become a hazardous waste when discarded in a
2955 manner not consistent with their intended use. The regulation at 40 CFR 17 261.2(c)(1)(B)(ii)
2956 states that the commercial chemical products listed at 40 CFR 261.33 are not solid wastes (and
2957 therefore are not hazardous wastes) if they are applied to the land and that is their ordinary
2958 manner of use. Therefore, if pesticides are identified in soils around the buildings and they were
2959 used for their intended purposes, their presence in the soil would not constitute a release and,
2960 therefore, would not affect the environmental condition of the property.

2961 The Installation's *Integrated Pest Management Plan* (IPMP; FJ-DLE-ES, 2005) provides a
2962 complete list of all pesticides used on-Post, describes the Installation's pest management
2963 policies and procedures, and outlines the resources necessary for administration of the pest
2964 management program, including, health and environmental safety, pest identification and
2965 management, and pesticide storage, transportation, application and disposal. The Plan was

2966 developed as a tool to decrease reliance on pesticide usage, to improve environmental
2967 protection, and to make best use of integrated pest management (IPM) techniques.

2968 The IPMP details physical, cultural, biological and chemical controls to be used separately and
2969 together to stop potential pest infestations. The only buildings approved for storage of
2970 pesticides are the Wildlife and Forestry Pesticide Shop (Building 2558) and the Fort Jackson
2971 Golf Club (Building 3664). Pesticide storage areas are monitored to provide at least six air
2972 changes per hour. Application of pesticides is carried out using DoD-certified pesticide
2973 applicators by authorized, trained, and certified personnel under the supervision of quality
2974 assurance evaluators or the Pest Management Branch Supervisor. Only EPA and South
2975 Carolina registered pesticides are used on Fort Jackson and are on the Army approved
2976 pesticide list. Excess concentrated pesticide formulations are disposed of in accordance with
2977 Federal, Army, and South Carolina laws, rules, or directives as well as the Installation's
2978 Hazardous Waste Disposal Program. Appropriate planning is undertaken to assure that only
2979 the amount of chemical needed to complete the work will be mixed. However, if any formulated
2980 pesticide remains, it will be used as diluents for future spray operations. Residue remaining in
2981 hoses and booms of power sprayers are applied to the treatment area. Empty pesticide
2982 containers are triple-rinsed and disposed of in accordance with the pesticide label directives and
2983 Installation policies. The rinse water is used as a diluent for the next batch of the same
2984 pesticide.

2985 **5.11.7. Munitions**

2986 Outdated, defective, large caliber, and unexploded ordnance are sent off-Post to approved DoD
2987 facilities for disposal. No unused or waste ordnance or munitions are routinely disposed of at
2988 Fort Jackson. Explosives Ordnance Disposal (EOD) training is conducted at Fort Jackson at
2989 the Impact Area Demo Site and 748th EOD Demolition Training Site. These sites are not used
2990 for the routine disposal of munitions or ordnance. Range clearance and emergency disposal
2991 operations are conducted in accordance with hazardous waste management regulations and
2992 the Military Munitions Rule.

2993 **5.11.8. Radioactive Waste**

2994 Both medical and non-medical radioactive wastes are generated at Fort Jackson. Medical
2995 radioactive waste is inspected and monitored by a Radiation Protection Officer (RPO). Medical
2996 radioactive waste is generated primarily as a by-product of therapy/treatments and diagnostic
2997 medical imaging. The procedures and practices for the hospital are licensed under the Nuclear
2998 Regulatory Commission and the Department of the Army Radioactive Materials Authorization.
2999 Waste is stored in a secure locker at the MACH (Building 4500). All medical radioactive wastes
3000 that are generated on Fort Jackson are stored for 10 half-lives and then disposed of by an
3001 approved contractor (Parsons Harland Bartholomew & Associates, 2008).

3002 Non-medical radioactive wastes are overseen by a separate RPO. Non-medical radioactive
3003 wastes at Fort Jackson are comprised of components of outdated equipment such as calibration

3004 equipment, wristwatches and compasses. These wastes are stored temporarily in a secured
3005 arms room in Building 3290 until they can be disposed of safely. All non-medical radioactive
3006 wastes are ultimately disposed of by an approved contractor.

3007 **5.12. Fort Jackson Sustainability Management System**

3008 The Fort Jackson Sustainability Management System (SMS) is part of the Installation's business
3009 planning process that integrates environmental concerns into management decisions. The
3010 system addresses mission requirements, environmental accountability, and community
3011 concerns in a sustainable way without compromising the ability to accomplish future missions or
3012 ensure a viable natural environment for its soldiers and employees, their families, and the
3013 surrounding communities. EO 13423 requires that federal facilities implement environmental
3014 management systems (EMS) by December 31, 2009. In March 2006, Fort Jackson established
3015 thirteen 25-year sustainability goals within five operational teams: Mission-Military Training,
3016 Infrastructure, Procurement, Transportation, and Regional Interaction.

3017 The SMS policy is Fort Jackson's overall direction for addressing environmental responsibility
3018 and strives to control environmental impacts, comply with laws and regulations, proactively
3019 manage current and future environmental issues that may impact sustainability, and sustain
3020 natural and cultural resources that are identified on the Installation. It does not require creation
3021 of a new system, but instead improves upon the use and integration of environmental concerns
3022 into current ones.

3023 Fort Jackson's SMS is based on a continual improvement process and a 'Plan-Do-Check-Act'
3024 concept. Fort Jackson adheres to Army policy requiring its EMS to be conformant with the
3025 *International Organization for Standardization (ISO) 14001:2004, Environmental management*
3026 *systems – Requirements with guidance for use.*

3027 Environmental Compliance Officers (ECOs) play a vital role in the success of the SMS. They
3028 assist units by ensuring that environmental activities and compliance requirements are met, are
3029 responsible for updating unit commanders regarding environmental issues and concerns and
3030 conducting and documenting annual environmental awareness training. ECOs also establish
3031 and maintain required environmental documents (i.e., AR 200-1, EO Handbook, awareness
3032 training records) and ensure that material safety data sheets are available and chemicals are
3033 stored properly. Additional responsibilities include assisting auditors with environmental
3034 compliance inspections and promoting environmental initiatives (e.g., recycling).

3035 The Fort Jackson ENV is addressing sustainability in a variety of ways:

- 3036 • Solid waste, hazardous substances, and pollution prevention programs;
- 3037 • Asbestos and other toxic programs;
- 3038 • Stormwater program;
- 3039 • Air quality program;

- 3040 • Noise program;
- 3041 • Tank program;
- 3042 • Drinking Water program;
- 3043 • Forestry and wildlife programs; and
- 3044 • Natural and cultural resources programs.

3045

3046 In addition, the DPW works to identify and prevent water and energy leaks, collaborates with
 3047 utility services to have sustainable energy and water programs, and uses fuel cell technology for
 3048 alternative energy sources.

3049 The Sustainable Range Program plans for environmental and sustainability concerns (i.e.,
 3050 erosion and impact to natural resources and wildlife habitats) in the planning, construction,
 3051 maintenance, and use of ranges. Fort Jackson also has an active recycling program regulated
 3052 by FJ Regulation 200-9 “*Qualified Recycling Program*” as well as a hazardous materials plan
 3053 regulated by the HSMP. The Fort Jackson Recycling Center manages the recyclable materials
 3054 of the installation community and promotes recycling amongst units via an incentive program.
 3055 Fort Jackson also engages in green procurement or “buying green” as part of the Army policy.
 3056 As a result, Fort Jackson helps to reduce air emissions and solid waste, conserve natural
 3057 resources and the ozone layer, and reduce U.S. dependence on petroleum and other imports.

3058 **5.12.1. Current Fort Jackson EMS Environmental Objectives**

3059 Environmental objectives are overall environmental goals that Fort Jackson sets for itself to
 3060 minimize its environmental impacts. Environmental targets are more detailed performance
 3061 requirements, applicable to Fort Jackson arising from its environmental objectives.

3062 Environmental objectives and targets take into consideration the Fort Jackson Environmental
 3063 Policy, significant environmental aspects, technological, financial, and operational options and
 3064 the views of interested parties (e.g., the Frederick community and regulatory agencies). The
 3065 EQCC reviews and maintains approval authority of environmental objectives.

3066 The Fort Jackson Environmental Guidebook prescribes responsibilities, policies, and
 3067 procedures for managing environmental issues at Fort Jackson in accordance with applicable
 3068 federal, state and local laws and regulations, Army Regulation 200-1 and Fort Jackson
 3069 Regulation 200-8. The six environmental aspects included aim to reduce air emissions, improve
 3070 water quality, reduce energy consumption, increase resource conservation and recovery,
 3071 reduce waste generation and increase recycling, and reduce/clean-up spills, leaks or releases
 3072 to soil or water. The environmental objectives are divided into a number of environmental
 3073 targets, which are detailed performance requirements of EOs 13423 and 13514. Section 2.6
 3074 lists the requirements of EOs 13423 and 13514 as they relate to the following significant
 3075 environmental aspects of Fort Jackson:

- 3076 • **Asbestos and Lead-Based Paint** - includes the documentation for asbestos
3077 management efforts and procedures carried out in support of the Toxic Management
3078 Program at Fort Jackson.
- 3079 • **Air Quality** - includes Stationary Sources (boilers, incinerators, generators, chlorine gas
3080 storage, petroleum storage) and Mobile Sources (vehicle emissions [government-owned
3081 and privately owned vehicles, and equipment).
- 3082 • **Water Quality/Drinking Water/Wastewater** - includes all elements of sanitary
3083 wastewater management, SWM, and drinking water quality.
- 3084 • **Hazardous Material and Waste Management/Pollution Prevention** - includes all
3085 elements of solid waste, recycling, and hazardous waste management, as well as all
3086 spills, leaks, or releases of materials to soil or water.

3087 **5.12.2. NEPA and EMS**

3088 Fort Jackson NEPA processes and the Fort Jackson EMS are designed to be used in
3089 conjunction with each other to improve environmental performance of Fort Jackson. The NEPA
3090 process is interdisciplinary, with NEPA working together with Fort Jackson's EMS to ensure all
3091 possible environmental aspects are assessed and document the environmental assessment.
3092 Once NEPA forecasts the impacts of proposed actions during the proposal design and decision
3093 phase, Fort Jackson EMS requires either a REC, EA, or EIS, and the Fort Jackson EMO
3094 monitors and tracks these impact predictions and mitigation information in day-to-day
3095 operations. The analysis completed by the Fort Jackson EMO results in a short MOEC, which
3096 outlines any modifications that must be made to avoid affecting the environment. The goal of the
3097 EMO is to allow the project to proceed with as little change needed to protect the environment.

3098 **5.12.3. Environmental Performance Assessment Review**

3099 The EPAS program was developed and implemented in 1991-92 in response to the
3100 recommendations made by the EPA in 1986. When the program was known as Environmental
3101 Compliance Assessment System, it assessed active Army installations for compliance with
3102 Federal, State, and DoD regulations. As per EO 13148, the EPAS program has since expanded
3103 and now includes environmental management performance auditing. The USAEC conducts risk-
3104 based scheduling to assess installations with greater environmental risk more frequently, while
3105 maintaining an assessment standard for installations with less environmental risk (USAEC,
3106 2009).

3107 The EPAS program assists all Army commanders in attaining, sustaining, and monitoring
3108 compliance with Federal, State, and local environmental laws and regulations, as well as DoD
3109 and Army compliance and performance requirements. EPAS external and internal multi-media
3110 assessments: identify non-compliance with environmental regulations and non-conformance
3111 with the ISO 14001 environmental performance standard used by Army EMS; provide

3112 suggestions for both immediate and long term corrective actions; and indicate resources
 3113 needed for implementation (USAEC, 2009).

3114 **5.13. Environmental Constraints**

3115 The series of constraints analysis maps provided in Figures 5.4 – 5.8 illustrate all natural,
 3116 cultural, and operational resources described in preceding sections. As demonstrated in Table
 3117 5-13, these constraints are delineated into two categories: prohibitive and restrictive. The most
 3118 significant constraints are labelled as prohibitive, in these areas, development is not
 3119 recommended. The restrictive category is used to separate the more easily mitigated
 3120 constraints from those that should be avoided; development may be recommended in these
 3121 areas, depending upon the situation.

3122
 3123

3124 **Table 5-13 Prohibitive and Restrictive Development Constraints**

Prohibitive to Development (Development not recommended in these areas)		
Cultural Resources	Operational Resources	Natural Resources
Cemeteries (27)	MMRP Sites	Surface Waters
	Methane Plume	Wetlands and buffer areas
	AT/FP (45 m) Installation Perimeter	
	Ammunition Storage/Quantity Distance Arcs	
	Range and Impact Areas (outside cantonment area)	
	Contaminated Sites*	
Restrictive to Development (Development is permitted by type depending on the constraint(s))		
Cultural Resources	Operational Resources	Natural Resources
Historic Buildings	AST & UST Areas	100-year floodplain
Archaeological Sites	PT Areas	Threatened and Endangered Species Conservation Areas
	Ranges inside cantonment area	Steep Slopes (>15%)

3125 Note: *Landfills may also be considered as contaminated sites.

3126 Source: Atkins, 2012a

3127 Constraints differ in criteria and requirements, therefore not all resources are equally impacted
 3128 by development or require the same level of mitigation. While some constraints are federally

3129 mandated and require significant mitigation, others are Post-management practices, involving
3130 little to no mitigation. Additionally, certain operational constraints might actually benefit from
3131 development due to the environmental clean-up efforts required for making the area suitable for
3132 construction.

3133 Ideal development areas are those that exhibit no prohibitive constraints, minimal or no
3134 restrictive constraints, and generally have existing infrastructure. These areas are also free
3135 from land use restrictions due to pre-existing or contaminated conditions. Mitigation within
3136 restrictive development areas would be necessary to increase developable area for the future.
3137 Adaptive reuse of structures would also increase the number of viable facilities Fort Jackson
3138 could use to meet mission requirements. To better assess impacts to future development, a
3139 composite of these constraints has been developed and is located in the 2012 RPMP.

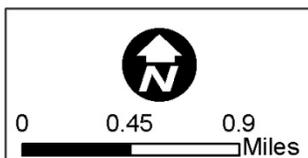
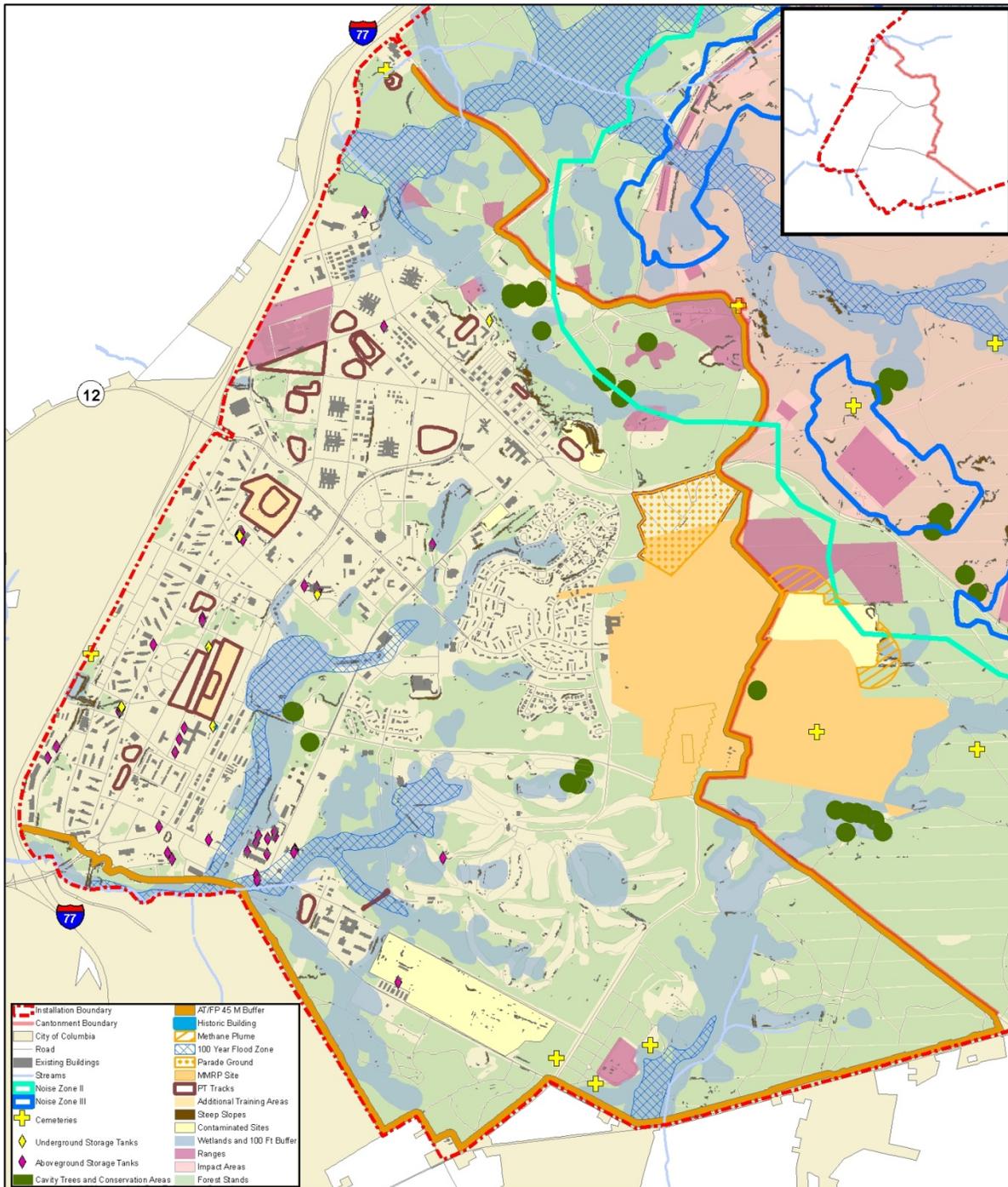


Figure 5.4
Fort Jackson Cantonment
Combined Constraints

Sources:
 Fort Jackson, Atkins

3140

3141

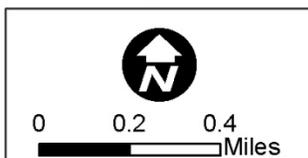
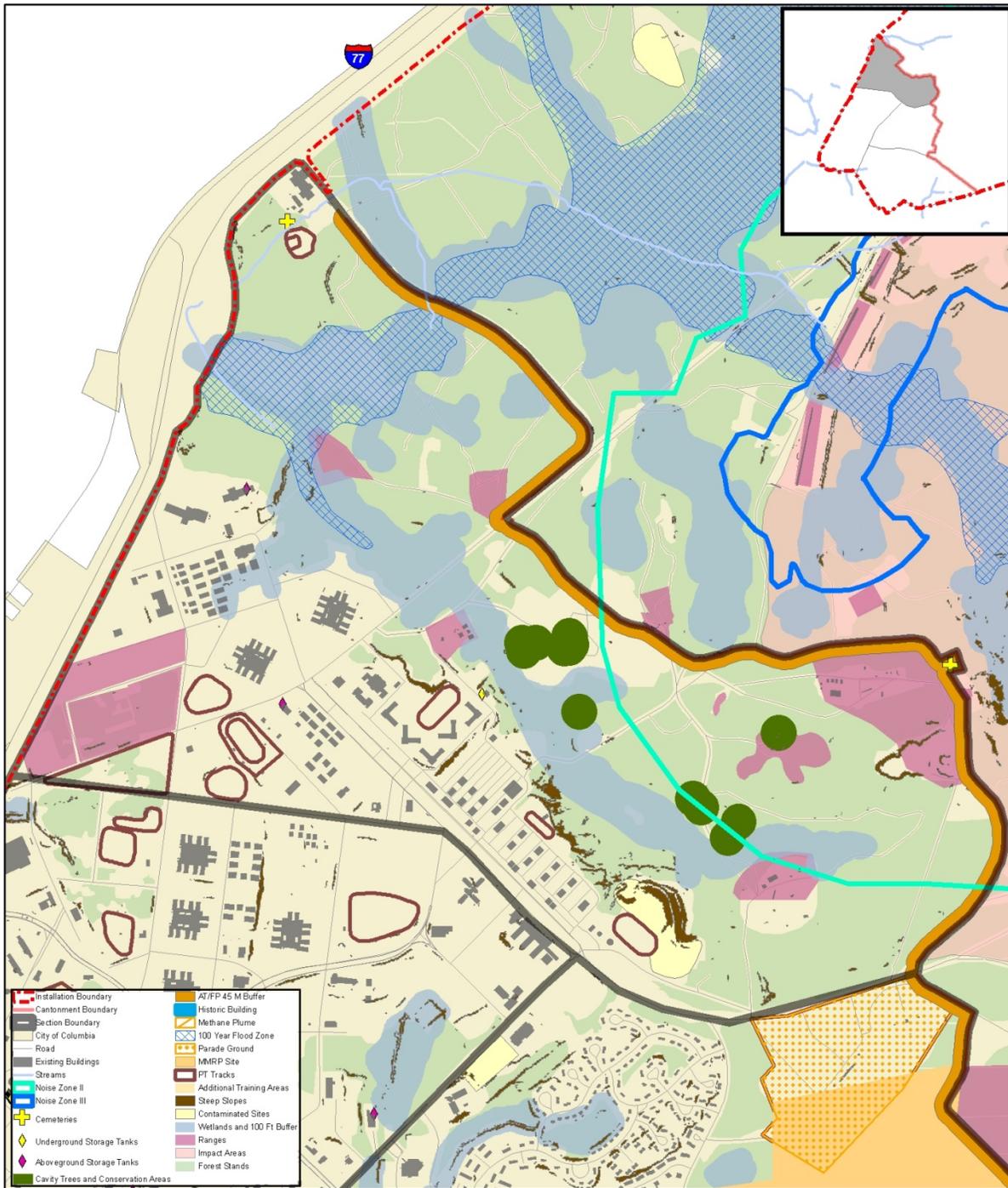


