# *DRAFT*
# *ENVIRONMENTAL ASSESSMENT*

# Proposed Dining Facility
# Camp Bullis, Texas

**Prepared by Geo-Marine, Inc.**

**September 2005**

**DRAFT**
**FINDING OF NO SIGNIFICANT IMPACT (FNSI) FOR:**
**THE PROPOSED CONSTRUCTION OF A DINING FACILITY**
**CAMP BULLIS TRAINING SITE, TX**

**AGENCY:**
United States Army, Fort Sam Houston Military Reservation and Camp Bullis Training Site (San Antonio, Texas).

**SUMMARY:**
The U.S. Army has prepared an Environmental Assessment (EA) for a proposed consolidation of its dining facilities at Camp Bullis, Texas. The proposed action is to upgrade the dining facilities at Camp Bullis to support growing demands and remedy health and safety deficiencies at its existing facilities. Based on the following summary of effects (and as discussed in the accompanying EA), the Commander has determined that the preferred means of accomplishing the proposed action (Alternative 2) is not a major federal action significantly affecting the quality of the human environment, within the meaning of the National Environmental Policy Act of 1969 (NEPA). Therefore, preparation of an Environmental Impact Statement (EIS) is not required.

**INTRODUCTION:**
This document prepared in accordance with 32 Code of Federal Regulations (CFR) §651, *Environmental Analysis of Army Actions, Final Rule (29 March 2002).* The regulations at 32 CFR §651 are the specific instructions adopted by the Army to implement Section 102 (2) of the National Environmental Policy Act. The Army is directed to develop its instructions by the President's Council on Environmental Quality; their regulations are published at 40 CFR §1500–1508. The EA evaluated potential impacts from the Proposed Action and a No Action Alternative. Cumulative impacts from the other actions occurring and the Proposed Action were also evaluated.

**BACKGROUND**:
Camp Bullis is located in Bexar and Comal counties, Texas, and is a sub-installation of Fort Sam Houston located in San Antonio, Texas. It encompasses 27,987 acres approximately 18 miles northwest of Fort Sam Houston. The installation runs approximately 10 miles from north to south and 4 miles from east to west. The surrounding area has been primarily rural but has become increasingly urbanized through residential development as the suburbs of San Antonio have radiated outward and extended closer to Camp Bullis.

The mission of Camp Bullis is to provide target ranges, training areas, airspace, facilities, outdoor recreation programs, and necessary installation support to all of its customers. Camp Bullis provides target ranges and field training areas for the Army, the U.S. Department of the Air Force, the Marine Corps, and the armed forces reserve units in the San Antonio area, as well as serving as an exercise site for many military units from outside the region. Camp Bullis serves primarily as the field-training environment for the Academy of Health Science and Defense Medical Readiness Training Institute, a part of the Army Medical Department Center and School headquartered at Fort Sam Houston. Camp Bullis is also home to the regional Security Police Ground Defense School and Southwest Army Reserve Intelligence Support Center activities.

**PROPOSED ACTION:**
The proposed action is to upgrade the dining facilities at Camp Bullis to support growing demands and correct risks to health and safety at existing facilities. The purpose of the proposed action is to provide a consolidated dining facility that meets the requirement to feed troops efficiently and safely. The need for the proposed action is to rectify the safety and sanitation concerns with the current facilities. The preferred means of accomplishing the consolidation of dining facilities at Camp Bullis is described under the Preferred Alternative heading below.

Specifically, Camp Bullis has received increased use over recent years from its tenants and other units needing to train at the unique environment provided by the post. Currently, the facility's users dine in buildings that are increasingly ill equipped to handle the traffic of personnel. The current facilities can only accommodate a maximum of 232 personnel during one 90-minute meal period and do not meet the requirements of the post. Current dining facilities are three wooden structures (Buildings 5105, 5106, and 5107) constructed in 1930. The major deficiencies of these buildings are the lack of space for food preparation, field feeding, dining, container and dish washing, refrigeration, and storage of food. Many of these deficiencies are sanitation issues and pose safety and health risks.

**PREFERRED ALTERNATIVE:**
Under Alternative 2, which is the preferred means of accomplishing the proposed action, Building 5101 would be adaptively reused as a consolidated dining facility. Buildings 5105, 5106, and 5107 would be demolished to accommodate the proposed construction of a 10,000 SF asphalt parking lot adjacent to the proposed dining facility. A summary of activities proposed for Alternative 2 are provided in Table 1-1.