Figure 5.5
Fort Jackson Cantonment - North Section
Combined Constraints

Sources:
 Fort Jackson, Atkins

3142

3143

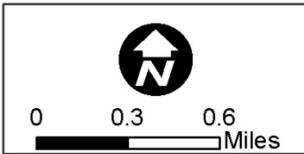
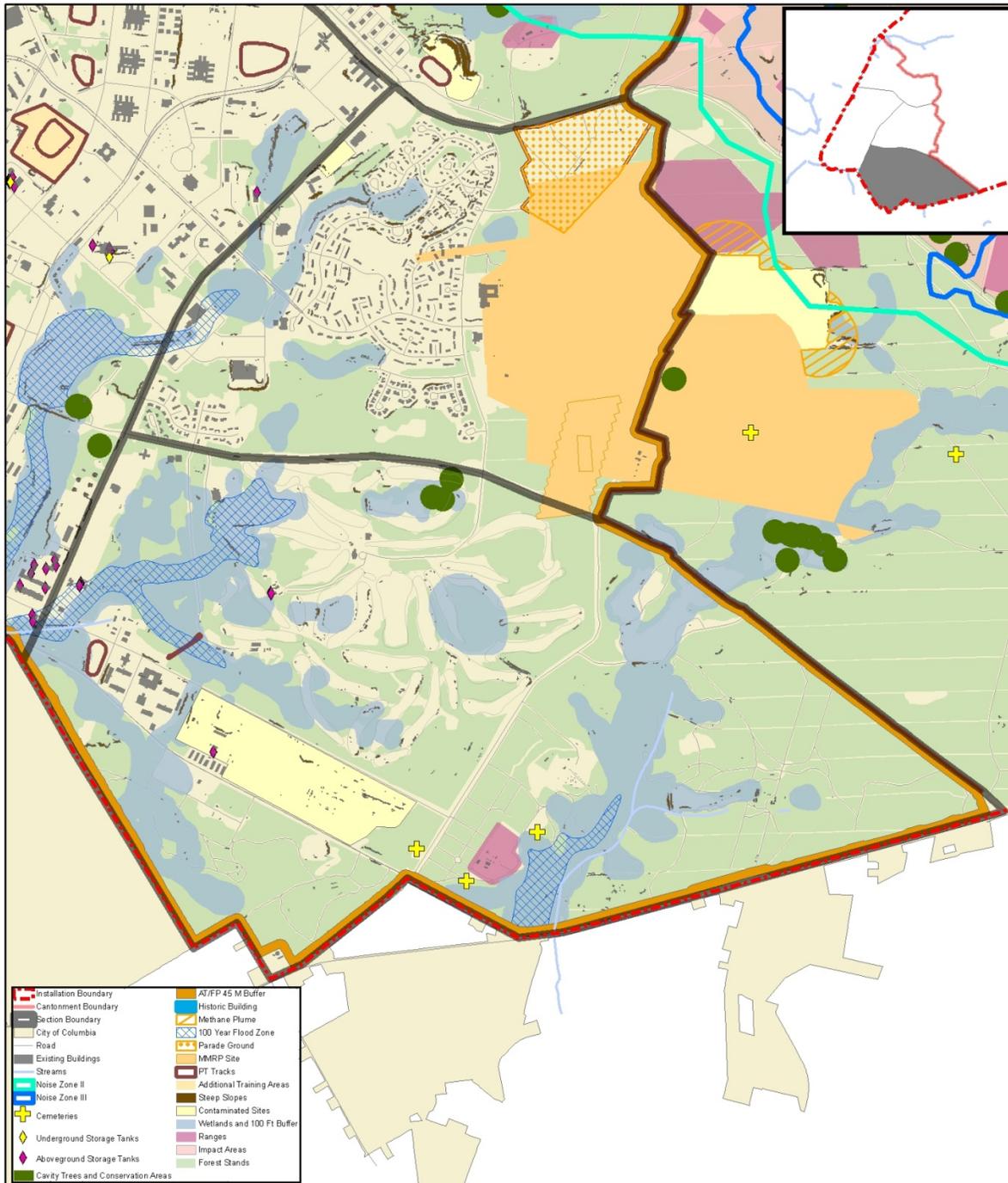


Figure 5.6
Fort Jackson Cantonment - South Section
Combined Constraints

Sources:
 Fort Jackson, Atkins

3144

3145

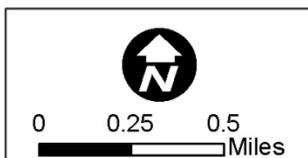
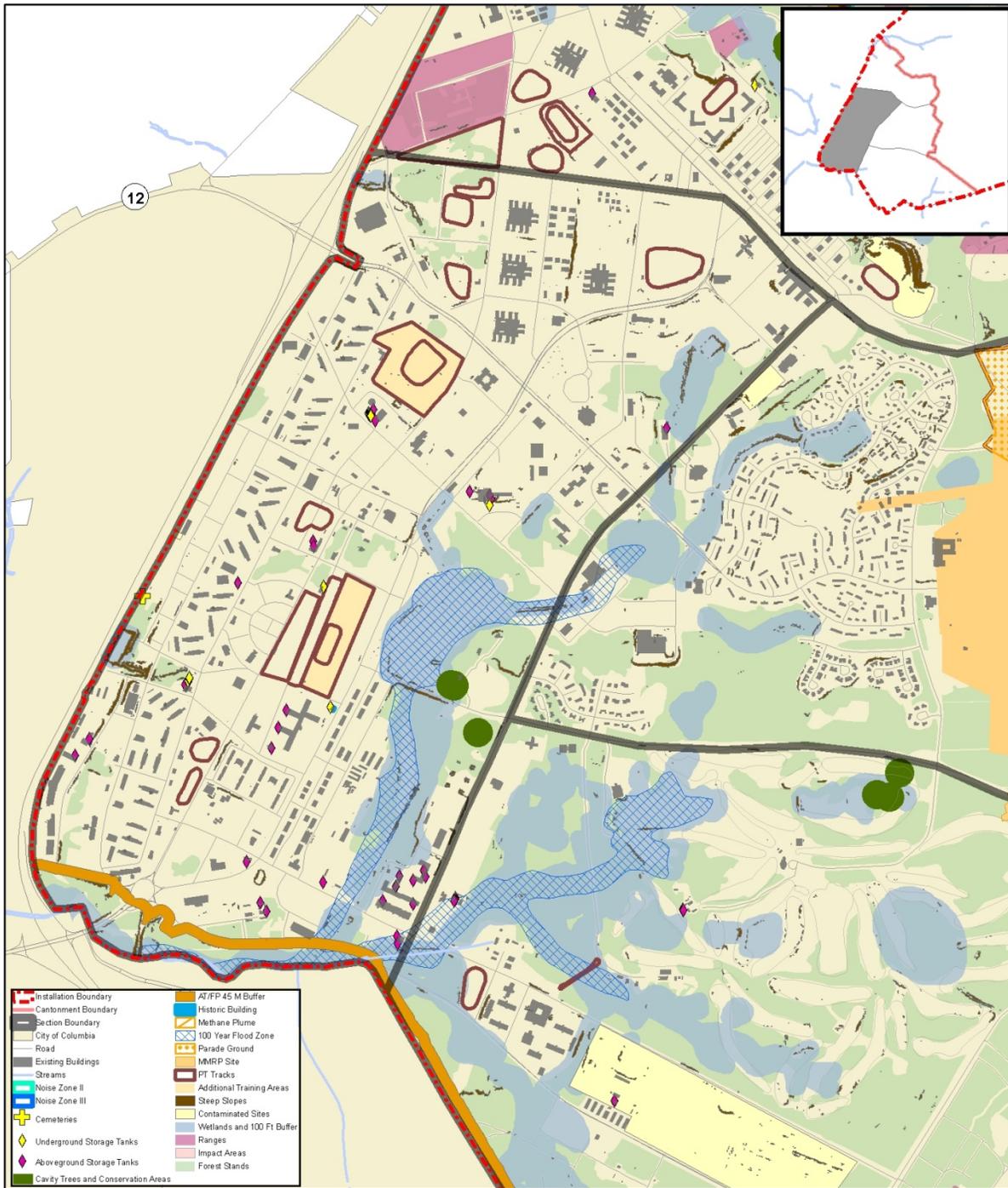


Figure 5.7
Fort Jackson Cantonment - West Section
Combined Constraints

Sources:
 Fort Jackson, Atkins

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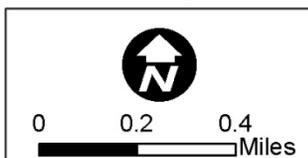
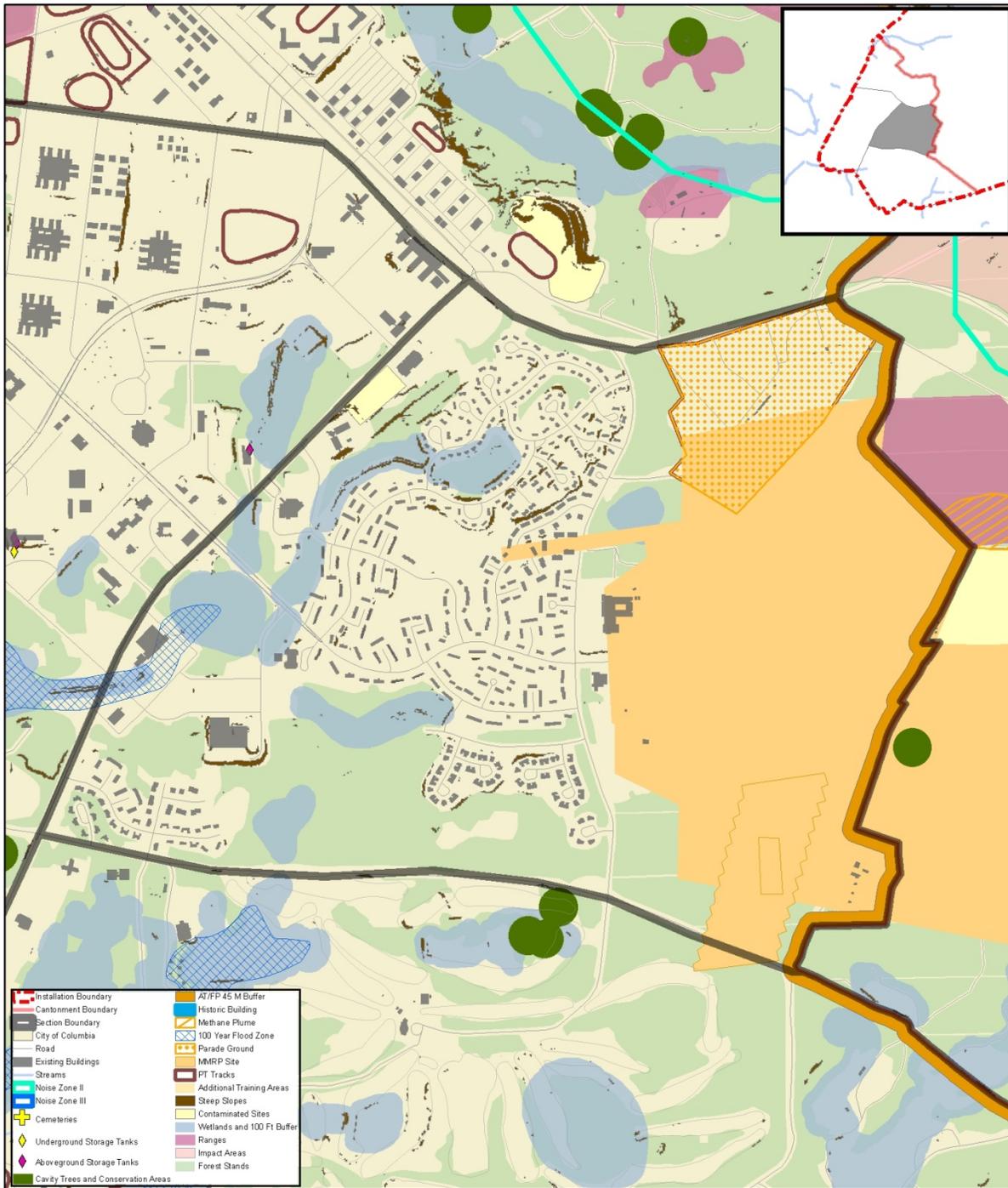


Figure 5.8
Fort Jackson Cantonment - East Section
Combined Constraints

Sources:
 Fort Jackson, Atkins

3148

3149

6. Environmental and Socioeconomic Consequences

6.1. Introduction and Organization

This section describes the environmental consequences of the proposed action and alternatives as described in Sections 3 and 4. Ten resource groups (which include 36 specific group attributes) were established to provide a framework for the identification of baseline conditions (as described in Section 5), and to facilitate identification of the effects of the proposed action on these conditions. These resource groups and attributes were developed based on a review of Installation resources and related resource protection laws and regulations. The resource groups and attributes are provided below in Table 6-1.

Table 6-1 Fort Jackson Resource Group and Group Attributes for Impact Assessment

Resource Group	Group Attribute
Land Use	Fort Jackson (On-Post) Land Use Adjacent (Off-Post) Land Use
Aesthetics and Visual Resources	
Physical Resources	Climate Physiography, Geology and Topography Soils Noise
Water Resources	Surface Water Groundwater Stormwater Floodplains
Biological Resources	Fish and Wildlife Vegetation Wetlands Threatened and Endangered Species
Air Quality	Regional Air Quality Fort Jackson
Historical and Cultural Resources	Archaeological Sites Historic Buildings and Structures Cemeteries

Resource Group	Group Attribute
Socioeconomic Resources	Regional Economy Housing Environmental Justice Protection of Children
Infrastructure	Utilities Transportation Systems
Environmental Restoration and Compliance	Hazardous Waste Polychlorinated Biphenyl Petroleum, Oil and Lubricants Asbestos Containing Materials Lead-Based Paint Pest Management
Operating Requirements	Efficiency and Safety Ability to Meet Mission Regulatory Compliance

3162 Note: In addition, the impact assessment matrices and related narratives in this section consider the effect of the No Action and Full
 3163 Implementation Alternatives on an eleventh resource group (Operating Requirements), and three indicators of the ability of the
 3164 Installation to meet these requirements.

3165 Resource impact assessment matrices have been prepared and included in Sections 6.4 and
 3166 6.5 to summarize and compare the impacts of the No Action Alternative and the Full
 3167 Implementation Alternative. The reader should refer to the following text narratives for the
 3168 specific nature and extent of impacts or benefits for those resource groups with identified
 3169 impacts.

3170 6.2. Environmental Impact Analysis Key Terms

3171 6.2.1. Direct versus Indirect Impacts

3172 The terms impact and effect are synonymous as used in this EA. Impacts may be determined
 3173 to be beneficial or adverse, and may apply to the full range of natural, aesthetic, historic,
 3174 cultural, and economic resources of the Installation. Where applicable, impacts may be
 3175 classified as direct or indirect.

3176 Definitions and examples of direct and indirect impacts as used in this document are as follows:

3177 **Direct Impact** is caused by the proposed action, and occurs at the same time and place. For
 3178 example, loss of tree cover would be classified as a direct impact associated with construction
 3179 of a new building on an existing woodland site.

3180 **Indirect Impact** is caused by the proposed action and is later in time or farther removed in
 3181 distance, but still reasonably foreseeable. Indirect impacts may include induced changes in the
 3182 pattern of land use, population density or growth rate, and related effects on air, water and other

3183 natural and social systems. Referring to the direct impact described above, the clearing of trees
3184 for new development may have an indirect impact on area streams by increasing the amount of
3185 soil erosion and sediment that reaches these streams during the construction period.

3186 **6.2.2. Short-Term versus Long-Term Impacts**

3187 In addition to indicating whether impacts are direct or indirect, the environmental consequences
3188 analysis also distinguishes between short- and long-term impacts. Within this context, short-
3189 and long-term do not refer to any rigid time period and are determined on a case-by-case basis.
3190 In cases where both short- and long-term impacts are expected, the impact evaluation matrices
3191 generally illustrate the long-term consequences. Referring to the direct and indirect impact
3192 examples described above, the clearing of trees on a new construction site would be classified
3193 as a long-term impact, while erosion and silting in nearby streams during the construction period
3194 would be classified as a short-term impact.

3195 **6.2.3. Cumulative Impacts**

3196 Subsection 6.6.2 discusses the cumulative impacts associated with the No Action Alternative for
3197 each "resource group" as identified in Subsection 6.1. Under the No Action Alternative, it is
3198 assumed that the existing land use would remain in effect, no new master plan projects would
3199 be constructed, no mobilization activities would occur, and activities associated with master plan
3200 existing and ongoing mission activities would be limited to those that are currently conducted at
3201 the Installation.

3202 Subsection 6.6.3 discusses the cumulative impacts of the Full Implementation Alternative for
3203 each applicable resource group with emphasis on appropriate group attributes. Under the Full
3204 Implementation Alternative, it is assumed that the master plan component plans would continue
3205 to be implemented as planned, and that existing and ongoing mission activities would increase
3206 or decrease as required to support all mission requirements.

3207 **6.2.4. Mitigation**

3208 Where adverse impacts are identified, this document describes measures that would or could
3209 be used to mitigate these effects. Only those mitigation measures that are practicable (i.e., can
3210 be accomplished as part of the proposed action) have been identified. Mitigation measures
3211 generally include:

- 3212 • Avoiding the impact altogether by stopping or modifying the proposed action;
- 3213 • Minimizing impacts by limiting the degree or magnitude of the action and its
3214 implementation;
- 3215 • Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;

- 3216 • Reducing or eliminating the impact over time by preservation and maintenance
3217 operations during the life of the action; and
- 3218 • Compensating for the impact by replacing or providing substitute resources or
3219 environments.

3220 **6.3. Master Plan Long Range Component – Long Range Land** 3221 **Use**

3222 Sections 6.3.1 and 6.3.2 provide a narrative discussion of the relative impacts of the No Action
3223 and preferred land use plans on the natural and cultural resources at Fort Jackson. For the
3224 most part, the impacts are construction related, and mitigation through routine implementation of
3225 BMPs for the control of sediment runoff and fugitive dust emissions would minimize overall
3226 impacts. Section 6.3.3 provides a summary of the rationale for the selection of the Preferred
3227 Land Use Plan by the Army, which would be used as the basis for future development at the
3228 Installation. The analysis included in this section is broad and programmatic in nature. No
3229 attempt has been made to describe site-specific impacts associated with each land use
3230 concept, but rather the intent of this section is to evaluate the broad environmental
3231 consequences of each action relative to the range of alternatives considered.
3232

3233 **6.3.1. No Action Alternative**

3234 The No Action Alternative would involve the continued use of the existing land use as illustrated
3235 in Figure 5.1 and the continued use of existing facilities.

3236 **6.3.1.1. Direct Impacts**

3237 The No Action Land Use Plan would result in minimal disruption of existing natural or cultural
3238 resources, since this scenario would generally limit activities to existing facilities. However, this
3239 alternative has serious operational deficiencies. Failure to implement the Master Plan (and its
3240 associated Preferred Land Use Alternative) would result in the continued use of existing
3241 deteriorating, maintenance-intensive, and inefficient facilities which are approaching, or past the
3242 end of their useful life. These semi-permanent and temporary facilities are more expensive to
3243 maintain, require additional utilities support to heat and cool, are not effectively designed to
3244 support current missions, are visually unattractive, and fail to meet the appearance guidelines
3245 as detailed in the IDG.

3246 **6.3.1.2. Indirect Impacts**

3247 The continued use of the existing deteriorated facilities and other operating limitations
3248 associated with the No Action Alternative would have an indirect significant adverse impact on
3249 the ability of the Installation to meet current and projected mission requirements, and could
3250 compromise the ability of the Installation to remain viable in this era of military Installation
3251 consolidation and closure. Furthermore, the additional man-years of effort required to maintain

3252 antiquated facilities, and to function in existing inefficient facilities, would be wasted and lost
3253 from support of other mission requirements.

3254 **6.3.2. Preferred Alternative (Preferred Land Use Plan)**

3255 The Preferred Alternative reflects the land use goals and objectives of Fort Jackson,
3256 consolidates compatible land uses into functional areas that improve the efficiency of Installation
3257 operations, increases development density, encourages walkability, and promotes efficiency of
3258 mission-critical functions. It proposes the expansion of existing land uses only to the extent
3259 necessary to accommodate additional construction as required to meet mission requirements
3260 and operating standards, and to allow the implementation of several relatively low-impact land
3261 use improvement concepts. These improvement concepts include modernizing facilities to
3262 maximize functionality, consolidating the facilities associated with Fort Jackson's basic and
3263 advanced training missions, and utilizing existing infrastructure on previously developed sites.

3264 **6.3.2.1. Direct Impacts**

3265 The modernization of facilities would allow for increased density in areas where there is not
3266 considerable land available for new development. This would have a beneficial impact on the
3267 visual character of the Installation as well as the functionality of the facilities. By expanding
3268 existing land uses only to the extent required to support new construction, overall system
3269 efficiency would be improved, and the cost and physical impacts of installing additional utility
3270 and transportation infrastructure would be relatively low.

3271 **6.3.2.2. Indirect Impacts**

3272 The construction of new facilities would result in improved personnel and cost efficiencies when
3273 compared to the No Action Alternative.

3274 **6.3.3. Selection of Preferred Alternative (Preferred Land Use Plan)**

3275 The Preferred Alternative (as summarized in 6.3.2 above and further described in Appendix A)
3276 includes a Land Use Plan developed by exploring land use options that address current spatial
3277 and functional issues, meet Installation mission requirements, and minimize impacts to the
3278 natural and cultural environment. Fort Jackson's mission focuses on IET, including BCT and
3279 AIT, as well as IMT. As such, Troop, Ranges, and Training land use functions are the most
3280 prominent activities on-Post and the collocation of associated facilities to support IET-BCT and
3281 IET-AIT functions will improve the operational efficiency on-Post. The majority of other
3282 functional uses exist to support Fort Jackson's training mission (FJ, 2012).

3283 Three alternate concept land use plans were developed through the analysis of current planning
3284 initiatives, functional relationships, and spatial patterns with the goal of improving the
3285 organization and layout of Fort Jackson. The Preferred Land Use Plan was developed through
3286 the blending and consolidation of components from the three alternate concept plans (FJ, 2012)
3287 and additional input from Fort Jackson stakeholders to identify the best use for future

3288 development. The primary changes to the existing land use are listed below; the item numbers
3289 and are illustrated in 6.1.

3290 1. Troop, already the largest land use within the cantonment, would experience the most
3291 significant increase. Troop is expanded north into the Ranges and Training land use
3292 within the cantonment boundary to accommodate IET-BCT requirements, and
3293 southeast into the Industrial land use to accommodate IMT-AIT requirements.

3294 2. Community land uses that are not directly associated with IET-BCT would be
3295 relocated, allowing further expansion of the Troop land use.

3296 3. Professional/Institutional, the smallest land use within the cantonment, remains
3297 centrally located with a minimal increase to account for consolidation.

3298 4. The Community land use would be expanded south of Strom Thurmond Boulevard to
3299 account for consolidation and a decrease of this land use in other areas of the
3300 Installation.

3301 Remaining elements of this PEA would be evaluated under the assumption that the Installation
3302 would proceed with the implementation of the "Preferred Land Use Plan" as an integral part of
3303 the Preferred Alternative.

3304
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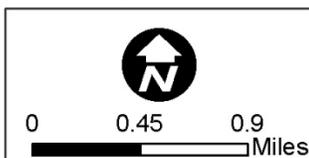
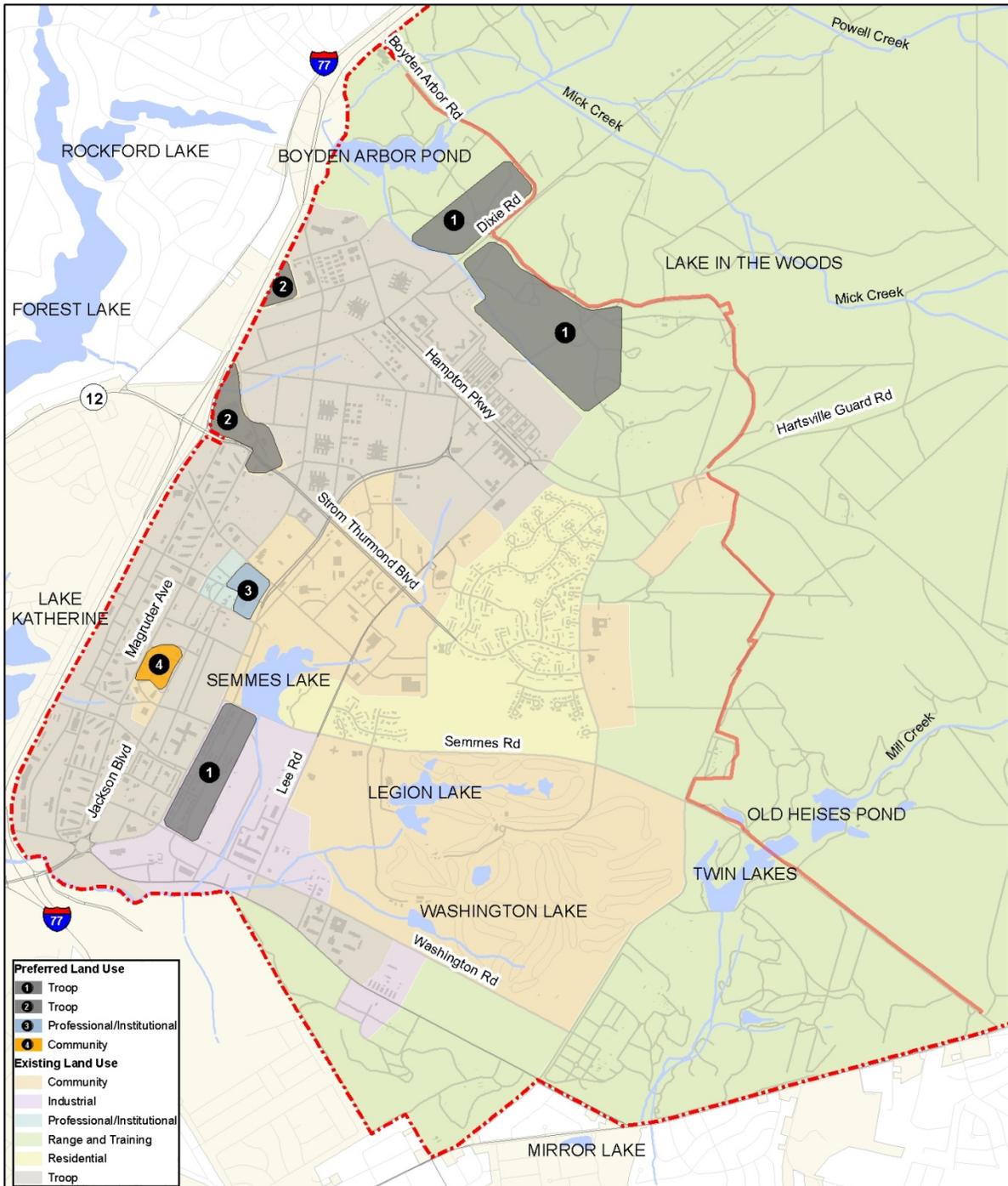


Figure 6.1
Fort Jackson Cantonment
Preferred Land Use Plan

Sources:
 World_Street_Map: ArcGIS Map Service
<http://services.arcgisonline.com/ArcGIS/services>
 Remaining Data: Fort Jackson

3306
 3307

3308 **6.4. Master Plan Short Range Projects**

3309 The following discussion is generally limited to identifying the relative impacts of the component
 3310 projects associated with implementation of the 2012 RPMP (Table 6-2). Direct impacts are
 3311 primarily construction related and mitigation by the inclusion of BMPs for control of sediment
 3312 runoff and fugitive dust emissions would minimize effects. In addition, if asbestos is present it
 3313 would be contained or removed in accordance with applicable regulations and procedures. Any
 3314 construction-related noise impacts can be mitigated by limiting hours of operations and would
 3315 be decided on a site-specific basis. If impacts are expected at or near any National Register
 3316 eligible cultural resource site, then appropriate mitigation would occur in coordination with the
 3317 SHPO.

3318 Tables 6-4 (No Action Alternative) and 6-3 (Full Implementation Alternative) identify 22 master
 3319 plan projects that are located on Fort Jackson cantonment area that have not previously been
 3320 analyzed for environmental impacts (Figure 3.1).

3321 **Table 6-2 List and Categorization of Short Range Master Plan Projects**

Project Name	Project Number	New Construction	Renovation/Rehabilitation	Infrastructure Improvement
FY 2010				
Drill Sergeant School Barracks	31354	√		√
BCT 3 Barracks Complex, Phase I	48169	√		
Quad DFAC and Electrical	69417	√	√	√
FY 2011				
BCT 2 Barracks, Phase 2	73299	√		√
AIT 1 Barracks Complex, Phase 1	53794	√		
Training Aids Support Center	71119	√		√
FY 2012				
AIT 1 Barracks, Phase 2	62995	√		
Repair Receptee Barracks Bldg	80589		√	
New Parking Lot for 193 rd Brigade	69417	√		√

FY 2013				
BCT 3 Barracks Complex, Phase 2	58970	√		
Repair Receptee Barracks Bldg	80590		√	
Dog Kennel Expansion		√		
Post Conference Room		√		
New PSUS Maintenance	80393	√		
FY 2014				
Repair Receptee Barracks Bldg	80592		√	
Pierce Terrace School		√		
FY 2015				
BCT 4 Barracks Complex, Phase 1	51937	√		√
BCT 4 Barracks Complex, Phase 2	76218	√		√
AIT 2 Barracks Complex, Phase 1	53796	√		
AIT 2 Barracks Complex, Phase 2	70989	√		
Reception Battalion	53798		√	√
FY 2016-2017				
Improvements to Golden Arrow	76161	√		√

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For purposes of this analysis, the No Action Alternative assumes that the 2012 RPMP projects would not be completed and existing facilities, if any, would continue in service. Proposed operations, dependent on new project facilities, cannot be established where sufficient existing facilities are not available. Under the Full Implementation Alternative, all projects would be completed along with any associated demolition as required to support all elements of the 2012 RPMP and associated current and future mission requirements.

3329 As mentioned previously, the analysis detailed here-in is confined to projects that have not
3330 undergone an environmental review. As new projects are identified, each project would be
3331 evaluated and considered in more detail in accordance with the programmatic review
3332 procedures established in this PEA, to ensure that significant adverse impacts would not occur.

3333 The following sections detail the direct and indirect impacts associated with these projects for
3334 both the No Action and Full Implementation Alternatives. The narrative discussion is limited to
3335 those impacts that are demonstrated to be adverse or beneficial in Tables 6-4 (No Action
3336 Alternative) and 6-3 (Full Implementation Alternative). As noted in the tables, the impacts are
3337 categorized as short- or long-term.

3338 **6.4.1. Land Use**

3339 **6.4.1.1. Full Implementation Alternative**

3340 The Full Implementation Alternative for master plan projects would not result in any changes to
3341 the land use within the cantonment area of Fort Jackson. Surrounding land use would not
3342 interfere with the proposed projects and execution of the Full Implementation Alternative would
3343 not conflict with adjacent land use.

3344 **6.4.1.2. No Action Alternative**

3345 The No Action Alternative for master plan projects would not impact existing land use within the
3346 cantonment area of Fort Jackson or the surrounding area.

3347 **6.4.2. Aesthetics and Visual Resources**

3348 **6.4.2.1. Full Implementation Alternative**

3349 Minor short-term adverse and long-term beneficial effects to the visual and aesthetic quality of
3350 the Installation would be expected. Short-term minor and localized adverse impacts would
3351 result from demolition and construction activities and associated equipment. Long-term
3352 beneficial impacts would result from the improvement in the aesthetic appeal of facilities. The
3353 proposed projects would result in the construction of new and the renovation/rehabilitation of
3354 facilities that would be consistent with Fort Jackson's IDG for site planning; architectural
3355 character, color, and materials; vehicular and pedestrian circulation; and landscaping to
3356 maintain a positive visual image throughout the Installation.

3357 **6.4.2.2. No Action Alternative**

3358 The No Action Alternative for master plan projects would result in the further decline of the
3359 aesthetic and visual appeal of existing facilities.

3360 **6.4.3. Physical Resources**

3361 **6.4.3.1. Full Implementation Alternative**

3362 All of the component projects entail construction activities that involve grading and other site
 3363 preparation activities that would have direct short-term adverse impacts on physical resources.
 3364 Soils would be moved and sedimentation could occur until ground cover is established. To
 3365 minimize impacts to physical resources, erosion and sedimentation control measures would be
 3366 implemented, including but not limited to the use of BMPs at the construction sites such as silt
 3367 fencing, hay bales, hydro-mulching, sediment traps, and vegetated filter strips. All activities
 3368 would be conducted in accordance with applicable federal, state, and Fort Jackson regulations
 3369 (*Fort Jackson Environmental Guidebook*). Placement of new facilities on steep slopes would be
 3370 avoided.

3371 Short-term adverse impacts on noise levels would be expected from heavy vehicles and earth-
 3372 moving equipment associated with construction and demolition activities. Construction noise
 3373 resulting from component projects would be expected to be localized to the immediate site
 3374 vicinity, intermittent, and restricted to permissible daytime hours. Projects associated with
 3375 construction of the BCT 2 Barracks (Phase 2), the BCT 3 Barracks Complex (Phases 1 and 2),
 3376 and Improvements to Golden Arrow Road will occur at least partially within Noise Zone II
 3377 (Figures 3.1 and 5.4).

3378 No effects on climate, physiographic, geologic, or topographic conditions would be expected
 3379 under the Full Implementation Alternative.

3380 **6.4.3.2. No Action Alternative**

3381 The No Action Alternative for master plan projects would result in minimal disruption of physical
 3382 resources, since this scenario would generally limit activities to existing facilities. Use of the
 3383 existing facilities for the ongoing activities is being conducted without an immediate threat to
 3384 human health or the environment and in compliance with existing regulations.

3385 No construction activities would occur under this alternative so noise levels would remain at
 3386 existing levels.

3387 **6.4.4. Water Resources**

3388 **6.4.4.1. Full Implementation Alternative**

3389 The potential for long-term adverse impacts on water resources could occur during construction
 3390 of all component projects due to the potential increase in impervious surface area, including
 3391 parking lots, sidewalks, driveways, and rooftops. Increased impervious surface may contribute
 3392 to increased erosion, stormwater runoff (in the forms of greater volume, velocity, and peak
 3393 flows), and pollutant (e.g., dissolved solids, petroleum hydrocarbons) and sediment loads. This
 3394 could result in increased transport of dissolved solids, sediment, or waterborne pollutants to

3395 surface waters via overland sheet flow or to groundwater through infiltration of porous soils
3396 during overland sheet flow or from stormwater retention ponds. In some instances, reduced
3397 groundwater absorption and infiltration of runoff may be experienced which would otherwise
3398 recharge groundwater aquifers. The dust and sediment impacts would be minimized by
3399 adherence to sediment and erosion control plans. Impacts associated with increased
3400 stormwater runoff during construction would be reduced through the implementation of BMPs as
3401 identified in Section 6.4.3.1. Minimum control measures for new and post-construction activities
3402 are included in the Installation's Stormwater Permit.

3403 The Dog Kennel Expansion project facility encroaches on areas adjacent to floodplains. This
3404 project may involve short-term adverse impacts as construction activities are completed within
3405 the floodplains. The design of this facility would protect the floodway, flood storage, and
3406 adjacent floodplains over the long term.

3407 **6.4.4.2. No Action Alternative**

3408 Under the No Action Alternative there would be no change in impervious surfaces resulting from
3409 construction or expansion of new facilities, parking lots, or roadways. The No-Action Alternative
3410 would not impact surface water, groundwater, stormwater, or floodplains.

3411 **6.4.5. Biological Resources**

3412 Natural resources including vegetation, fish and wildlife, wetlands, and threatened and
3413 endangered species may all be impacted by construction and Post-construction activities. The
3414 degree of impact depends upon the importance of the resource; percentage of the resource that
3415 would be disturbed relative to its occurrence in the region; sensitivity of the resource to the
3416 project activities; and duration of ecological implications. Specific concerns for biological
3417 resources include construction activities resulting in permanent habitat loss and temporary
3418 disturbance. Post-construction concerns may include habitat degradation resulting from
3419 increased weed populations.

3420 **6.4.5.1. Full Implementation Alternative**

3421 The Dog Kennel Expansion and Pierce Terrace School Replacement projects would likely
3422 impact non-tidal wetlands (Figures 3.1 and 5.4 – 5.8). The BCT 2 Barracks (Phase 2) and
3423 projects within the Reception Battalion area (i.e., Reception Battalion Upgrade/Modernization,
3424 Repair Receptee Barracks Building 1892 and Building 1872) have the potential for a lesser
3425 degree of adverse impacts to non-tidal wetlands. Although no critical habitat for any federally
3426 listed endangered or threatened species exists on Fort Jackson, wetland areas are potential
3427 habitat for the endangered Rough-leaved Loosestrife. The impacts of each project on wetlands
3428 and associated inhabitants would need to be evaluated independently as detailed siting and
3429 design is being developed. Once the extent of impacts are determined, mitigating actions
3430 required for permitting, in compliance with Section 404 and 401 of the CWA, would need to be
3431 identified.

3432 Phase 2 construction of the BCT 2 Barracks would occur in the vicinity of cavity trees and a
3433 conservation area, likely used by the protected Red-cockaded Woodpecker for roosting and
3434 nesting. The Endangered Species Management components of the INRMP for Rough-leaved
3435 Loosestrife (FJ-DLE-PSW, 2007) and the ESMP for the Red-cockaded Woodpecker (FJ-DLE-
3436 PSW, 1998) should be consulted for appropriate management efforts necessary to adhere to
3437 the associated conservation goals.

3438 Impacts to vegetation will be minimized by only removing necessary trees and implementing
3439 construction BMPs. Select Master Plan Projects (i.e., BCT 3 Barracks Complex (Phases 1 and
3440 2), Pierce Terrace School Replacement, New Parking Lot for 193rd Brigade) are located in areas
3441 dominated by forest stands and therefore have the greatest potential to adversely impact local
3442 vegetation. Other projects that may impact forest stands, to a lesser degree, include
3443 construction associated with the AIT Barracks Complex, the BCT 2 Barracks (Phase 2), and the
3444 BCT 4 Barracks Complex (Phases 1 and 2). Areas will be permanently re-vegetated as quickly
3445 as possible upon completion of construction activities to help limit soil erosion and sediment
3446 transport to surface waters. While common species of wildlife may be disturbed or displaced
3447 during the construction of projects, full implementation of component projects would not
3448 substantially impact contiguous forested areas used by interior dwelling wildlife species.

3449 **6.4.5.2. No Action Alternative**

3450 The No Action Alternative would not differ from existing conditions.

3451 **6.4.6. Air Quality**

3452 Air emissions resulting from implementation of the component projects were evaluated in
3453 accordance with federal, state, and local air pollution standards and regulations. Substantial air
3454 quality impacts resulting from the proposed projects are defined as those that raise ambient air
3455 pollution levels above any NAAQS; factor into an existing NAAQS violation; or hinder or
3456 postpone NAAQS attainment.

3457 **6.4.6.1. Full Implementation Alternative**

3458 All of the component projects involve construction and or demolition activities that would have
3459 direct short-term adverse impacts on local air quality. Temporary adverse impacts on air quality
3460 may result from construction vehicle emissions, land clearing, paving off-gases, or dust and
3461 would end upon construction completion. During construction, precautions outlined in the South
3462 Carolina Air Pollution Control Regulations (SCAPCR), such as controlling fugitive dust and open
3463 burning, would be required. All contractors would comply fully with federal, state, and local air
3464 regulations. All persons responsible for any operation, process, handling, transportation, or
3465 storage facility that could result in fugitive dust would take reasonable precautions to prevent
3466 such dust from becoming airborne. The use of BMPs during land clearing operations and
3467 construction activities (e.g., using water to control dust on construction/demolition sites) would
3468 assist in minimizing the release of dust. Use of efficient practices and avoidance of long idle

3469 times by construction equipment would help to reduce engine emissions. In addition,
 3470 construction would be executed in full compliance with South Carolina regulatory requirements,
 3471 with compliant practices or products. These requirements include, but are not limited to, the
 3472 following:

- 3473 • VOCs (SCAPCR 61-62.5-5);
- 3474 • Control of fugitive particulate matter (SCAPCR 61-62.6);
- 3475 • Prohibition of open burning (SCAPCR 61-62.2); and
- 3476 • Emissions from fuel burning operations (SCAPCR 61-62.5-1).

3477
 3478 Execution of the Full Implementation Alternative may also introduce new stationary sources of
 3479 pollutants, such as heating boilers. Emission levels remaining below the General Conformity
 3480 Rule applicability threshold and the GHG threshold in the draft CEQ guidance, and that do not
 3481 contribute to violation of any federal, state, or local air regulation, would be considered minor air
 3482 quality effects. Beyond the implementation of BMPs, no mitigation measures would be required.

3483 **6.4.6.2. No Action Alternative**

3484 The No Action Alternative would not affect ambient air quality. No new construction emissions
 3485 would be generated.

3486 **6.4.7. Historical and Cultural Resources**

3487 Historical and cultural resources may be directly impacted by physically changing, damaging, or
 3488 ruining all or part of the resource, changing attributes of the resource's surroundings that
 3489 contribute to the resource, modifying the character of the resource through visual or audible
 3490 means, or neglecting the resource. Indirect impacts typically result from increased population
 3491 and associated development to accommodate more people.

3492 In accordance with 36 CFR Part 800, the implementing regulations for the NHPA, an adverse
 3493 effect on cultural resources would be identified if the Full Implementation Alternative directly or
 3494 indirectly altered any of the characteristics of a historic property that qualify it for inclusion in the
 3495 NRHP in such a way that would diminish the integrity of the property's location, design, setting,
 3496 materials, workmanship, feeling, or association. Adverse effects could include reasonably
 3497 foreseeable effects caused by the proposed action that occur later or farther removed in
 3498 distance or that are cumulative.

3499 **6.4.7.1. Full Implementation Alternative**

3500 Within Fort Jackson, there are no identified access routes to or sites of religious or ceremonial
 3501 rites of the Native Americans, no properties listed on the NRHP, no properties listed on the

3502 National Registry of National Landmarks, no properties listed as a National Historic Landmark,
3503 and no properties listed on the World Heritage List.

3504 To document and evaluate the built environment resources on Fort Jackson, multiple historic
3505 resources surveys have been conducted on over 1,700 structures that are present on-Post. No
3506 eligible historic landscapes or military landscapes were identified at Fort Jackson. Only three
3507 structures were considered eligible for inclusion in the NRHP; only one structure, building 2495
3508 (a MWR general maintenance facility) remains. No proposed construction projects or operation
3509 would interfere with this structure.

3510 Although the ICRMP states that none of the 27 cemeteries on Fort Jackson are considered
3511 eligible for NRHP inclusion, all should be protected (USACE-SD, 2008). No proposed
3512 construction projects would result in any impacts to the four cemeteries located within the
3513 cantonment area.

3514 Approximately 81% of Fort Jackson has been surveyed for archaeological resources. Areas not
3515 surveyed are in previously disturbed areas within the cantonment area and, according to the
3516 South Carolina Historic Preservation Office, disturbed areas do not require survey (*Cantonment
3517 Area, Fort Jackson, Richland County, South Carolina, Letter from the State Historic
3518 Preservation Office dated December 15, 1993*). Given that each of the component projects
3519 included in this analysis are within the cantonment area, the proposed projects would not result
3520 in any impacts to archaeological resources.

3521 **6.4.7.2. No Action Alternative**

3522 The No Action Alternative for master plan projects would result in minimal disruption of existing
3523 historical and cultural resources, since this scenario would generally limit activities to existing
3524 facilities.

3525 **6.4.8. Socioeconomic Environment**

3526 This section discusses potential effects of the component projects on the local economy.
3527 Construction projects typically contribute short-term economic benefits to the area in terms of
3528 income.

3529 **6.4.8.1. Full Implementation Alternative**

3530 A short-term beneficial impact on the local economy would result from the component projects
3531 through hiring of local construction companies. The replacement barracks, housing projects,
3532 transportation features, and other facilities would provide long-term beneficial impacts on the
3533 socioeconomic resources at the Post. The increased capacity would support the growing
3534 population and limit overcrowding and traffic issues while the modernization of the units would
3535 also serve as a morale incentive to personnel. Each of the component projects could also help
3536 to retain enlisted soldiers, thereby improving the ability to meet the overall military mission. The

3537 new construction of such facilities would also result in long-term beneficial impacts by reducing
3538 maintenance requirements and providing more energy-efficient facilities.

3539 **6.4.8.2. No Action Alternative**

3540 The No Action Alternative has long-term indirect, adverse, socioeconomic impacts associated
3541 with soldier housing and other aged facilities. Failure to implement the component projects
3542 would result in the continued use of existing deteriorating, maintenance-intensive, and inefficient
3543 facilities which are approaching, or past, the end of their useful life. These semi-permanent and
3544 temporary facilities are more expensive to maintain, require additional utilities support to heat
3545 and cool, are not effectively designed to support current missions, are visually unattractive, and
3546 fail to meet the appearance guidelines contained in the IDG. In addition, the poor quality of the
3547 housing presents a morale concern that could affect the ability to keep enlisted soldiers; thereby
3548 affecting the ability to meet the mission.

3549 Fort Jackson's population has increased over the past few years, putting a substantial strain on
3550 current facility capacities. The lack of sufficient housing, roads and parking lots to support the
3551 additional traffic, classroom space, training and support facilities, and adequate maintenance
3552 building space, provide facility and transportation limitations that are considered to be long-term
3553 adverse impacts. If the component projects are not provided, the continued expansion of the
3554 Post's population due to Base Realignment and Closure and other mission changes would
3555 cause severe overcrowding at the Post's current facilities. The No Action Alternative would
3556 result in a general degradation of the efficiency and effectiveness of instructional programs and
3557 maintenance activities. Insufficient housing and transportation capacity present morale
3558 concerns that could affect the ability to keep enlisted soldiers; thereby affecting the ability to
3559 meet the mission.

3560 **6.4.9. Infrastructure**

3561 This section discusses potential impacts to infrastructure, including utilities and transportation,
3562 resulting from the Full Implementation Alternative and the No Action Alternative.

3563 **6.4.9.1. Full Implementation Alternative**

3564 Full implementation of the component projects would include maintenance and infrastructure
3565 improvements to utility lines and facilities throughout the Installation. Long-term beneficial
3566 impacts to the existing utilities would result by providing expanded services to meet the
3567 increased needs of the Installation. Construction of a CEP, associated with development of the
3568 BCT 4 Barracks Complex (Phase 1), would provide long-term benefits to the Post infrastructure
3569 by providing adequate utility service to the barracks and other facilities as the Post continues to
3570 develop. Utilities expansion and/or improvements would also be associated with the Quad
3571 DFAC and Electrical Substation, BCT 2 Barracks (Phase 2), Training Aids Support Center, and
3572 Reception Battalion Upgrade/Modernization projects. Updated infrastructure would be more
3573 energy efficient, cost effective, and safer to the people on the Installation. In contrast,

3574 construction of the Drill Sergeant School Barracks could result in a long-term adverse impact
3575 through increased usage of existing utilities without associated improvements or enhanced
3576 capacity.

3577 Transportation improvements consist of parking for personally owned vehicles, new signage,
3578 and exterior lighting for the BCT Complex and a new parking lot for 100 cars next to Building
3579 5385 for the 193rd Brigade. Lastly, the realignment, repaving, and expansion of Golden Arrow
3580 Road will provide traffic improvements in the northern portion of the cantonment area. Short-
3581 term effects would be associated with construction traffic. Construction vehicles would be
3582 scheduled and routed to minimize conflicts with other traffic. The Full Implementation
3583 Alternative would have no appreciable effect on off-Post roadways, air, rail, or public
3584 transportation.

3585 **6.4.9.2. No Action Alternative**

3586 The No Action Alternative would have little or no impact on the infrastructure throughout the
3587 Installation. This alternative could have long-term adverse impacts by not providing a new CEP,
3588 parking lots, or road improvements to help accommodate an increasing population.

3589 **6.4.10. Environmental Restoration and Compliance**

3590 This section discusses potential impacts to environmental restoration and compliance, including
3591 hazardous waste, PCBs, POLs, ACM, LBP, pest management, munitions and radioactive
3592 waste.

3593 **6.4.10.1. Full Implementation Alternative**

3594 Renovation or demolition and removal of the old structures would eliminate long-term
3595 environmental restoration and compliance concerns associated with ACM and LBP; however,
3596 short-term adverse impacts could result during the management and disposal of these wastes
3597 during demolition or renovation efforts. The removal of an underground fuel tank associated
3598 with the BCT 2 Barracks (Phase 2) project would help to alleviate long-term environmental
3599 concerns. All hazardous materials and waste associated with renovation, demolition, and
3600 construction would be handled and disposed of in accordance with federal, state, and local
3601 regulations and in accordance with established Installation procedures.

3602 The construction contractors would be responsible for preventing spills by implementing proper
3603 storage and handling procedures. In order to mitigate for environmental impacts associated
3604 with construction, demolition, and renovation projects, standard construction procedures and
3605 appropriate BMPs would be followed. If unknown USTs or monitoring wells are discovered
3606 during construction activities, the Installation environmental office would be contacted.

3607 **6.4.10.2. No Action Alternative**

3608 The No Action Alternative would not result in any changes to the existing storage, handling,
 3609 generation, or use of hazardous or toxic materials/wastes on the Installation. There would be
 3610 no special waste generation (e.g, ACM, LBP) from facility demolition or renovation under this
 3611 alternative. All friable asbestos in the Quad dining facilities, AIT and Receptee barracks, Post
 3612 Conference Room, Pierce Terrace School, and Reception Battalion has been safely
 3613 remediated. However, over the long- term, the presence of ACM and LBP presents a
 3614 continuing management problem and potential threat to health and the environment.

3615 **6.4.11. Operations**

3616 This section discusses potential impacts to operations and the three indicators of the Installation
 3617 to meet these requirements including: efficiency and safety, ability to meet the mission and
 3618 regulatory compliance.

3619 **6.4.11.1. Full Implementation Alternative**

3620 Operational concerns regarding the need for organizational classroom space in the IET-BCT
 3621 area would be reduced through the construction of the Quad DFAC and Electrical Substation
 3622 and the new parking lot for the 193rd Brigade. The conversion of dining facility space to
 3623 organizational classroom space within a troop functional area would provide long-term benefits
 3624 to the Post infrastructure.

3625 All of the Master Plan component projects would provide a direct long-term beneficial impact on
 3626 the efficiency and/or safety aspect of Post operations. Providing consolidated or dedicated
 3627 proper facilities improves efficiency of operation. Replacement of outdated and other temporary
 3628 facilities would lower maintenance requirements and eliminate safety concerns over ACM and
 3629 LBP. The new facilities would be more energy efficient and be designed with more modern
 3630 safety factors in place. Improved housing and operational facilities and increased transportation
 3631 capacities would also help to increase retention of enlisted soldiers, thereby improving the ability
 3632 to meet the mission. Even the expansion of the dog kennel provides a more efficient service for
 3633 personnel who do not have to leave the Post to kennel pets.

3634
 3635 The provision of facilities for establishment or consolidation of mission activities, and the
 3636 replacement of soldier and trainee housing were considered a long-term beneficial direct impact
 3637 to the ability to meet the mission. The Full Implementation Alternative has direct, long-term
 3638 beneficial impacts on the ability to meet the mission operations for the organizations and
 3639 personnel dependent upon all component projects with the exception of the following:

- 3640 • Dog Kennel Expansion;
- 3641 • Post Conference Room; and
- 3642 • Reception Battalion Upgrade/Modernization.

3643 **6.4.11.2. No Action Alternative**

3644 The continuation of existing fragmented mission elements and addition of new mission elements
 3645 without the capability to add proper facilities represent direct adverse operational impacts.
 3646 Several existing and proposed mission elements do not have available facilities, or are
 3647 operating with inadequate or unconsolidated facilities. The lack of proper facilities for these
 3648 elements represents a direct adverse impact on efficiency and the ability to meet the mission
 3649 operations. As a result, the No Action Alternative has direct, long-term operational deficiencies
 3650 and limitations on the organizations dependent upon the following projects:

- 3651 • Drill Sergeant School Barracks (Project No. 31354)
- 3652 • BCT 2 Barracks, Phase 2 (Project No. 73299)
- 3653 • AIT 1 Barracks Complex, Phase 1 (Project No. 53794)
- 3654 • Training Aids Support Center (TSC) (Project No. 71119)
- 3655 • BCT 3 Barracks Complex, Phase 2 (Project No. 58970)
- 3656 • BCT 4 Barracks Complex, Phase 1 (Project No. 51937)
- 3657 • BCT 4 Barracks Complex, Phase 2 (Project No. 76218)
- 3658 • Improvements to Golden Arrow Road (Project No. 76161)

3659
 3660 Under the No Action Alternative, failure to implement the replacement projects for the Quad
 3661 dining facilities, Post Conference Room, Pierce Terrace School, and Reception Battalion would
 3662 result in the continued use of inadequate and deteriorated structures. These conditions would
 3663 continue to reduce performance of skilled personnel, lower morale, reduce overall mission
 3664 capabilities, require excessive maintenance and repair expenditures for the continued operation
 3665 of existing facilities. Continued use of these substandard facilities would continue to adversely
 3666 affect the training mission of Fort Jackson.

3667 These negative developments would bring about conditions that are not in keeping with current
 3668 U S Army policy of providing the highest quality-of-life for military personnel, retirees, and
 3669 dependents. The continued use of the existing deteriorated facilities and other operating
 3670 limitations associated with the No Action Alternative would have an indirect adverse impact on
 3671 the ability of the Installation to meet current and projected mission requirements. This could
 3672 compromise the ability of the Installation to remain viable in this era of military Installation
 3673 consolidation and closure. Furthermore, the additional man-years of effort required to maintain
 3674 antiquated facilities, and to function in existing inefficient facilities would be wasted and lost from
 3675 support of other mission requirements

3676 Table 6-3 Master Plan Projects – Full Implementation Alternative

Master Plan Projects	Land Use		Phys. Res.				Water Resources				Biological Res.				Air Quality		Hist. & Cult. Res.			Socioec. Resources			Infrastru. c.		Environmental Restoration & Compliance							Operations				
	Fort Jackson	Surrounding	Aesthetics & Vis. Res.	Climate	Physio., Geo., & Top.	Soils	Noise	Surface Water	Groundwater	Stormwater	Floodplains	Fish & Wildlife	Vegetation	Wetlands	T&E Species	Regional	Fort Jackson	Archaeological	Hist. Buildi. & Struct.	Cemeteries	Regional Economy	Housing	Environ. Justice	Protection of Children	Utilities	Transport. Systems	Hazard. Waste	PCBs	POLs	Asbestos	Lead-Based Paint	Pest Management	Munitions	Radioactive Waste	Efficiency/Safety	Ability to Meet Mission
Drill Sergeant School Barracks	o	o	S	o	o	S	S	S	L	L	o	S	-	o	S	o	S	-	-	+S	+L	o	o	L	+L	o	o	-	-	-	o	-	o	+L	+L	o
BCT 3 Barracks Complex, Phase 1	o	o	S	o	o	S	S	S	L	L	L	L	o	S	o	S	-	-	-	+S	+L	o	o	-	o	o	o	-	+L	+L	o	-	o	+L	+L	o
Quad DFAC & Electrical Substation	o	o	+L	o	o	S	S	S	o	o	o	S	-	o	S	o	S	-	-	+S	o	o	o	+L	+L	o	o	-	+L	+L	o	-	o	+L	+L	o
BCT 2 Barracks, Phase 2	o	o	S	o	o	S	S	S	L	L	L	L	L	L	o	S	-	-	-	+S	+L	o	o	+L	o	o	o	+L	-	-	o	-	o	+L	+L	o
AIT 1 Barracks Complex, Phase 1	o	o	S	o	o	S	S	S	L	L	o	L	L	o	S	o	S	-	-	+S	+L	o	o	-	o	o	o	-	-	-	o	-	o	+L	+L	o
Training Aids Support Center	o	o	S	o	o	S	S	S	L	L	o	S	-	o	S	o	S	-	-	+S	o	o	o	+L	o	o	o	-	-	-	o	-	o	+L	+L	o
AIT 1 Barracks, Phase 2	o	o	S	o	o	S	S	S	L	L	o	L	L	o	S	o	S	-	-	+S	+L	o	o	-	o	o	o	-	+L	+L	o	-	o	+L	+L	o

Master Plan Projects	Land Use		Phys. Res.				Water Resources				Biological Res.				Air Quality		Hist. & Cult. Res.			Socioec. Resources			Infrastru c.		Environmental Restoration & Compliance							Operations					
	Fort Jackson	Surrounding	Aesthetics & Vis. Res.	Climate	Physio., Geo., & Top.	Soils	Noise	Surface Water	Groundwater	Stormwater	Floodplains	Fish & Wildlife	Vegetation	Wetlands	T&E Species	Regional	Fort Jackson	Archaeological	Hist. Buildi. & Struct.	Cemeteries	Regional Economy	Housing	Environ. Justice	Protection of Children	Utilities	Transport. Systems	Hazard. Waste	PCBs	POLs	Asbestos	Lead-based Paint	Pest Management	Munitions	Radioactive Waste	Efficiency/Safety	Ability to Meet Mission	Reg. Compliance
Repair Receptee Barracks Bldg 1892	o	o	+L	o	o	S	S	S	o	o	o	L	L	L	L	o	S	.	.	.	+S	+L	o	o	--	o	o	o	--	+L	+L	o	--	o	+L	+L	o
New Parking Lot for 193 rd Brigade	o	o	S	o	o	S	S	S	L	L	o	L	L	o	S	o	S	.	.	.	+S	o	o	o	--	+L	o	o	--	--	--	o	--	o	+L	+L	o
BCT 3 Barracks Complex, Phase 2	o	o	S	o	o	S	S	S	L	L	L	L	L	o	S	o	S	.	.	.	+S	+L	o	o	--	o	o	o	--	--	--	o	--	o	+L	+L	o
Repair Receptee Barracks Bldg 1872	o	o	+L	o	o	S	S	S	o	o	o	L	L	L	L	o	S	.	.	.	+S	+L	o	o	--	o	o	--	+L	+L	o	--	o	+L	+L	o	
Dog Kennel Expansion	o	o	S	o	o	S	S	S	L	L	L	L	L	L	L	o	S	.	.	.	+S	o	o	o	--	o	o	o	--	--	--	o	--	o	+L	+L	o
Post Conference Room	o	o	S	o	o	S	S	S	L	L	o	S	--	o	S	o	S	.	.	.	+S	o	o	o	--	o	o	--	+L	+L	o	--	o	+L	+L	o	
New PSUS Maintenance Building	o	o	S	o	o	S	S	S	L	L	o	S	--	o	S	o	S	.	.	.	+S	o	o	o	--	o	o	--	--	--	o	--	o	+L	+L	o	

Master Plan Projects	Land Use		Phys. Res.				Water Resources				Biological Res.				Air Quality		Hist. & Cult. Res.			Socioec. Resources			Infrastru. c.		Environmental Restoration & Compliance							Operations					
	Fort Jackson	Surrounding	Aesthetics & Vis. Res.	Climate	Physio., Geo., & Top.	Soils	Noise	Surface Water	Groundwater	Stormwater	Floodplains	Fish & Wildlife	Vegetation	Wetlands	T&E Species	Regional	Fort Jackson	Archaeological	Hist. Buildi. & Struct.	Cemeteries	Regional Economy	Housing	Environ. Justice	Protection of Children	Utilities	Transport. Systems	Hazard. Waste	PCBs	POLs	Asbestos	Lead-Based Paint	Pest Management	Munitions	Radioactive Waste	Efficiency/Safety	Ability to Meet Mission	Reg. Compliance
Repair Receptee Barracks Building 1880	o	o	+L	o	o	S	S	S	o	o	o	L	-	o	o	o	S	-	-	-	+S	+L	o	o	-	o	o	o	-	+L	+L	o	-	o	+L	+L	o
Pierce Terrace School Replacement	o	o	S	o	o	S	S	S	L	L	L	L	L	L	o	S	-	-	-	+S	o	o	o	-	o	o	o	-	+L	+L	o	-	o	+L	+L	o	
BCT 4 Barracks Complex, Phase 1	o	o	S	o	o	S	S	S	L	L	o	L	L	o	S	o	S	-	-	+S	+L	o	o	+L	o	o	o	-	-	-	o	-	o	+L	+L	o	
BCT 4 Barracks Complex, Phase 2	o	o	S	o	o	S	S	S	L	L	o	L	L	o	S	o	S	-	-	+S	+L	o	o	-	+L	o	o	-	-	-	o	-	o	+L	+L	o	
AIT 2 Barracks Complex, Phase 1	o	o	S	o	o	S	S	S	L	L	o	L	L	o	S	o	S	-	-	+S	+L	o	o	-	o	o	o	-	+L	+L	o	-	o	+L	+L	o	
AIT 2 Barracks Complex, Phase 2	o	o	S	o	o	S	S	S	L	L	o	L	L	o	S	o	S	-	-	+S	+L	o	o	-	o	o	o	-	+L	+L	o	-	o	+L	+L	o	
Reception Battalion Upgrade/Modernization	o	o	+L	o	o	S	S	S	o	o	o	L	L	L	L	o	S	-	-	+L	o	o	o	+L	o	o	o	-	+L	+L	o	-	o	+L	+L	o	

Master Plan Projects	Land Use		Phys. Res.				Water Resources				Biological Res.			Air Quality		Hist. & Cult. Res.			Socioec. Resources				Infrastru c.		Environmental Restoration & Compliance						Operations						
	Fort Jackson	Surrounding	Aesthetics & Vis. Res.	Climate	Physio., Geo., & Top.	Soils	Noise	Surface Water	Groundwater	Stormwater	Floodplains	Fish & Wildlife	Vegetation	Wetlands	T&E Species	Regional	Fort Jackson	Archaeological	Hist. Buildi. & Struct.	Cemeteries	Regional Economy	Housing	Environ. Justice	Protection of Children	Utilities	Transport. Systems	Hazard. Waste	PCBs	POLs	Asbestos	Lead-Based Paint	Pest Management	Munitions	Radioactive Waste	Efficiency/Safety	Ability to Meet Mission	Reg. Compliance
Improvements to Golden Arrow Road	o	o	S	o	o	S	S	S	L	L	o	S	-	o	S	o	S	-	-	-	+S	S	o	o	--	+L	o	o	-	-	-	o	-	o	+L	+L	o
Note							<table border="1"> <tr> <td>Table does not include projects that have been analyzed in prior NEPA documentation.</td> <td>o No effect</td> </tr> <tr> <td></td> <td>+ Beneficial Effect</td> </tr> <tr> <td></td> <td>-- Attribute Not Present</td> </tr> </table>																							Table does not include projects that have been analyzed in prior NEPA documentation.	o No effect		+ Beneficial Effect		-- Attribute Not Present		
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	+ Beneficial Effect																																				
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3679 Table 6-4 Master Plan Projects – No Action Alternative.

Master Plan Projects	Land Use		Phys. Res.				Water Resources				Biological Res.			Air Quality		Hist. & Cult. Res.			Socioec. Resources			Infrastru c.		Environmental Restoration & Compliance							Operations					
	Fort Jackson	Surrounding	Aesthetics & Vis. Res.	Climate	Physio., Geo., & Top.	Soils	Noise	Surface Water	Groundwater	Stormwater	Floodplains	Fish & Wildlife	Vegetation	Wetlands	T & E Species	Regional	Fort Jackson	Archaeological Sites	Hist. Buildi. & Struct.	Cemeteries	Regional Economy	Housing	Environ. Justice	Protection of Children	Utilities	Transport. Systems	Hazard. Waste	PCBs	POLs	Asbestos	Lead-Based Paint	Pest Management	Munitions	Radioactive Waste	Efficiency/Safety	Ability to Meet Mission
Drill Sergeant School Barracks	o	o	L	o	o	o	o	o	o	o	o	o	-	-	o	o	-	-	-	L	L	o	o	o	L	o	o	-	-	-	o	-	o	L	L	o
BCT 3 Barracks Complex, Phase 1	o	o	L	o	o	o	o	o	o	o	o	o	-	-	o	o	-	-	-	L	L	o	o	o	o	o	o	-	L	L	o	-	o	L	L	o
Quad DFAC & Electrical Substation	o	o	L	o	o	o	o	o	o	o	o	o	-	-	o	o	-	-	-	L	o	o	o	o	L	o	o	-	L	L	o	-	o	L	L	o
BCT 2 Barracks, Phase 2	o	o	L	o	o	o	o	o	o	o	o	o	o	o	o	o	-	-	-	L	L	o	o	o	o	L	o	o	-	-	o	-	o	L	L	o
AIT 1 Barracks Complex, Phase 1	o	o	L	o	o	o	o	o	o	o	o	o	-	-	o	o	-	-	-	L	L	o	o	o	o	o	o	-	-	-	o	-	o	L	L	o
Training Aids Support Center	o	o	L	o	o	o	o	o	o	o	o	o	-	-	o	o	-	-	-	L	o	o	o	o	L	o	o	-	-	-	o	-	o	L	L	o
AIT 1 Barracks, Phase 2	o	o	L	o	o	o	o	o	o	o	o	o	-	-	o	o	-	-	-	L	L	o	o	o	o	o	o	-	L	L	o	-	o	L	L	o
Repair Receptee	o	o	L	o	o	o	o	o	o	o	o	o	o	o	o	o	-	-	-	L	L	o	o	o	o	o	o	-	L	L	o	-	o	L	L	o

Master Plan Projects	Land Use		Phys. Res.				Water Resources				Biological Res.			Air Quality		Hist. & Cult. Res.			Socioec. Resources				Infrastru. c.		Environmental Restoration & Compliance							Operations					
	Fort Jackson	Surrounding	Aesthetics & Vis. Res.	Climate	Physio., Geo., & Top.	Soils	Noise	Surface Water	Groundwater	Stormwater	Floodplains	Fish & Wildlife	Vegetation	Wetlands	T & E Species	Regional	Fort Jackson	Archaeological Sites	Hist. Buildi. & Struct.	Cemeteries	Regional Economy	Housing	Environ. Justice	Protection of Children	Utilities	Transport. Systems	Hazard. Waste	PCBs	POLs	Asbestos	Lead-Based Paint	Pest Management	Munitions	Radioactive Waste	Efficiency/Safety	Ability to Meet Mission	Reg. Compliance
Improvements to Golden Arrow Road	o	o	L	o	o	o	o	o	o	o	o	o	--	--	o	o	-	-	-	L	o	o	o	o	L	o	o	-	-	-	o	-	o	L	L	o	
Note		Table does not include projects that have been analyzed in prior NEPA documentation.		o No effect																																	
				+ Beneficial Effect																																	
				-- Attribute Not Present																																	

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3684 **6.5. Ongoing Mission Activities**

3685 Section 3.5 of this EA describes a wide range of ongoing mission activities that occur at Fort
 3686 Jackson in the context of 15 "activity groups". The following sections provide a programmatic
 3687 evaluation of impacts associated with the continued performance of ongoing mission work tasks
 3688 at the activity group level, with emphasis on procedures and regulations that are followed to
 3689 ensure that no significant adverse impacts occur as a result of these actions. Tables 6.5 and 6.6
 3690 provide a summary of ongoing mission activity impacts under the Full Implementation
 3691 Alternative (i.e., expansion of ongoing mission activities as required to meet all elements of the
 3692 proposed 2012 RPMP and future operations) and under the No Action Alternative (i.e.,
 3693 continuation of ongoing mission activities at their current level).

3694 Ongoing mission activities at Fort Jackson must continue to ensure the Installation's ability to
 3695 meet mission requirements. The No Action Alternative assumes that these actions would
 3696 continue at their current level, with changes in that level of operation limited to those required to
 3697 ensure compliance with changing environmental laws and regulations. The narrative provided
 3698 reviews the impacts as related to the ongoing activities.

3699 The Full Implementation Alternative discussion concentrates on the extent and type of changes
 3700 in environmental impacts (both beneficial and adverse) which result from a change in the
 3701 baseline conditions evaluated as part of the No Action Alternative. Table 6.5 provides a graphic
 3702 summary of these impacts, along with the environmental impacts that would persist as a result
 3703 of continued ongoing mission activities identified in Table 6.6.

3704 Discussions are focused on areas where impacts are noted as shown on Table 6.5. In general,
 3705 discussion is not provided where the activity does not affect an attribute or the attribute is not
 3706 present where the activity occurs. Sections 6.5.1 – 6.5.15 discuss and analyze additional levels
 3707 of ongoing mission activities that would be expected to occur as all elements of the 2012 RPMP
 3708 are implemented.

3709 **6.5.1. Administration**

3710 Administrative actions include the development and review of doctrine, lesson plans, operational
 3711 plans, policies, notices, and procedures; the supervision and management of personnel; word
 3712 processing, records keeping and filing; printing, reproduction, and copying; and photographic
 3713 lab operation. These actions are required to ensure proper command and control of personnel,
 3714 and stewardship of all ongoing mission activities in a manner to ensure completion of mission
 3715 requirements and compliance with applicable environmental laws and regulations.

3716 **6.5.1.1. Full Implementation Alternative**

3717 Fort Jackson's governmental and contractor staffs have been sized (through the Office of
 3718 Management and Budget, Circular A-76 Commercial Activities Program and the competitive
 3719 contract bid process) to provide required administrative services with the most efficient and
 3720 effective organization. Consequently, only required actions and functions are accomplished,
 3721 and these activities are accomplished by the most efficiently sized organization. Implementation
 3722 of the 2012 RPMP would result in no significant changes in ongoing administrative actions or
 3723 their associated direct and indirect impacts.

3724 **6.5.1.2. No Action Alternative**

3725 **Direct Impacts**

3726 Administrative activities such as printing, reproduction and copying, and the operation of
 3727 photographic labs introduce the use of potentially hazardous chemicals. Direct short- and long-
 3728 term adverse impacts could result from the improper use or disposal of these chemicals.
 3729 Current standard operating procedures call for the proper handling of these chemicals and
 3730 hazardous wastes, and the recycling of usable by-products such as silver from photographic
 3731 labs. These measures are implemented and monitored to ensure that minimal adverse impacts
 3732 occur.

3733 **Indirect Impacts**

3734 Administrative actions establish the parameters within which all other ongoing actions at the
 3735 Installation occur. Proactive policies which ensure mission accomplishment, with the least
 3736 negative impact on the environment, and which attempt to provide positive environmental
 3737 stewardship, have both short- and long-term indirect impacts on the environment. Army
 3738 administrative policies and procedures, such as Army Regulation 200-1: *Environmental Quality,*
 3739 *Environmental Protection and Enhancement*, have a beneficial effect on soil conservation,
 3740 surface water, vegetation, and wetlands by limiting training at locations which are highly
 3741 susceptible to damage. The ongoing administrative activities have a long-term beneficial impact
 3742 on either the preservation or proper utilization of all attributes. Other administrative policies that
 3743 provide long-term beneficial effects include:

- 3744 • Limiting training (FJ, 2006) and aircraft noise (FJ, 1991), thereby reducing the noise
3745 impacts on the surrounding environment;
- 3746 • Establishing guidelines for exterior building appearance (Laubmann, 1991), thereby
3747 improving the appearance of the Installation;
- 3748 • Controlling development (Atkins, 2012a); thereby ensuring protection of groundwater,
3749 surface water, floodplains and wetlands; archaeological sites, historic buildings and
3750 sites, and cemeteries (DA, 1984 and FJ-DLE-PSES), and on- and off-Post land uses;
- 3751 • Establishing wildlife management policies (FJ-DLE-PSES, 1997a , FJ-DLE-PSES,
3752 1997c, FJ-DLE-PSES, 1998a , FJ-DLE-PSES, 1998c, FJ-DLE-PSW, 1997 and FJ-DLE-
3753 PSW, 1998) which protect and enhance native fish, wildlife, vegetation, and T & E
3754 species;
- 3755 • Establishing policies and procedures for the proper management, control, and disposal
3756 of hazardous chemicals, pesticides, herbicides (FJ-DLE-ES, 2005), POL (ES&E, 1998),
3757 munitions, radioactive materials, and wastes (FJ-DLE-PSES 1997b), PCBs (TRADOC,
3758 1989a), and asbestos and ACM (FJ, 2009b);
- 3759 • Establishing energy conservation (FJ, 1996) controls and standards; thereby reducing
3760 environmental impacts and energy consumption;
- 3761 • Establishing morale, recreation and welfare programs designed to improve living
3762 conditions for personnel residing both on- and off-Post;
- 3763 • Enforcing Federal and Army fair housing regulations, and developing local housing
3764 assignment and management policies to improve living conditions for personnel both on-
3765 and off-Post;
- 3766 • Preparing and monitoring of workplace safety and safety training policies, directives and
3767 classes;
- 3768 • Validating training accomplishments, and certifying personnel and units ready for
3769 deployment; and
- 3770 • Monitoring, reporting, and developing policies to ensure attainment of environmental and
3771 other regulatory compliance requirements.

3773 Table 6-6 Ongoing Mission Activities – No Action Alternative

Ongoing Mission Activities	Land Use		Aesthetics & Vis. Res.	Phys. Res.			Water Resources				Biological Res.			Air Quality		Hist. & Cult. Res.			Socioec. Resources			Infrastru. c.	Environmental Restoration and Compliance										Operations						
	Fort Jackson	Surrounding		Climate	Physio., Geo., & Top.	Soils	Noise	Surface Water	Groundwater	Stormwater	Floodplains	Fish & Wildlife	Vegetation	Wetlands	T&E Species	Regional	Fort Jackson	Archaeological	Hist. Buildi. & Struct.	Cemeteries	Regional Economy		Housing	Environmental Justice	Protection of Children	Utilities	Transport. Systems	Hazard. Waste	PCBs	POLs	Asbestos	Lead-Based Paint	Pest Management	Munitions	Radioactive Waste	Efficiency/Safety	Ability to Meet	Reg. Compliance	
Administration	+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	L	+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	
Airspace Management	L	L	o	o	o	L	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	
Facilities Maintenance & Fuel & Petrol. Products Stor. & Grounds Maintenance	o	o	L	o	o	S	o	o	o	o	o	o	o	o	o	S	o	+L	o	+L	+L	o	o	+L	+L	S	o	o	+L	+L	o	o	o	o	+L	+L	o	o	
Hospital Operations	o	o	o	o	o	S	o	o	o	o	o	o	o	o	o	S	o	o	o	+L	o	o	o	o	o	L	o	o	o	o	o	o	o	L	+L	o	o	o	
Installation Support Services	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	+L	+L	+L	o	o	o	o	o	o	o	o	o	o	o	o	o	o	+L	+L	o	o	
Minor Construction & Alteration	o	o	o	o	S	S	S	S	S	S	S	S	S	S	o	S	o	o	o	+S	o	o	o	o	+L	S	S	o	+L	+L	o	o	o	o	+L	+L	o	o	
Natural and Cultural Resources Mgmt	o	o	+L	o	+L	+L	o	+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	+L	o
Recreation	o	o	+L	o	o	o	o	o	o	o	+L	+L	o	o	o	o	o	o	o	+L	o	o	o	o	o	L	o	L	o	o	o	o	o	o	o	o	o	o	
Road and Right-of-Way Maintenance	o	o	L	o	o	L	o	L	o	L	L	L	L	o	o	o	o	o	o	+L	o	o	o	+L	+L	o	o	o	o	o	o	L	o	o	o	+L	o	o	
Training	o	o	o	o	o	S	S	S	o	o	o	S	S	o	o	S	o	o	o	o	o	o	o	o	S	o	o	o	o	o	o	o	o	o	o	+L	+L	o	o
Utility Systems	o	o	o	o	o	o	S	L	L	S	S	L	o	o	o	o	o	o	o	o	o	o	o	+L	o	o	+L	o	o	o	o	o	o	o	o	+L	+L	+L	o
Warehousing and Supply Storage	L	L	L	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	+L	L	o	o	o	+L	L	o	L	o	o	L	L	L	L	+L	+L	+L	o	
Vehicle & Equipment Maint. & Repair	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	S	o	o	o	o	o	o	o	o	+L	L	o	L	L	o	o	o	o	o	+L	+L	+L	o	

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6.5.2. Airspace Management

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Airspace management includes all actions required to allow the safe, continued use of helipads and helicopter landing zones and other military aircraft movements. These actions include rotary wing takeoffs, landings and over flights; rotary wing airborne training; range target designation; rotary-wing deployment of incendiary material in conjunction with controlled, prescribed burning of forest lands; and periodic overflights of restricted airspace by fixed-wing aircraft.

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6.5.2.1. Full Implementation Alternative

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Fort Jackson does not have or operate a fixed-wing runway and has no assigned aircraft. Implementation of the 2012 RPMP would result in no significant changes to the periodic use of designated helipads or landing zones, or the periodic transit of the Installation's controlled airspace by aircraft.

3787

6.5.2.2. No Action Alternative

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Direct Impacts

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Ongoing activities under the No Action Alternative would generate some adverse noise impacts on the properties surrounding the activities. The capability to utilize this mode of transportation is beneficial to efficiency of operations and the ability to meet the mission.

3792

Indirect Impacts

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Ongoing airspace management activities would indirectly limit the surrounding land uses near the helipads; however, this is in conformance with the land use plan.

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6.5.3. Facilities Maintenance and Repair

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Facilities and real property maintenance actions include those day-to-day actions required to ensure that existing facilities, machinery, and equipment are able to safely and effectively operate throughout their intended design life, and that historical resources are properly maintained. Facilities and real property maintenance actions, such as the repair of wooden, masonry and steel structures (including their structural and utility support systems), and interior and exterior finishes, involve the use of hazardous materials and the generation of hazardous waste.

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6.5.3.1. Full Implementation Alternative

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Implementation of the 2012 RPMP would involve the continuation of current maintenance and repair efforts, in addition to the construction of new facilities to replace deteriorated, maintenance intensive temporary and semi-permanent facilities.

3807 Direct Impacts

3808 Replacing deteriorated, maintenance-intensive temporary and semi-permanent facilities
3809 with new permanent facilities would result in an immediate reduction in the maintenance
3810 backlog, allowing additional effort to be placed on the remaining facilities. With fewer
3811 maintenance intensive structures to maintain, the level of maintenance provided to other
3812 facilities would increase resulting in more efficient and more visually attractive facilities.

3813 Indirect Impacts

3814 Better maintained facilities would continue to result in lower energy consumption and
3815 waste, further improving the efficiency of current operations. In addition, maintenance
3816 personnel would be better able to correct minor safety concerns, resulting in an
3817 improved level of safety for all personnel.

3818 6.5.3.2. No Action Alternative**3819 Direct Impacts**

3820 Routine building maintenance is a key element to developing and maintaining a
3821 professional exterior appearance throughout the Installation as specified in the IDG.
3822 Properly maintained facilities present a more professional and pleasing appearance, and
3823 have a beneficial effect on Installation aesthetics.

3824 Maintenance and repair efforts also include the elimination of asbestos and ACM in
3825 accordance with the Fort Jackson AHMP (FJ, 2009b). Although removal of the asbestos
3826 and ACM would be accomplished in accordance with Asbestos Hazardous Emergency
3827 Response Act (AHERA) requirements, there would be a short-term adverse impact on
3828 internal air quality at work spaces which would require monitoring and the possible use
3829 of protective equipment by the workers.

3830 Buildings and sites determined to be historical would be maintained in accordance with
3831 the policies and procedures contained in the ICRMP and Cultural Resources
3832 Programmatic Agreement. Ongoing maintenance and repair actions on historic facilities
3833 also would comply with the NHPA, EO 11593: Protection and Enhancement of the
3834 Cultural Environment, AR 200-4: Environmental Quality Cultural Resources
3835 Management, and TM 5-801-1 and TM 801-2.

3836 Indirect Impacts

3837 Activities, such as painting, soldering, and elimination of asbestos and ACM from
3838 facilities as part of the ongoing maintenance and repair effort would result in long-term
3839 hazardous waste disposal issues. Asbestos and ACM are disposed of in accordance
3840 with Toxic Substances Control Act, AR 420-47: Solid Waste Management, and South
3841 Carolina regulations regarding hazardous waste management, thereby minimizing the
3842 impact of asbestos disposal. Other hazardous wastes and PCB ballast are disposed of
3843 in accordance with applicable plans, policies, and regulations.

3844 Other indirect impacts associated with facilities maintenance and repair efforts include
3845 reduced energy consumption and waste; an improved quality of life for occupants;
3846 reduced safety concerns; and an improved ability to accomplish mission requirements.

3847 **6.5.4. Fuel and Petroleum Products Storage and Dispensing**

3848 Storage and dispensing of POL products takes place at the EXCHANGE service station
3849 and the central storage and issue area. Collection and interim storage of used
3850 petroleum products, prior to their disposal or recycling, is performed at the EXCHANGE
3851 Service Station (Building 4522), Auto Crafts Shop (Building 5666), 187th Ordnance
3852 Battalion Motor Pool (Building 2090), 2nd Regional Training Support Brigade (Building
3853 9405), DOL Consolidated Maintenance Complex (Building 2601), the US Army Reserve
3854 Equipment Concentration Site (Building 1701), Heavy Wheeled Vehicle Mechanics
3855 School (Building 2450) and McWhorter (Boyden Arbor) Reserve Center.

3856 **6.5.4.1. Full Implementation Alternative**

3857 Implementation of the 2012 RPMP would include the construction of a CEP with backup
3858 fuel storage and removal of an underground fuel tank.

3859 **Direct Impacts**

3860 The expanded use of natural gas to heat facilities would reduce the amount of labor
3861 required for the receipt, storage, dispensing and use of POL based products for heating
3862 facilities, thereby improving the efficiency and safety of these operations.

3863 **Indirect Impacts**

3864 Removal of an underground fuel tank would help reduce the potential for environmental
3865 damage from an inadvertent release of POL products to soil, surface water, and
3866 groundwater that could have an adverse impact on wetlands, fish and wildlife, or
3867 vegetation.

3868 **6.5.4.2. No Action Alternative**

3869 **Direct Impacts**

3870 The receipt, storage, dispensing and use of fuel products such as diesel fuel, fuel oil,
3871 and unleaded gasoline involve a potential for explosion and fire. Properly designed and
3872 maintained storage facilities, and handling procedures are routinely used to reduce the
3873 potential for fires. Existing POL facilities at Fort Jackson have been designed to include
3874 explosion proof electrical outlets. In addition, existing facilities are located to provide an
3875 adequate fire break should an accident occur.

3876 Receipt, storage, dispensing and use of dry cleaning solvent, motor oil, hydraulic fluid,
3877 brake fluid, and engine coolant has a direct adverse impact on the quantity and types of
3878 hazardous waste which are used at the Installation. Current standard operating

3879 procedures specify the proper storage methods and locations for these items, as well as
3880 provide spill containment and cleanup procedures (ES&E, 1998).

3881 POL operations provide a beneficial impact on the utilities and transportation
3882 infrastructure by providing required fuels for vehicles and maintenance equipment.

3883 **Indirect Impacts**

3884 Operation of POL storage, dispensing, collection and interim storage facilities includes
3885 the potential for inadvertent release of POL items into the environment. If released into
3886 the environment, POL products would have an adverse impact on soils, ground water,
3887 surface water, wetlands, fish and wildlife, or vegetation, depending on the location of the
3888 release.

3889 In compliance with the South Carolina Underground Storage Tank regulations, Fort
3890 Jackson has registered the USTs with the SCDHEC; and instituted proactive procedures
3891 with respect to inventory notification/reporting of data; leak detection and tank testing;
3892 remedial action; tank closing procedures; new construction of replacement tanks; and
3893 leak detection monitoring systems for underground storage tanks.

3894 Should an inadvertent release of POL products into the environment occur, Fort Jackson
3895 has developed an ISCP. Adherence to the preventative measures and clean-up
3896 practices in the ISCP would ensure that ongoing POL actions are in compliance with
3897 National Oil and Hazardous Substance Pollution Contingency Plan, CERCLA, RCRA,
3898 and Title 40 CFR 280-281 (underground storage tanks) requirements.

3899 **6.5.5. Grounds Maintenance**

3900 Grounds maintenance actions at Fort Jackson include the receipt, storage, and
3901 application of chemical herbicides, fertilizers and pesticides; disposal of empty herbicide,
3902 fertilizer and pesticide shipping containers; trimming of trees, shrubs and plant growth
3903 along power lines, utility easements, firebreaks, and road right-of-ways; and disposal of
3904 the solid waste; lawn mowing and disposal of the clippings; removal of litter; and
3905 collection and disposal of fallen leaves, limbs, and branches.

3906 **6.5.5.1. Full Implementation Alternative**

3907 Implementation of the 2012 RPMP would result in the demolition of aging, inadequate
3908 facilities, and the replacement of these facilities with larger, more consolidated,
3909 permanent facilities. These newer facilities would allow the development of additional
3910 open space. Implementation of the 2012 RPMP would also result in the use of more
3911 appropriate vegetation in accordance with the IDG to minimize the use of pesticides and
3912 the overall reduction in watering.

3913 Direct Impacts

3914 The creation of additional green spaces and formally defined buffer areas would further
3915 improve the visual appearance of the Installation. The enhanced maintenance of the
3916 grounds and vegetation improves safety of operations and prevent wild fires. Short-term
3917 adverse impacts to noise levels would be apparent during grounds maintenance efforts
3918 involving power equipment.

3919 Indirect Impacts

3920 The creation of buffer areas and green space between incompatible land uses would
3921 result in beneficial impacts to the military community users. The coordination identified
3922 in the INRMP and the PMP would assist in eliminating potential impacts on wetlands and
3923 endangered species.

3924 6.5.5.2. No Action Alternative**3925 Direct Impacts**

3926 Maintaining vegetative cover on the soils directly reduces the potential for erosion.
3927 Grounds maintenance actions such as lawn mowing, disposal of the clippings, removal
3928 of litter, and collection and disposal of fallen leaves, limbs, and branches are key to the
3929 preservation of a visually attractive, professionally maintained environment. The
3930 beneficial aesthetic effect of these actions is evident throughout the Installation. These
3931 activities are directly beneficial to the cemeteries, housing, community facilities, and
3932 developed portions of the Post.

3933 The application of fertilizers and the trimming of trees, plants, and shrubs also have a
3934 beneficial effect on vegetation. Vegetation that is fertilized is able to grow stronger and
3935 is, therefore, more disease and drought resistant. Proper trimming of trees and shrubs
3936 also has a beneficial impact on the plants.

3937 Short-term adverse impacts to noise levels would be apparent during grounds
3938 maintenance efforts involving power equipment.

3939 Indirect Impacts

3940 Maintenance of trees, shrubs and plant growth along power lines and utility easements
3941 reduces the number of power outages caused by trees and tree limbs falling onto power
3942 lines and, therefore, has an indirect beneficial effect on the Installation's utility
3943 infrastructure. Likewise the maintenance of firebreaks results in an indirect improvement
3944 in safety by limiting the extent of damage that could result during a fire.

3945 The use of mowing and herbicides along road rights-of-way decreases the potential that
3946 vegetative growth would damage pavements. Reduced maintenance and repair costs,
3947 and reduced manpower requirements are therefore an indirect beneficial effect of
3948 grounds maintenance.

3949 Improper storage and application of chemical herbicides, fertilizers and pesticides would
3950 result in adverse impacts to groundwater, surface water, fish and wildlife, vegetation,
3951 wetlands, and threatened and endangered species, depending on the location of the
3952 incident. To reduce the potential for improper use of these items, Fort Jackson has
3953 developed a PMP (FJ-DLE-ES, 2005) which augments the requirements of the Federal
3954 Insecticide, Fungicide, and Rodenticide Act (1 USC 136 et seq) and AR 200- 5, Pest
3955 Management. Together these regulate the use and safety of pesticides, and require the
3956 licensed applicator to consider the risk of environmental harm in terms of the benefits
3957 that would result from treatment. These chemicals are stored in accordance with the
3958 requirements of the ISCP. In the event of an inadvertent release into the environment
3959 the Installation would follow the requirements of the ISCP and CERCLA to determine
3960 proper reporting requirements and the extent of required remediation.

3961 In addition to the considerations required for the use of herbicides and fertilizers, the
3962 applicator must consider the potential impact the use of pesticides may have on the food
3963 chain of the RCW. Potential adverse impacts to the food chain of this T & E species,
3964 and the food chains of the other T & E species present in the region, must be considered
3965 as required by the ESA.

3966 Additional indirect beneficial impacts are realized through the separation of yard litter
3967 from household garbage and other solid waste. This reduces the volume of solid waste
3968 disposed. The yard litter is also recycled and used as mulch on the Installation.

3969 **6.5.6. Hospital Operations**

3970 Hospital activities include the provision of in-patient and out-patient medical and dental
3971 care.

3972 **6.5.6.1. Full Implementation Alternative**

3973 Implementation of the 2012 RPMP would result in no significant changes in ongoing
3974 hospital operations, or their associated direct and indirect impacts.

3975 **6.5.6.2. No Action Alternative**

3976 **Direct Impacts**

3977 The provision of medical care results in the generation of infectious, radioactive, and
3978 hazardous medical wastes. Temporary storage and disposal of these hazardous wastes
3979 is accomplished in accordance with federal, state and Army regulations.

3980 **Indirect Impacts**

3981 Infectious wastes are disposed of in a pathological Incinerator located at the veterinary
3982 clinic. The incinerator emits minor levels of particulate matter. The incinerator is
3983 operated in full compliance with SCDHEC Operating Permit No. 1900-0016.

3984 The provision of medical and dental care through an on-Post community facility has a
3985 beneficial effect on the quality of life for personnel and improves the level of safety
3986 provided to other operations.

3987 Rotary-winged aircraft (helicopter) operations, in support of medical emergencies, at the
3988 helipad result in short-term increases in area noise levels. These increases are very
3989 minor and when averaged across a typical week are not sufficient to generate a level II
3990 noise zone. Level II noise zones include those areas where the sound level is between
3991 65 and 75 dBA DNL. Level I noise zones, similar to the area near the helipad, include
3992 those areas where the DNL is less than 65 dBA. These areas are considered to have
3993 moderate to minimal noise exposure.

3994 Operation of a nuclear medicine department, including medical procedures and
3995 equipment maintenance, results in the use of X-ray equipment, the storage of
3996 radioactive material, and the generation of radioactive medical wastes. The storage of
3997 radioactive materials and the disposal of radioactive wastes are handled in accordance
3998 with federal, state, Army and industry standards.

3999 **6.5.7. Installation Support Services**

4000 Installation support services include both commercial and community services which
4001 support personnel who work or live on-Post. These services include housing, dependent
4002 elementary and continuing educational programs, technical and community libraries,
4003 child care and development centers, teen activities centers, community centers, service
4004 clubs, labor unions, service organizations, social services, commercial services such as
4005 those available through the Exchange and Commissary, and Installation services such
4006 as police and fire protection.

4007 **6.5.7.1. Full Implementation Alternative**

4008 The construction of an additional dog kennel administration building would be
4009 accomplished as part of the full implementation of the 2012 RPMP.

4010 **Direct Impacts**

4011 The construction of a new Installation support facility would result in an improved quality
4012 of life for personnel that own a pet and reside in on-Post housing or are part of the
4013 general Installation population.

4014 **Indirect Impacts**

4015 The construction of an additional administration building for the dog kennel would
4016 increase the level of support and efficiency available to personnel at the Installation. This
4017 facility is compatible with the Preferred Land Use Plan and would provide long-term
4018 benefits to the Installation.

4019 **6.5.7.2. No Action Alternative**

4020 **Direct Impacts**

4021 The operation of family and unaccompanied housing has a beneficial effect on mission
4022 accomplishment and the quality of life for residents. Personnel that are not worried
4023 about housing, and the welfare of their dependents, are better able to dedicate their time
4024 and effort to mission requirements.

4025 Providing Installation services, such as police and fire protection, has a beneficial impact
4026 on the Installation population and the level of safety present on the Installation. Knowing
4027 that these services would be performed in a professional manner has a beneficial effect
4028 on residents.

4029 Continued protection and maintenance of the active and inactive cemeteries on-Post has
4030 a beneficial impact on these resources.

4031 **Indirect Impacts**

4032 The operation of commercial services such as the Exchange, Commissary, shoppettes,
4033 cafeterias, banks and credit unions has a beneficial effect on the local economy and on
4034 other on-Post activities. Items purchased in the local economy are resold in the
4035 Exchange and Commissary systems, resulting in additional cash flow in the regional
4036 economy. In addition, a percentage of the income generated by on-Post commercial
4037 services is used to support non-appropriated activities that help improve the quality of
4038 life for residents.

4039

4040 **6.5.8. Minor Construction and Alteration**

4041 Construction and alteration of buildings, structures, site improvements, and utility
4042 systems is required to ensure that assets are capable of meeting the facilities
4043 requirements of changing educational initiatives and programs, administrative
4044 philosophies and organizations, weapons systems, and mission requirements. Potential
4045 projects are identified by Fort Jackson employees; submitted to the DPW for analysis,
4046 planning and estimating; and then reviewed, prioritized and authorized by the Fort
4047 Jackson IPB.

4048 **6.5.8.1. Full Implementation Alternative**

4049 Minor construction and alteration projects would be completed during on-going activities
4050 as part of the full implementation of the 2012 RPMP.

4051 **Direct Impacts**

4052 The improvement and renovation of existing Installation support facilities would result in
4053 an improved quality of life for personnel that utilize the facilities or reside in on-Post
4054 housing. These improvements provide a safer facility which is a long-term beneficial
4055 impact.

4056 Indirect Impacts

4057 The construction and alteration projects are compatible with the land use plan and would
4058 provide long-term benefits to the Installation.

4059 6.5.8.2. No Action Alternative**4060 Direct Impacts**

4061 Construction and alteration efforts, depending on their size, would result in short-term
4062 adverse disturbances to physical, water, and biological resources. Measures to limit the
4063 level of short-term impacts that may be created by the construction activities are
4064 required by the general paragraphs of the contracts between the government and the
4065 construction firms for projects performed by contractors, and by standard operating
4066 procedures for projects completed by governmental personnel. Upon completion of
4067 construction and alteration efforts disturbed areas would be replanted.

4068 Indirect Impacts

4069 Construction and alteration areas with disturbed ground cover are more susceptible to
4070 soil erosion, and therefore increase the potential for sediment contamination of surface
4071 waters and wetlands. The Federal Water Pollution Control Act and the CWA require the
4072 implementation of BMPs to prevent inadvertent runoff of sediment as part of the overall
4073 construction effort.

4074 The construction and renovation projects have short-term beneficial impacts on the
4075 economy. These projects allow for reuse of existing facilities which benefits efficiency.
4076 Renovations can improve efficiency and safety of operations while furthering the ability
4077 to meet the mission.

4078 6.5.9. Natural and Cultural Resources Management

4079 Natural resources management policies and actions at Fort Jackson include the
4080 harvesting of forest resources; the establishment and maintenance of water bodies; the
4081 rehabilitation and management of bivouac areas; the provision of artificial nest
4082 structures; the establishment and maintenance of game food plots; the promotion of
4083 native plants and grasses; improving water quality by maintaining vegetative cover and
4084 minimizing soil losses from training areas; management plans for threatened and
4085 endangered plant and animal species; continuation of a forestry management program;
4086 identification and mapping of known, suspected or potential wetland areas; and the
4087 reintroduction of unique species and natural habitat improvements designed to
4088 encourage population growth. These actions have been implemented, as part of the
4089 INRMP (FJ-DLE-PSES, 1997a) to enhance the existing fish, wildlife and plant habitats
4090 present on the Installation (see Section 6.5). These actions are required by AR 200-3,
4091 *Natural Resources Land, Forest and Wildlife Management* (DA, 1995).

4092 6.5.9.1. Full Implementation Alternative

4093 Proactive natural and cultural resources management policies and actions at Fort
4094 Jackson are in place and would continue. Implementation of the 2012 RPMP would
4095 result in no significant changes in ongoing natural and cultural resources management
4096 operations, or their associated direct and indirect impacts.

4097 6.5.9.2. No Action Alternative**4098 Direct Impacts**

4099 The Forest Management Plan, which is a five year plan prepared as part of the INRMP
4100 designed to maintain and perpetuate a healthy, sustainable forest. Management
4101 activities, such as timber harvesting, reforestation, prescribed burning and related
4102 activities, are directed primarily toward the production of longleaf pine timber and pine
4103 straw on longleaf sites. The management of pine stands is directly related to the
4104 management of wildlife species, principally the endangered RCW. The forestry
4105 management program has beneficial effects on fish and wildlife, and vegetation present
4106 within and near the stands.

4107 Management efforts to establish and maintain game food plots, promote the growth of
4108 native species and grasses, reintroduce unique species, and improve natural habitats
4109 have direct beneficial effects on both the quality and diversity of vegetation on the
4110 Installation. These efforts are based on the Cooperative Plan Agreement for
4111 Conservation and Development of Fish and Wildlife Resources of the Fort Jackson
4112 Military Reservation (FJ-DLE-PSES, 1998a) and the INRMP and have proven effective
4113 in providing improved ecosystems.

4114 Management of the archaeological sites, historic buildings and sites, and cemeteries to
4115 ensure that these items are protected from inadvertent damage, has a beneficial effect
4116 on these cultural resources. The ICRMP (SCIAA, 2008) delineates the extent of actions
4117 that are required to ensure compliance with Public Law 93- 291, AHPA (PL93-291,
4118 1974).

4119 Indirect Impacts

4120 Efforts to rehabilitate bivouac areas, promote the growth of native species and grasses,
4121 and to improve water quality by maintaining vegetative cover and minimizing soil losses
4122 from training areas, have an indirect beneficial effect on the visual appearance and
4123 aesthetics of the Installation, and reduce the amount of sediment in stormwater runoff,
4124 thereby resulting in improved surface water clarity.

4125 Management efforts which improve surface water quality, and are therefore considered
4126 beneficial, include maintaining vegetative cover and minimizing soil losses from training
4127 areas, providing adequate access to fishing areas in order to reduce loss of vegetative
4128 cover near fishing areas, the establishment and maintenance of water bodies which

4129 function as recreational fisheries, and the establishment and maintenance of wildlife
4130 water units and sedimentation basins.

4131 The ESMP for the RCW (FJ-DLE-PSW, 1998) and the ESMP for Smooth Coneflower
4132 and Rough-leaved Loosestrife (FJ-DLE-PSW, 1997) seek to conserve these endangered
4133 animal and plant species, while providing for training readiness and other mission
4134 requirements of Fort Jackson. These management plans provide information on each
4135 species; identify habitats and limiting factors; define conservation goals; outline plans for
4136 management of these animal and plant species and their habitat that would enable
4137 achievement of conservation goals; establish monitoring plans; and summarize the cost
4138 of conservation efforts and their impact on Installation activities. The protection of these
4139 endangered species is required by the ESA.

4140 The Installation forestry management program, in addition to improving the quality of the
4141 forestry ecosystem, results in income for the Installation that may be used to offset the
4142 cost of other natural resource management programs.

4143 Management efforts to establish and maintain game food plots, and promote the growth
4144 of native species and grasses which have direct beneficial effects on both the quality
4145 and diversity of vegetation on the Installation also have indirect beneficial effects on
4146 wildlife by increasing their food supply. Efforts to provide artificial nest structures and to
4147 supply fish habitat structures in conjunction with pond construction and management of
4148 existing ponds also have beneficial effects on the Installation's fish and wildlife.

4149 The identification and mapping of known, suspected or potential wetland areas, including
4150 the species composition, hydrology and soil characteristics of each site is a significant
4151 step toward ensuring wetlands are protected from future development. Protection of
4152 wetlands would have a beneficial impact on wildlife population diversity.

4153 **6.5.10. Recreation**

4154 Ongoing recreational activities on Fort Jackson include baseball, softball, basketball,
4155 football, soccer, swimming, tennis, golf, bowling, racquetball, volleyball, weight lifting,
4156 camping, hiking, horseback riding, fishing, and hunting, and the use of service clubs,
4157 theaters, auto and craft centers. Specific special events such as the South Carolina
4158 Special Olympics are also held at Fort Jackson as part of the recreational and
4159 community service programs implemented by the Installation.

4160 **6.5.10.1. Full Implementation Alternative**

4161 Implementation of the 2012 RPMP would result in no significant changes to ongoing
4162 recreational activities on Fort Jackson, or their associated direct or indirect impacts. The
4163 Indoor and Outdoor Recreation Plans are developed to guide Fort Jackson in the
4164 development of indoor and outdoor recreational assets and activities over the next ten
4165 years.

4166 **6.5.10.2. No Action Alternative**

4167 **Direct Impacts**

4168 Sporting and recreational activities have a beneficial effect on the Installation population
4169 by improving their quality of life. Concession and equipment sales coupled with
4170 entrance and user fees have a beneficial effect on community and commercial services
4171 by augmenting non-appropriated fund activities.

4172 **Indirect Impacts**

4173 The maintenance and operation of exterior general purpose athletic and playing fields for
4174 baseball, softball, football, and soccer, and the golf course and driving range involves
4175 the application of fertilizer, pesticide, and herbicide, and mowing and watering as part of
4176 the ground maintenance effort. These activities, which result in an improved visual
4177 appearance for the area, also result in increased operation and maintenance costs and
4178 in an improved quality of life for personnel that use the facilities.

4179 Recreational hunting and fishing seasons have an indirect beneficial effect of assisting in
4180 the control of game populations at Fort Jackson, which in turn, has a beneficial impact
4181 on vegetation by limiting over grazing. FJ Morale, Welfare and Recreation Regulation
4182 28-4, *Hunting and Fishing Regulation* in conjunction with the INRMP (FJ-DLE-PSES,
4183 1997a) and the Cooperative Plan Agreement for Conservation and Development of Fish
4184 and Wildlife Resources of the Fort Jackson Military Reservation (FJ-DLE-PSES, 1998a),
4185 provide management guidance for implementation of recreational hunting and fishing.
4186 Fort Jackson hunting and fishing permit revenues are used to supplement the wildlife
4187 management program at the Installation. The sale of licenses and equipment also has
4188 an indirect beneficial effect on commercial and community services by providing
4189 additional income to the local economy.

4190 Many of the Installation's recreational fields are lighted to allow more extensive use by
4191 personnel that work or attend class during daylight hours. The extent of lighting is
4192 limited and consistent with the proper use of the utility infrastructure. If improperly used,
4193 the lighted fields could conflict with housing land uses where personnel and dependents
4194 are trying to sleep.

4195 The open characteristics of many outdoor recreational facilities have a beneficial effect
4196 on most other land uses. However, several unique recreational facilities (such as the
4197 rod and gun club or an auto crafts shop) may present safety, noise, and environmental
4198 considerations which dictate that they be located in more isolated locations. These
4199 unique recreational facilities must be considered and reviewed on a case-by-case basis,
4200 but in general recreational facilities have an indirect beneficial impact on surrounding
4201 land uses.

4202 The operation of an auto craft shop, with oil collection and recycling stations, increases
4203 the quantity of POL storage, dispensing, collection and interim storage facilities on the

4204 Installation. As previously discussed, these facilities have the potential for inadvertent
4205 release of oil and hazardous waste into the environment. If released into the
4206 environment, and not contained, POL products would have an adverse impact on soils,
4207 ground water, surface water, wetlands, fish and wildlife, and vegetation. Youth activities
4208 and special events have an indirect beneficial effect on the population. The good will and
4209 positive image instilled in the participants and volunteers is typical of the positive impacts
4210 generated by these events.

4211 **6.5.11. Road and Right-of-Way Maintenance**

4212 Maintenance of roads and rights-of-way (ROW) is necessary to ensure that existing
4213 horizontal construction (roads, parking areas, etc.) and utility systems are able to safely
4214 and effectively operate throughout their intended design life. Road and ROW
4215 maintenance actions at Fort Jackson include cleaning, sweeping, and painting of road
4216 and parking surfaces; construction and maintenance of erosion control and storm water
4217 collection systems; repair, maintenance and reconstruction of pavement surfaces
4218 including removal, scarifying, and recompaction of base, sub-base and surface
4219 pavements; and removal of snow and ice, and the application of deicing chemicals, salt,
4220 and cinders to improve driving and walking conditions during inclement weather.

4221 **6.5.11.1. Full Implementation Alternative**

4222 Two new parking lots (one for the 193rd Brigade and one for the BCT 4 Barracks
4223 Complex) will be completed as part of full implementation of the 2012 RPMP. The Full
4224 Implementation Alternative would also consist of improvements to Golden Arrow Road to
4225 include realignment and repaving of the existing roadway and the addition of another
4226 lane.

4227 **Direct Impacts**

4228 The addition of new parking facilities and an expanded roadway would result in an
4229 increase in the impervious surface area requiring maintenance by ongoing road and
4230 ROW maintenance activities. Insufficient maintenance of these structures would result
4231 in increased stormwater runoff and soil erosion and resulting adverse impacts to surface
4232 waters and surrounding flora and fauna.

4233 During construction of the projects, POL products would be used which, if inadvertently
4234 released into the environment, would result in adverse impacts to surface water, fish and
4235 wildlife, vegetation, and wetlands. Fort Jackson's ISCP (ES&E, 1998) would be followed
4236 if POL products are inadvertently released into the environment.

4237 The improvement and renovation of Installation roadways and parking facilities would
4238 result in an improved quality of life for personnel that utilize the facilities or reside in on-
4239 Post housing. These improvements provide increased transportation efficiencies, which
4240 is a long-term beneficial impact.

4241 Indirect Impacts

4242 The construction and renovation projects are compatible with the Preferred Land Use
4243 Plan and would provide long-term benefits to the Installation. Realignment and repairs
4244 made to Golden Arrow Road would have a beneficial indirect effect on motor vehicle
4245 operation safety. The improvements to and maintenance of roads and parking areas
4246 also reduces long-term repair and replacement costs.

4247 6.5.11.2. No Action Alternative**4248 Direct Impacts**

4249 The maintenance, cleaning, sweeping, and painting of road and parking surfaces and
4250 the cleaning, repair and maintenance of erosion control and stormwater collection
4251 systems have a beneficial effect on the visual appearance of the Installation.

4252 The repair, maintenance and reconstruction of pavement surfaces involves the use of
4253 POL products which, if inadvertently released into the environment, would result in
4254 adverse impacts to surface water, fish and wildlife, vegetation, and wetlands. Should an
4255 inadvertent release of POL products into the environment occur, Fort Jackson has
4256 developed an ISCP (ES&E, 1998) which would help ensure compliance with National Oil
4257 and Hazardous Substance Pollution Contingency Plan, CERCLA, and RCRA.

4258 Indirect Impacts

4259 Clean and freshly painted road and parking lot traffic lines, and pavement markers result
4260 in less confusion for drivers and, therefore, have an indirect effect on improving the
4261 safety of motor vehicle operations. The maintenance of roads and parking areas also
4262 lowers long-term repair and replacement costs.

4263 The presence of paved roads and parking areas decreases ground permeability,
4264 resulting in increased surface runoff. The operation and parking of vehicles on these
4265 surfaces result in small amounts of oil in this surface runoff. If concentrated, this surface
4266 runoff (with small amounts of oil) would have minor adverse impacts on surface water
4267 quality, fish and wildlife, vegetation, and wetlands. In areas with highly erodible soils,
4268 the presence of concentrated surface runoff increases the probability of soil erosion and
4269 potential silt accumulation resulting in adverse impacts on surface water, fish and
4270 wildlife, and wetlands.

4271 Improper storage or application of chemicals and salt used for deicing would result in
4272 adverse impacts to surface water, fish and wildlife, vegetation, wetlands, and T & E
4273 species, depending on the location of the action. To reduce the potential for improper
4274 use of these items or improper cleanup of the chemicals should a spill occur, Fort
4275 Jackson has developed a SWP3 and an ISCP (ES&E, 1998). Deicing chemicals are
4276 also stored in accordance with the requirements of the SWP3. In the event of
4277 inadvertent release into the environment, the Installation would follow the proper clean-
4278 up requirements as specified in the ISCP.

4279 The maintenance of erosion control and stormwater collection systems involves the use
4280 of herbicides, and the trimming and cutting of trees and vegetation that grow in these
4281 open systems. Maintenance efforts result in adverse impacts for the limited amount of
4282 vegetation growing in these systems, but limit the potential for damage to other areas by
4283 reducing the potential for increased surface water build-up during storms. If the erosion
4284 control and stormwater collection systems are not maintained, the rate of surface water
4285 removal is reduced, increasing the potential for flash flooding.

4286 **6.5.12. Training**

4287 Programs of instruction at the Training Center, Soldier Support Institute, and Chaplain
4288 Center and School include both individual and group training and, depending upon the
4289 material being covered, instruction may be provided in a classroom; in an interior applied
4290 instruction area or laboratory; or at a firing range, bivouac site, or training area. Field
4291 training is conducted on a majority of the Installation including the ranges and impact
4292 area.

4293 **6.5.12.1. Full Implementation Alternative**

4294 Construction of facilities and classrooms for the BCT and AIT Complexes and the
4295 Training Aids Support Center would be accomplished as part of the full implementation
4296 of the 2012 RPMP. Training activities associated with the on-going mission would have
4297 the same short-term impacts on environmental attributes that are discussed under the
4298 No Action Alternative.

4299 **Direct Impacts**

4300 Provision of these facilities would provide properly equipped designated facilities for the
4301 training organizations to carry out their missions. These facilities would provide long-
4302 term benefits in the operational areas of efficiency and ability to meet the mission.

4303 **Indirect Impacts**

4304 The completion of the projects would prevent the organizations from being forced into
4305 existing facilities which would degrade staff morale.

4306 **6.5.12.2. No Action Alternative**

4307 **Direct Impacts**

4308 The operation of designated training areas and organizations at the Post provides the
4309 benefit of training efficiency and enhancement of the ability to meet the mission. These
4310 training areas are located with relation to the training to be provided and compatibility
4311 with surrounding land uses. Field training has the most potential for environmental
4312 concerns. Potential site specific, direct, adverse impacts on the environmental attributes
4313 would include the following for training activities:

- 4314 • *Soils*- short-term erosion from vegetation disturbance by vehicles or activities;

- 4315 • *Air Quality* – short-term generation of particulates and pollutants from dust,
4316 vehicle exhaust and, use of smoke, munitions and ordnance;
- 4317 • *Noise* – short-term noise from use of vehicles, munitions and ordinance;
- 4318 • *Surface water* – short-term runoff of sediment and residues from training
4319 activities;
- 4320 • *Fish and wildlife* – short-term disturbance in training areas; and
- 4321 • *Vegetation* – short-term disturbance or alteration during training activities.

4322
4323 Field training is conducted with precautions to prevent impacts on the environment. Unit
4324 Commanders, down to and including company/battery/detachment level are responsible
4325 for appointing (in writing) a unit ECO to ensure that all units comply with all
4326 environmental regulations. Unit ECO's must submit a completed REC to ENV, for any
4327 proposed activities that may result in environmental impacts, such as construction of
4328 new bivouac sites, fighting positions, tank ditches, building construction and
4329 maintenance, and tree cutting operations. The DPTM must sign the REC form for all
4330 proposed actions or projects. Completed REC's must be signed off by DPTM and then
4331 received by the ENV at a minimum of 30 days prior to the proposed start of the activity
4332 so that ENV can conduct an environmental review.

4333
4334 Upon completion of training, Commanders, Officer in Charge (OIC) / Range Safety
4335 Officer (RSO) will conduct a thorough police of the range, Field Training Exercise (FTX)
4336 site, bivouac site, or training areas to ensure that no trash, ammunition boxes, or other
4337 debris have been left in the area. All areas occupied during training will be thoroughly
4338 policed; all units planning for occupation of any training area will conduct a leader's
4339 recon prior to occupation. Leader's recon will be coordinated through Range Control not
4340 less than 24 hours in advance or scheduled through Range Facility Management
4341 Support System (RFMSS) if utilized. Prior to departure from a range or a training area,
4342 the OIC will contact Range Control and request a clearance inspection, unless instructed
4343 differently by Range Control. If the unit occupying the range or training site has not
4344 properly signed for that site from a Range Control range inspector, the OIC will sign for
4345 the range or training site "as is". If it is impossible for the inspection to be conducted prior
4346 to unit(s) departure, or if inspection conducted is unsatisfactory, the Commander/OIC will
4347 designate a responsible individual (preferably an individual who participated in the field
4348 training) to accompany Range Control personnel on a subsequent inspection within 24
4349 hours. Failure to police or clear within 72 hours after use, will result in an unsatisfactory
4350 report, and will be forwarded to the DPTM and representative user Brigade S3.
4351 Additional guidance and precautions are provided in FJ Regulation 350-14 (September
4352 14, 2006).

4353

4354 Examples of training activities and associated restrictions taken for current training within
4355 RCW cluster buffer zones include:

- 4356 • Hasty defense, light infantry, hand digging only two hours max.
- 4357 • Foot transit thru the cluster.
- 4358 • Wheeled and armoured vehicle transit thru the cluster (1).
- 4359 • Cutting natural camouflage, hard wood only (no pine trees).
- 4360 • Establishment of camouflaged netting not prohibited within 200 feet of a marked
4361 cavity tree.

4362 **Indirect Impacts**

4363 The use of Installation and regional roadways to train personnel in proper convoy
4364 techniques results in a minor increase in road usage and minor amounts of short-term
4365 congestion. Some Installation roadways may be temporarily closed during training
4366 activities.

4367 **6.5.13. Utility Systems**

4368 Utility systems at Fort Jackson include electrical, water, and gas (natural gas, liquefied
4369 petroleum gas, and fuel oil) distribution systems; CEPs; stormwater and sanitary sewer
4370 collection systems; solid waste disposal; QRP; telephone, cable television and radio
4371 communications systems. These systems must be operated, maintained and improved
4372 where necessary to support continued training, operating and community support
4373 requirements.

4374 **6.5.13.1. Full Implementation Alternative**

4375 Implementation of the 2012 RPMP would result in no significant changes in the utility
4376 system operations, or their associated direct and indirect impacts. The construction of a
4377 CEP associated with the BCT 4 Barracks Complex would be accomplished as part of the
4378 full implementation of the 2012 RPMP. Initially the CEP would be dedicated to the first
4379 phase of the BCT Complex. Over the long-term, it would be incorporated into the Post
4380 utility system as are the other CEPs. Additional utility projects, which include primarily
4381 R&R projects would be completed to upgrade utility service in compliance with the 50-
4382 year privatization agreement with PSUS as identified in the *Fort Jackson Annual Capital
4383 Upgrades and Renewals & Replacements Plan for Water and Wastewater Services
4384 (2012-2016)* provided in Appendix C.

4385 6.5.13.2. No Action Alternative**4386 Direct Impacts**

4387 The continued maintenance and operation of utility systems has a beneficial impact on
4388 the existing utilities infrastructure, the ability of the Installation to meet mission
4389 requirements, and the ability of the Installation to ensure regulatory compliance.

4390 Continued operation of the electrical, water, and natural gas distribution systems, storm
4391 and sanitary sewage collection systems, and telephone, cable television and radio
4392 communications systems involves the use of machinery which would result in short-term
4393 increases in local noise levels. The isolation of these facilities from other incompatible
4394 land uses would reduce the level of noise impact experienced in the local community.

4395 The maintenance of conveyance lines associated with utility systems causes a long-term
4396 loss of habitat for biological resources. Stormwater discharges can adversely impact
4397 surface water quality and flood flows. Water quality and retention basins are used to
4398 mitigate these potential impacts.

4399 Fort Jackson requires contractors to inspect all transformers for PCB contamination prior
4400 to sale to the Installation. When PCB transformers are removed from service, their
4401 storage and disposal is accomplished by the DRMO, which has a designated and
4402 approved storage shed for these items. Elimination of these items would have a
4403 beneficial effect on the Installation by greatly reducing the potential for inadvertent PCB
4404 spills.

4405 The Weston Lake Wastewater Treatment Plant is operated in accordance with
4406 wastewater standard operating procedures including the Water Pollution Control
4407 Monitoring Requirements (FJ-DLE-PSES, 1998b), which establishes the procedures and
4408 responsibilities for operations associated with wastewater treatment and discharges.

4409 The City of Columbia supplies potable water to Fort Jackson. Operation of the water
4410 collection and treatment system involves direct impacts on the groundwater and surface
4411 water resources as water is drawn from both of these sources for use on the Installation.
4412 The collection of water is limited by pumping capacity and usage requirements, and is
4413 not resulting in an adverse reduction in water quality or quantity to either source.
4414 Operation, maintenance and repair of the water collection, treatment and distribution
4415 system is accomplished in accordance with existing water quality standards and
4416 regulations. The drinking water provided meets the requirements of the National Drinking
4417 Water Regulations.

4418 Indirect Impacts

4419 The continued maintenance and operation of utility systems has an indirect beneficial
4420 impact on the ability of the Installation to meet mission requirements, the quality of life
4421 experienced by the Installation population, housing occupants and users of commercial

4422 and community facilities, and the ability of the Installation to ensure regulatory
4423 compliance.

4424 The transfer of electrical power over electrical distribution lines generates
4425 electromagnetic fields. These fields may have harmful impacts on residents and wildlife.
4426 The full extent of the harmful impacts is still being evaluated by numerous researchers
4427 and has not been quantified. These electromagnetic fields interfere with some radio
4428 transmissions. Proper location of radio transmission and receiving equipment, in order
4429 to eliminate electromagnetic interference, is required.

4430 The proper maintenance of utility systems helps to reduce the amount of energy lost in
4431 production and transmission, thereby helping to ensure that the Installation is in
4432 compliance with the Fort Jackson Regulation 420-7, Energy Conservation Program (FJ,
4433 2005). The operation of CEPs involves the use of machinery that results in short-term
4434 isolated point noise sources which impact surrounding land uses.

4435 The recycling of aluminum, paper, cardboard, glass and plastic products results in a
4436 limited amount of non-appropriated fund income which is partly used to offset the
4437 administrative and operational costs incurred by Fort Jackson for the operation of the
4438 recycling program.

4439 **6.5.14. Warehousing and Supply Storage**

4440 The DOL is responsible for the maintenance, operation and execution of central
4441 warehousing and supply storage functions at Fort Jackson, and in this role receives,
4442 stores, maintains in storage, issues, and ships all classes of supply.

4443 **6.5.14.1. Full Implementation Alternative**

4444 Warehousing and supply storage operations would continue with some additional
4445 facilities under the Full Implementation Alternative. The BCT 3 and 4 Barracks
4446 Complexes would be constructed as part of the full implementation of the 2012 RPMP to
4447 include storage and maintenance facilities. A new PSUS Maintenance Building would
4448 also be constructed adjacent to the existing PSUS yard.

4449 **Direct Impacts**

4450 The addition and consolidation of the supply facilities provides a direct long-term benefit
4451 to land use since some open storage areas would be eliminated and the consolidated
4452 facility would require less land.

4453 **Indirect Impacts**

4454 The addition and consolidation would also provide indirect long-term benefits to the
4455 visual/aesthetic settings at the Installation.

4456

4457 6.5.14.2. No Action Alternative**4458 Direct Impacts**

4459 The operation of a decentralized supply-storage function has an adverse long-term
4460 impact on the visual appearance of the Installation and adjacent land uses. The existing
4461 substandard warehouse facilities fail to meet the requirements of the IDG, and the
4462 exterior storage of items (which would not fit into the existing facilities) further diminishes
4463 the desired professional image.

4464 The purchase of materials in bulk and distribution, as needed, to the Post operations
4465 provides long-term benefits in the reduction of traffic for incoming deliveries. The
4466 purchase and contracting for goods and services in the local community has a beneficial
4467 effect on the regional economy. Having the materials and resources available when
4468 needed improves the operational efficiency and the ability to meet the mission.

4469 Indirect Impacts

4470 The storage and handling of hazardous materials and wastes, pesticides, and herbicides
4471 occurs as part of the DOL and DPW functions. As required by the ISCP (ES&E, 1998),
4472 the Hazardous Substance Management Plan (FJ, 2011), and the IPMP (FJ-DLE-PSES,
4473 1996), these items are stored in accordance with the applicable requirements. In the
4474 event of inadvertent release into the environment, the Installation would follow the
4475 requirements of the ISCP and CERCLA to determine proper reporting requirements and
4476 the extent of required remediation.

4477 The storage and handling of munitions, such as small arms ammunition and explosives,
4478 involves the potential for inadvertent discharge. Proper storage and handling
4479 procedures have been established by the Department of Defense Explosives Safety
4480 Board (DDESB) and include requirements for the type of structure which would be used,
4481 and the minimum distance that is required between munitions storage facilities and other
4482 on-Post and off-Post land uses. These requirements have an indirect long-term adverse
4483 effect on surrounding land uses, population, housing and safety. Fort Jackson's
4484 ammunition supply point is located in compliance with the DDESB requirements.

4485 Shipment of material in accordance with Military Traffic Management Command's
4486 (MTMC) freight traffic rules and directives has an indirect beneficial impact on the
4487 management and use of the transportation infrastructure.

4488 6.5.15. Vehicle and Equipment Maintenance and Repair

4489 Three echelons of maintenance are currently provided at Fort Jackson, including unit,
4490 direct support (DS) and general support (GS) maintenance. Individual operational units
4491 and directorate staffs are tasked with completing unit level maintenance on equipment
4492 that is assigned to them. DOL is tasked with providing DS and GS support, unit level
4493 maintenance when incidental to DS or GS maintenance, and unit level maintenance for
4494 units that do not have a unit level maintenance capability. Vehicles and equipment

4495 requiring maintenance and repair includes wheeled vehicles, construction equipment,
4496 material handling equipment, powered support equipment, and weapons.

4497 **6.5.15.1. Full Implementation Alternative**

4498 Implementation of the 2012 RPMP would result in no significant changes in ongoing
4499 vehicle and equipment maintenance and repair operations, or their associated direct and
4500 indirect impacts.

4501 **6.5.15.2. No Action Alternative**

4502 **Direct Impacts**

4503 Ongoing vehicle and equipment maintenance and repair actions such as replacing fluids,
4504 engine hoses and belts, tires, oil, air conditioning refrigerant, asbestos-containing
4505 brakes, and batteries result in the generation of hazardous and solid wastes. POL
4506 products and generated wastes require proper handling, and disposal or recycling.

4507 Body repair and restoration includes the use of spray paints and primers which if
4508 released into the environment would result in reduced air quality. Additionally, if these
4509 items are used in a space that does not have proper interior and personal ventilation,
4510 these paints and primers could injure the applicator. Proper ventilation of paint and
4511 primer application areas is required by the Occupational Safety and Health Act (OSHA),
4512 and appropriate protective facilities are operated and maintained at the Installation.

4513 **Indirect Impacts**

4514 Storage and disposal of vehicle and equipment fluids, tires, oil, air conditioning
4515 refrigerants, asbestos containing brake pads, and batteries and battery electrolyte acid
4516 occurs as part of this function. The ISCP (ES&E, 1998), and Hazardous Substance
4517 Management Plan (FJ, 2011) require that these items are stored in accordance with the
4518 applicable requirements. In the event of inadvertent release into the environment, the
4519 Installation would follow the requirements of CERCLA to determine proper reporting
4520 requirements and the extent of required remediation. In addition, proper storage of
4521 welding equipment and supplies, such as oxyacetylene, is required to reduce the
4522 potential for fire, explosion, or uncontrolled release of compressed gasses.

4523 The inspection of motor vehicles used to transport explosives and other dangerous
4524 articles before loading and unloading improves the level of safety afforded as a result of
4525 vehicle operations on-Post.

4526 **6.6. Cumulative Impacts**

4527 CEQ regulations and 32 CFR Part 989 stipulate that the cumulative effects analysis
4528 should consider the potential environmental impacts resulting from “incremental impacts
4529 of the action when added to other past, present, and reasonably foreseeable future
4530 actions regardless of what agency or person undertakes such other actions” (40 CFR

4531 1508.7). Thus, cumulative impacts are the sum of all direct and indirect impacts, both
 4532 adverse and positive, that result from the incremental impacts of implementation of
 4533 either alternative when added to other past, present, and reasonably foreseeable future
 4534 actions regardless of source. Cumulative impacts may be accrued over time and/or in
 4535 conjunction with impacts from other activities in the area (40 CFR 1508.25).

4536 **6.6.1. Regional Growth and Development**

4537 As previously noted in Section 5.2.2, *Land Use*, Fort Jackson is surrounded by the
 4538 unincorporated Richland County, the Cities of Columbia and Forest Acres to the west,
 4539 Kershaw County to the northeast and Sumter County to the east. The 2009 JLUS
 4540 provides an overview of the projected growth and development areas over the next
 4541 several years and highlights the following:

- 4542 • **Richland County** - Regional Population Projections 2005 – 2035 produced by
 4543 the Central Midlands Council of Governments (CMCOG) in 2007, project that
 4544 Richland County will grow from 320,677 residents in 2000 to 451,470 by 2035.
- 4545 • **Richland Northeast** - North of Fort Jackson in the Richland Northeast planning
 4546 sector will remain one of the fastest growing parts of the Central Midlands region,
 4547 due to its good schools, available land near I-20 and the planned extension of
 4548 sewer service by the City of Columbia and Richland County.
- 4549 • **Southeast Richland** - through 2035, the population between Fort Jackson/MTC
 4550 and McEntire JNGB should continue to grow rapidly as suburban development
 4551 spreads eastward. The area has fewer development constraints in the form of
 4552 wetlands and floodplains than other parts of south Richland County, making it
 4553 more susceptible to growth pressures. Rural road improvements proposed in
 4554 Lower Richland County will fuel this emerging growth trend. CMCOG projections
 4555 indicate a growth rate of 75 percent over the year 2000 as the sector adds 8,604
 4556 residents by 2035.
- 4557 • **Hopkins** - planning sector farther to the south and surrounding McEntire JNGB
 4558 has more limited development potential overall than Southeast Richland, a
 4559 function of land protection in the Congaree National Park. Nonetheless, the
 4560 extension of public water and sewer service within the planning area will support
 4561 an increasing residential base. The CMCOG report projects growth of 50 percent
 4562 or 3,383 more residents in 2035 over the 2000 population.
- 4563 • **East Richland** - given significant environmental constraints associated with
 4564 wetlands and floodplains around the Wateree River and its tributaries, as well as
 4565 existing county future land use policy, growth prospects for the East Richland
 4566 planning sector are moderate. The CMCOG report projects growth of 50 percent
 4567 or 2,789 more people by 2035 relative to 2000.
- 4568 • **Kershaw County** - the Elgin Census County Division (CDC), which is northeast
 4569 of Fort Jackson, has seen the most robust growth in the previous three decades

4570 of any CDC in Kershaw County due to its economic ties to the City of Columbia
4571 and access from I-20.

4572 **6.6.1.1. Transportation Projects**

4573 Several transportation improvement projects have been identified within the area that in
4574 general could result in denser development patterns south of Fort Jackson, such as the
4575 proposed widening of Leesburg Road, Pineview Road and Air Base Road, and the
4576 project to extend Shop Road to Garners Ferry Road (US 76). Transportation planners
4577 have also proposed the expansion of Spears Creek Church Road.

4578 Prioritized highway widening segments from the *Columbia Area Transportation Study*
4579 *2035 Long Range Transportation Plan* include:

- 4580 • Two Notch Road: Spears Creek Church Road to Steve Campbell Road
- 4581 • Leesburg Road: Fairmont Drive to Lower Richland Boulevard
- 4582 • Percival Road: I-77 Exit 15 to Smallwood Road
- 4583 • Clemson Road: Two Notch Road to Sparkleberry Lane
- 4584 • Percival Road: Spears Creek Church Road to Highway Church Road South
- 4585 • Spears Creek Church Road: I-20 Exit 82 to Two Notch Road
- 4586 • Percival Road: Smallwood Road to Spears Creek Church Road
- 4587 • US 378: Old Lexington Road to Beulah Church Road
- 4588 • Leesburg Road: Lower Richland Blvd to Harmon Road
- 4589 • Leesburg Road: Harmon Road to McCords Ferry Road
- 4590 • Two Notch Road: S Lake Drive to Longs Pond Road

4591 **6.6.1.2 Wastewater Improvements**

4592 Growth and development is dependent upon the provision of infrastructure. The largest
4593 growth inducing project in the Region that would likely affect areas adjacent to Fort
4594 Jackson would be the proposed wastewater line in the Hopkins area. Richland County
4595 proposes to construct a 12" force main to connect to the existing WWTP in Eastover.
4596 The planned force main would run along Cabin Creek Road eastward and connect to an
4597 existing line near Webber Elementary School. A 16,400 linear-foot proposed force main
4598 from McEntire JNGB would tie into the Hopkins force main approximately 1.75 miles
4599 south of the base. Once main force design is further underway, McEntire JNGB will
4600 explore options for the collection of base wastewater with Richland County.

4601 **6.6.2. Cumulative Impacts – No Action Alternative**

4602 Failure to implement the Master Plan and Master Plan projects would result in a
4603 continuation of certain land use incompatibilities, and facility and operational
4604 inefficiencies. Implementation of the No Action Alternative would eliminate many of the
4605 negligible to minor adverse impacts, but would also eliminate the positive impacts
4606 resulting from the full implementation of the 2012 RPMP.

4607 Operational efficiency, safety and health of the Installation would be adversely impacted
4608 if the Master Plan Projects are not implemented. The replacement of trainee, soldier
4609 and neighborhood housing and additional operational facilities could result in a
4610 substandard living environment. Potential asbestos and LBP concerns are associated
4611 with the continued use of outdated facilities. The lack of adequate facilities for operations
4612 and housing also reduces soldier and staff morale which leads to retention and
4613 recruitment problems.

4614 **6.6.3. Cumulative Impacts – Full Implementation Alternative**

4615 The collective increases in building construction activities and associated environmental
4616 impacts with the overall development of Fort Jackson are detailed in Sections 6.4
4617 through 6.6 by resource group (as defined in Section 6.1). Activities qualitatively and
4618 quantitatively similar to the preferred alternative (i.e., infrastructural
4619 construction/improvement and utilization) have occurred on the Installation for over 60
4620 years without evidence of adverse cumulative impacts to the environment. Therefore, it
4621 is unlikely that significant cumulative impacts will result from implementation of the
4622 preferred alternative.

4623 As a result, no significant cumulative consequences would be expected to occur to land
4624 use or transportation in conjunction with implementation of the 2012 RPMP. Further, no
4625 negative cumulative socioeconomic or environmental justice effects would be anticipated
4626 as a result of the implementation of the Preferred Alternative. No additional cumulative
4627 safety or noise impacts would be anticipated other than those described for physical,
4628 biological, or cultural resources. Construction activity at Fort Jackson and in the region
4629 would have a temporary effect on air quality; however, cumulative consequences would
4630 not be expected to result in emission levels that could affect regional air quality.

4631 **6.6.3.1. Land Use**

4632 Full implementation of the 2012 RPMP, Preferred Land Use Plan, master plan projects,
4633 and ongoing mission operations would have minimal impact on adjacent community land
4634 use and zoning. Further, the continued maintenance and implementation of the results
4635 and recommendations of the JLUS and ICUZ program would have a beneficial impact on
4636 the local community by encouraging land use activities that are compatible with noise
4637 generated by current and planned Installation operations.

4638 On-Post land use would be directly impacted by implementation of the 2012 RPMP,
4639 Preferred Land Use Plan, and master plan projects. The focus of the RPMP is
4640 redevelopment, and renovation of existing facilities in order to consolidate appropriate
4641 land uses and provide some areas for future development; however, additional new
4642 development would be limited. However, these new facilities (e.g., barracks, dining
4643 halls, storage, and training classrooms) would be compatible with existing uses and the
4644 2012 RPMP as they would represent primarily expansion of existing functional land use
4645 areas through infill development.

4646 Implementation of the 2012 RPMP projects would result in additional open space as
4647 dispersed facilities would be replaced by consolidated facilities. Also, master plan
4648 project implementation would result in relocation of several uses within more compatible
4649 land use zones.

4650 **6.6.3.2. Physical Resources**

4651 Implementation of various short-range new construction, renovation/rehabilitation and
4652 infrastructure improvement Master Plan projects that have individual short-term adverse
4653 soil impacts could result in long-term cumulative impacts to soils. Implementation of
4654 BMPs such as mulching, silt fences, sediment traps, straw berms, temporary cover
4655 crops and other erosion control measures implemented in accordance with Natural
4656 Resource Conservation Service (NRCS) Critical Area standards, and establishment of
4657 permanent vegetation would reduce soil cumulative impacts.

4658 Cumulative implementation of the Master Plan, the Master Plan projects and ongoing
4659 mission has the potential to cause adverse impacts to soils. Cumulative short-term
4660 adverse impacts to physical resources would be unavoidable and primarily associated
4661 with construction activities. Long-term significant adverse impacts to physical resources
4662 would be avoidable.

4663 **6.6.3.3. Water Resources**

4664 The Full Implementation Alternative would not involve any projects which would result in:
4665 (a) a structure or work in, under, or over, or having an effect on, a navigable water of the
4666 United States; (b) the deposit of fill material or an excavation that in any manner alters or
4667 modifies the course, location, condition or capacity of a navigable water of the United
4668 States; an action that requires a Rivers and Harbors Act Section 10 permit; or an action
4669 that requires a CWA Section 404 Permit.

4670 Cumulative implementation of the Master Plan, the Master Plan projects, and ongoing
4671 mission would have short- and long-term direct impacts on water resources. Short-term
4672 construction impacts would include potential for increased stormwater runoff,
4673 sedimentation, and spills degrading water quality. Soil mitigation measures, mentioned
4674 above, would reduce potential sediment loading into Fort Jackson surface waterbodies.
4675 Minor long-term adverse impacts on water resources are expected from stormwater

4676 runoff from roads, ROW, and utility maintenance. Cumulatively these impacts would not
4677 be considered to be significant.

4678 **6.6.3.4. Biological Resources**

4679 Full implementation of the Master Plan and ongoing mission requirements has the
4680 potential to cause adverse short-term impacts to biological resources during project and
4681 ongoing construction activities. No long-term significant adverse impacts to biological
4682 resources would be expected. During project implementation, careful consideration
4683 would be given to existing management goals and objectives and protection measures
4684 as identified in the INRMP and the ESMP for the Rough-leaved Loosestrife and the
4685 RCW.

4686 Other efforts such as: revegetation of denuded areas with native species instead of
4687 exotics; additional biological surveys; increased monitoring of construction and training
4688 activities; greater expertise available due to expanded staffs; control of wildfires through
4689 prescribed burning; and more watershed projects could minimize adverse impacts and in
4690 some aspects benefit biological resources over the long-term.

4691 **6.6.3.5. Air Quality**

4692 Implementation of various short range new construction, renovation/rehabilitation and
4693 infrastructure improvement Master Plan projects would result in short-term adverse air
4694 quality impacts. Cumulative implementation of the Master Plan, the Master Plan projects
4695 and ongoing mission has the potential to cause adverse impacts to air quality.
4696 Cumulative short-term adverse impacts to physical resources would be unavoidable and
4697 primarily associated with construction activities. Long-term significant adverse impacts
4698 to physical resources would be avoidable.

4699 **6.6.3.6. Historical and Cultural Resources**

4700 Guidance for the management of historical and cultural resources at Fort Jackson would
4701 continue under the Full Implementation Alternative. Coordination activities with the
4702 SHPO and other agencies would continue as required to ensure an ongoing program for
4703 the inventory, evaluation and preservation of the Installation's historical and cultural
4704 resources. Special considerations would be taken during excavation and construction
4705 activities to avoid disturbance and destruction of any known or undiscovered
4706 archaeological sites.

4707 The Installation's Historic Preservation Officer would continue to conduct cultural
4708 resource surveys as needed, and would respond to reported locations of unknown
4709 cultural resources to ensure proper documentation and preservation. In addition, the
4710 Installation's GIS database would be continuously updated and maintained to provide
4711 access to cultural resource locations, types, significance and relation to military training
4712 areas. These construction and training activities should be coordinated with the

4713 Installation Environmental Office. Management practices under these components
4714 would include protection of cultural sites from disturbance, damage or deterioration.

4715 **6.6.3.7. Socioeconomic Environment**

4716 The Full Implementation Alternative would result in both short- and long-term impacts on
4717 the economy and housing. These impacts would accrue to the region as a result of
4718 master plan project implementation and ongoing mission activities.

4719 Direct economic benefits from implementation of the master plan projects would accrue
4720 from job creation, wages paid to construction workers, and expenditures for services,
4721 goods, and supplies from local and regional vendors. Although estimating the magnitude
4722 of the direct economic benefits associated with implementation of the master plan
4723 projects is beyond the scope of this PEA, it is reasonable to conclude that these
4724 economic impacts yield positive benefits for the Fort Jackson ROI.

4725 Full implementation of the ongoing mission activities would have a long-term beneficial
4726 impact on the local and regional economy as the current operations of the Installation
4727 would be expanded. These economic indicators would be beneficially affected by
4728 expansion of the current mission and operations of Fort Jackson.

4729 On-Post housing resources would be directly impacted beneficially in the long term by
4730 several of the Master Plan projects. These include Drill Sergeant School barracks, three
4731 phased BCT barracks projects, two phased AIT barracks projects, and three receptee
4732 barracks, all of which would enhance on-Post living conditions and upgrade the
4733 standards of the Installation's housing resources.

4734 **6.6.3.8. Noise**

4735 Implementation of various short range new construction, renovation/rehabilitation and
4736 infrastructure improvement Master Plan projects that have individual short-term adverse
4737 noise impacts could result in long-term cumulative impacts to noise. Minor short-term
4738 noise impacts would be mostly unavoidable. Cumulative implementation of the Master
4739 Plan, the Master Plan projects and ongoing mission has the potential to cause adverse
4740 impacts to noise. Cumulative short-term adverse impacts to noise would be unavoidable
4741 and primarily associated with construction activities. Long-term significant adverse
4742 impacts to noise would be avoidable.

4743 **6.6.3.9. Infrastructure**

4744 On-Post transportation and utilities would be beneficially impacted over the long term by
4745 full implementation of ongoing mission operations and selected master plan projects.
4746 Several of the master plan projects (e.g., Quad DFAC and Electrical Substation, BCT
4747 and AIT Barracks Complexes, Improvements to Golden Arrow Road) would result in

4748 reduced on-Post traffic and increased safety as functional operations are consolidated
4749 and roadways improved.

4750 On-Post utilities would be enhanced with scheduled improvements to the utility system in
4751 accordance with selected master plan projects. Selected master plan projects, including
4752 the BCT 4 Barracks Complex (Phase 1), to include a CEP, would result in extension of
4753 certain components of the utility system to buildings or areas of the Installation which
4754 currently are not served. Continued implementation of the Energy Conservation Program
4755 would be beneficial in respect to energy savings, and utility system operations and
4756 maintenance.

4757 **6.6.3.10. Environmental Restoration and Compliance**

4758 Cumulative implementation of the Master Plan, Master Plan projects and ongoing
4759 mission requirements has the potential to cause adverse impacts on environmental
4760 restoration and compliance -components. Cumulative short-term adverse impacts to
4761 environmental restoration and compliance would be unavoidable during project and
4762 ongoing construction activities. Some projects involve hazardous material/waste and
4763 POL management or air emissions. However, this would not result in significant
4764 cumulative long-term impacts, as regulatory controls and management would minimize
4765 potential impacts.

4766 Select projects that involve replacement or renovation of existing facilities (e.g., Quad
4767 DFAC and Electrical Substation, BCT and AIT Barracks Complexes, Repair Receptee
4768 Barracks, Post Conference Room, Pierce Terrace School Replacement, Reception
4769 Battalion Upgrade/Modernization) would provide long-term beneficial impacts to the
4770 Installation through removal of existing LBP and ACM.

4771 **6.6.3.11. Operations**

4772 Beneficial cumulative impacts would be incurred by Installation operations as a result of
4773 continued implementation of the Master Plan, Master Plan projects, and ongoing mission
4774 activities. Operational efficiency and safety would benefit from consolidation of selected
4775 operations as a result of Master Plan project implementation (i.e., Quad DFAC and
4776 Electrical Substation, BCT and AIT Barracks Complexes). Replacement and renovation
4777 of aging facilities would continue to be beneficial in addressing and resolving safety- and
4778 health-related issues of the Installation's environment.

4779 **7. Conclusions and** 4780 **Recommendations**

4781

4782 This PEA has been prepared to evaluate the potential effects on the natural and human
4783 environment associated with the implementation of the 2012 RPMP and related ongoing
4784 mission activities. The PEA evaluates all components of the RPMP, including the SRC,
4785 LRC, and CIS. In addition, the PEA describes and evaluates a wide range of ongoing
4786 mission activities. Impacts associated with the No Action Alternative (which would allow
4787 continued use and development of land in accordance with the 2001 RPMP) are
4788 compared to Alternative 1, the Full Implementation Alternative. This Section describes
4789 conclusions regarding the impact of the No Action and Full Implementation Alternatives.
4790 Potential long- and short-term effects on land use, aesthetics and visual resources,
4791 physical resources, water resources, and biological resources, air quality, historical and
4792 cultural resources, socioeconomics, infrastructure, environmental restoration and
4793 compliance, and operating requirements are evaluated.

4794 **7.1. No Action Alternative**

4795 The Implementation of the No Action Alternative would result in a number of adverse
4796 impacts as detailed in Section 6. Where applicable, impacts of the No Action Alternative
4797 have also been summarized in graphic form and included in Section 6 as Table 6-4
4798 (Master Plan Projects) and Table 6-6 (Ongoing Mission Activities).

4799 Under the No Action Alternative, the 2001 RPMP would continue to guide land use and
4800 installation development; no new construction projects would occur and ongoing mission
4801 activities would continue to occur at current baseline levels. Failure to implement the
4802 Master Plan (and its associated Preferred Land Use Plan) would result in the continued
4803 use of existing deteriorating, maintenance-intensive, and inefficient facilities which are
4804 approaching, or past, the end of their useful life. The continued use of deteriorated
4805 facilities and other operating limitations associated with the No Action Alternative would
4806 have an adverse impact on the ability of the installation to meet current and projected
4807 mission requirements.

4808 Further, as demonstrated in Table 6-6, the No Action Alternative would result in the
4809 continuation of mission activities at current baseline levels, which would provide an
4810 overall beneficial impact. These activities include the continuation of pro-active
4811 management and stewardship of installation resources. Conversely, the No Action
4812 Alternative would result in adverse impacts for those facilities and activities that have
4813 been identified as being deficient if the installation does not proceed with the
4814 implementation of the 2012 RPMP programs and projects.

4815 Based on the analysis included in this PEA, it is apparent that if the Preferred Land Use
4816 Plan and RPMP short range projects are not updated, the Installation's ability to meet
4817 current and future mission assignments will be severely compromised. Further,
4818 implementation of the No Action Alternative could jeopardize the viability of Fort Jackson
4819 in this era of military installation consolidation and closure. These adverse impacts will
4820 occur since required training, administrative, housing, utility and transportation
4821 infrastructure and other support facilities will not be developed in response to critical
4822 current and projected needs which are identified throughout the master planning
4823 process. In addition, the No Action Alternative would greatly reduce the ability of Fort
4824 Jackson to improve the efficiency and safety of current and future operations. The No
4825 Action Alternative would also limit ongoing mission activities to current (i.e., baseline)
4826 levels. Therefore, ongoing mission activities would not be expanded to support the future
4827 physical development and program activity recommendations presented in the RPMP in
4828 response to mission requirements. Therefore, the No Action Alternative is not
4829 considered to be a viable option.

4830 **7.2. Full Implementation Alternative**

4831 The environmental consequences of the Full Implementation Alternative are described in
4832 Section 6 of this PEA. Where applicable, impacts of the Full Implementation Alternative
4833 have also been summarized in graphic form and included in Section 6 as Table 6-3
4834 (Master Plan Projects) and Table 6-5 (Ongoing Mission Activities). General conclusions
4835 regarding impacts of the Full Implementation Alternative on each of the activities
4836 evaluated in the PEA are discussed in the following subsections.

4837 The Preferred Land Use Plan for Fort Jackson proposes the expansion of existing land
4838 uses only to the extent necessary to accommodate additional construction as required to
4839 meet mission requirements and operating standards, and to allow the implementation of
4840 several relatively low-impact land use improvement concepts. The analysis of the
4841 Preferred Land Use Plan in Section 6 indicates that it would be capable of meeting
4842 mission requirements and minimizing impacts to the natural and cultural environment.
4843 Beneficial impacts on the visual character of the Installation, as well as the functionality
4844 of the facilities, would be realized while increasing overall system efficiency. Given this
4845 conclusion, other elements of the proposed action were evaluated under the assumption
4846 that the Installation will proceed with implementation of the Preferred Land Use Plan.

4847 Under the Full Implementation Alternative, a number of construction projects would be
4848 implemented over an extended period of time. This construction program would result in
4849 some short- and long-term adverse impacts to the physical, water, and biological
4850 resources on the Installation. However, since these impacts are within the range of
4851 those normally expected with construction activities, no critical or unique sensitive
4852 resources would be impacted, and no significant adverse impacts would be expected to
4853 occur. As illustrated in Table 6-3, the completion of these projects would have a
4854 substantial overall beneficial effect on the ability of the Installation to meet current and

4855 future mission requirements. In addition, completion of these projects would provide a
4856 benefit the local and regional economy.

4857 Ongoing mission activities would continue to occur at their current level, and would be
4858 expanded to meet the needs of all future RPMP elements and activities. As provided in
4859 Table 6-5, the Full Implementation Alternative as it relates to ongoing mission activities
4860 would result in both beneficial and adverse impacts. Adverse impacts are generally
4861 associated with training, utility systems, maintenance of utility ROW and other cleared
4862 areas, or the construction of additional buildings and infrastructure as required to meet
4863 mission requirements and comply with current regulations, laws and standards.
4864 However, none of these impacts are expected to reach significant levels and these
4865 adverse impacts are offset by numerous beneficial impacts as described in Section 6.6.

4866 **7.3. Conclusions**

4867 Based on the analysis presented in Section 6, it is concluded that the Full
4868 Implementation Alternative is the Army preferred action to be implemented by Fort
4869 Jackson. The Full Implementation Alternative is also the environmentally preferred
4870 action to be implemented by Fort Jackson. As a result, if after public review, significant
4871 environmental impacts are not demonstrated or agreed upon, a Finding of No Significant
4872 Impact (FNSI) is recommended.

4873 In general, properly applied management directives and guidelines, compliance with
4874 applicable laws and regulations, proactive development and implementation of resource
4875 management plans, and ongoing development and operating permit requirements will
4876 collectively serve to prevent significant adverse effects on installation or regional
4877 resources. However, it must be noted that this document was designed to evaluate the
4878 Installation RPMP and related actions in a broad, programmatic manner. Because the
4879 majority of the proposed RPMP short range projects, current site plans, and future
4880 contributing plan actions are conceptual and subject to change, this PEA cannot be used
4881 as a blanket document to cover all actions now and into the future. Accordingly, the
4882 Installation will use the programmatic review procedures incorporated in this PEA to
4883 assist in evaluating the environmental effects of future projects and actions that are not
4884 specifically addressed by this document.

4885 The Full Implementation Alternative is the continued operation of Fort Jackson in a
4886 manner that allows for addressing the current missions and some flexibility for
4887 improvements that increase efficiency and its ability to meet the missions. This action
4888 and the associated effects on the quality of the human environment are not likely to be
4889 highly controversial. The decades of safe operation have shown that the possible effects
4890 on the human environment are not highly uncertain and do not involve unique or
4891 unknown risks. The actions do not establish a precedent for future actions with
4892 significant effects or represent a decision in principle about a future consideration. This
4893 action is not related to other actions with individually insignificant but cumulatively

4894 significant impacts (significance cannot be avoided by terming an action temporary or by
4895 breaking it down into small component parts). The Full Implementation Alternative has
4896 been reviewed part by part in Section 6 and cumulatively in Section 6.7.2.

4897 The principal conclusions of this PEA include: (1) implementation of the Full
4898 Implementation Alternative would not result in significant environmental impacts
4899 provided that BMPs to mitigate these potential environmental impacts are adhered to
4900 during construction and operation of the proposed projects; (2) implementing the Full
4901 Implementation Alternative will provide Fort Jackson with infrastructural improvements
4902 which will allow the Army to achieve their respective mission requirements; (3)
4903 construction and operation of proposed projects on Fort Jackson will provide necessary
4904 facilities to satisfy BCT and AIT training requirements; (4) implementing the Full
4905 Implementation Alternative is consistent with the land use planning objectives for Fort
4906 Jackson; implementing the No Action Alternative is not consistent with land use
4907 planning objectives for Fort Jackson; and (7) implementing the No Action Alternative
4908 would eliminate the negligible to minor environmental impacts associated with the Full
4909 implementation Alternative, but would also eliminate the beneficial impacts of the
4910 Proposed Action.

4911 **7.4. Mitigation Actions**

4912 Given the broad, programmatic nature of this PEA, project-specific mitigation measures
4913 have not been included. Fort Jackson's ENV staff will use this document as a starting
4914 point in identifying specific resource impacts as projects become more defined. Based
4915 on these final environmental screenings, Installation staff will identify and document any
4916 mitigation actions that are required. However, the Army's and Fort Jackson's preferred
4917 approach is to avoid significant impacts by stopping or modifying any project that would
4918 be expected to have such impacts, thereby eliminating the need for other forms of
4919 mitigation.

4920 Based on the information assembled and evaluated during the preparation of this PEA,
4921 there are a number of actions that should continue to be implemented or completed by
4922 the Installation. As these actions are completed it may become necessary to update
4923 selected elements of this PEA, with particular emphasis on the baseline data as detailed
4924 throughout Section 5 (Affected Environment), and the sensitive resource maps (Figures
4925 5.4 – 5.8). Actions that should be completed and considered in future environmental
4926 evaluations include:

- 4927 • Continue ongoing implementation of the INRMP and conduct periodic reviews to
4928 update as needed.
- 4929 • Continue updating and ongoing implementation of endangered species
4930 management plans and associated studies.

-
- 4931 • Complete the ongoing approval process for threatened and endangered species
4932 biological assessments (currently addressing RCW, Rough-leaved Loosestrife,
4933 and Smooth Coneflower), and incorporate results within programmatic and
4934 project environmental reviews to ensure that full consideration is given to these
4935 resources in compliance with all applicable laws and regulations.
- 4936 • Conduct informal or formal consultations with the USFWS, as required as part of
4937 its approval process, if any development or activities are planned in areas that
4938 support any federally listed threatened and endangered species.
- 4939 • Conduct formal surveys to confirm or delineate jurisdictional wetlands in
4940 accordance with the 1987 USACE Wetlands Delineation Manual if development
4941 or actions are planned in areas identified to contain wetlands, and coordinate
4942 with appropriate agencies to ensure that no significant impacts will occur to these
4943 resources, or that appropriate mitigation is provided.
- 4944 • Continue ongoing implementation of the ICRMP and conduct periodic reviews to
4945 update as needed.
- 4946 • Implement the provisions of the Programmatic Agreement with the United States
4947 Army, The State Historic Preservation Officer of South Carolina, and The
4948 Advisory Council On Historic Preservation regarding The Operation,
4949 Maintenance, and Development Of The Fort Jackson Army Installation, South
4950 Carolina.
- 4951 • Revise the sensitive resource maps included in this EA (and the geographic
4952 information system from which they were derived) as additional information
4953 becomes available, and ensure that these maps are used as an integral part of
4954 the environmental screening process for all future projects and actions that are
4955 subject to NEPA analysis at Fort Jackson. This should include integration of all
4956 mapped data with the programmatic review process flow charts included in this
4957 EA.
- 4958 • Assure that no project on Fort Jackson would proceed until all significant impacts
4959 are mitigated to non-significant levels through: 1) continued adherence to the
4960 review procedures established under Section HT of the Environmental
4961 Assessment and the Fort Jackson Record of Environmental Consideration (REC)
4962 process; 2) compliance with all applicable laws and regulations; and 3) a
4963 thorough ongoing coordination with the appropriate resource review agencies.
- 4964

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5217 December 2012.
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9. List of Preparers

5221

5222

Name/Title	Project Role	Experience
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Cheryl Propst	Deputy Project Manager/NEPA Specialist	12
Rebecca Berzinis	Biologist/NEPA Specialist	10
Alexandra Peet	Master Planner	9
Debbie McKee	Editor/Document Production	15
Hal Fravel	GIS Analyst	8

5223

10. Distribution List

5224

5225

Agencies

5226

Dr. Jodi Barnes

5227

South Carolina Department of Archives and History

5228

State Historic Preservation Office

5229

8301 Parklane Road

5230

Columbia, SC 29223

5231

5232

Tribes

5233

The Honorable Jennifer Onzawah, Governor

5234

Absentee-Shawnee Tribe of Oklahoma

5235

2025 South Gordon Cooper Drive

5236

Shawnee, OK 74801

5237

5238

Henryetta Ellis, Tribal Historic Preservation Officer

5239

Absentee-Shawnee Tribe of Oklahoma

5240

2025 South Gordon Cooper Drive

5241

Shawnee, OK 74801

5242

5243

The Honorable Tarpie Yargee, Chief

5244

Alabama-Quassarte Tribal Town

5245

P.O. Box 187

5246

Wetumka, OK 74883

5247

5248

Augustine Asbury

5249

2nd Chief/Cultural Preservation Officer

5250

Alabama-Quassarte Tribal Town

5251

P.O. Box 187

5252

Wetumka, OK 74883

5253

5254

The Honorable Donald Rogers, Chief

5255

Catawba Indian Nation

5256

996 Avenue of Nations

5257

Rock Hill, SC 29730

5258

5259

Dr. Wenonah Haire

5260

Tribal Historic Preservation Officer

5261

Catawba Indian Nation

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1536 Tom Steven Road

5263

Rock Hill, SC 29730

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5265

The Chickasaw Tribal Legislature

5266

Bill Anoatubby, Governor

5267

The Chickasaw Nation

5268

P.O. Box 1548

5269 Ada, OK 74821-1548
5270 The Honorable Buford Rolin, Chairman
5271 Poarch Creek Indians
5272 5811 Jack Springs Road
5273 Atmore, AL 36502
5274
5275 Robert Thrower
5276 Acting Tribal Historic Preservation Officer
5277 Poarch Creek Indians
5278 5811 Jack Springs Road
5279 Atmore, AL 36502
5280
5281 The Honorable Mitchell Cypress, Chairman
5282 Seminole Tribe of Florida
5283 6300 Stirling Road
5284 Hollywood, FL 33024
5285
5286 Mr. Willard Steele, THPO
5287 Seminole Tribe of Florida
5288 Ah-Tah-Thi-Ki Museum
5289 HC 61 Box 21 A
5290 Clewiston, FL 33440
5291
5292 The Shawnee Tribe
5293 Chairman Ron Sparkman
5294 29 South Highway 69A
5295 Miami, OK 74354
5296
5297 Kim Jumper, THPO
5298 The Shawnee Tribe
5299 29 South Highway 69A
5300 Miami, OK 74354
5301
5302 The Honorable George Scott, Town King
5303 Thlopthlocco Tribal Town
5304 P.O. Box 188
5305 Okemah, OK 74859
5306
5307 Mr. Charles Coleman
5308 THPO/NAGPRA Officer
5309 Thlopthlocco Tribal Town
5310 Route 1, Box 190-A
5311 Weleetka, OK 74880
5312
5313 Gingy Nail
5314 Historic Preservation Officer
5315 The Chickasaw Nation
5316 P.O. Box 1548
5317 Ada, OK 74821-1548
5318 The Honorable Michell Hicks, Principal Chief

5319 The Eastern Band of Cherokee Indians
5320 Qualla Boundary
5321 810 Acquoni Road
5322 Cherokee, NC 28719
5323
5324 Mr. Russell Townsend, Tribal Historic Preservation Officer
5325 Mr. Tyler Howe, Preservation Specialist
5326 The Eastern Band of Cherokee Indians
5327 P.O. Box 455
5328 Cherokee, NC 28719
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5330 Chief Glenna J. Wallace
5331 Eastern Shawnee Tribe
5332 P.O. Box 350
5333 Seneca, MO 64865
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5335 Ms. Robin Dushane
5336 Cultural Preservation Director
5337 Eastern Shawnee Tribe
5338 P.O. Box 350
5339 Seneca, MO 64865
5340
5341 The Honorable Mekko Tiger Hobia
5342 Kialegee Tribal Town
5343 P.O. Box 332
5344 Wetumka, OK 74883
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5346 The Honorable A.D. Ellis
5347 Principal Chief
5348 Muscogee Creek Nation of Oklahoma
5349 P.O. Box 580
5350 Highway 75 & Loop 56
5351 Okmulgee, OK 74447
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5353 Ted Isham
5354 Historic Preservation Office
5355 Muscogee (Creek) Nation
5356 P.O. Box 580
5357 Okmulgee, OK 74447
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5359 The Honorable Stuart Patterson, Chief
5360 Tuscarora Nation
5361 1983 Upper Mountain Road
5362 Sanborn, NY 14132

5363 The Honorable George Wickliffe, Chief
5364 United Keetoowah Band
5365 2450 South Muscogee Avenue
5366 Tahlequah, OK 74464
5367 Ms. Lisa Stopp

5368 Acting Tribal Historic Preservation Officer
5369 United Keetoowah Band
5370 P.O. Box 746
5371 Tahlequah, OK 74465
5372

5373 **Libraries**

5374 Richland County Public Library
5375 Main Library
5376 1431 Assembly Street
5377 Columbia, SC 29201
5378

5379 Thomas Lee Hall Library
5380 Building 4679 Lee Road
5381 Fort Jackson, SC 29207

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Appendices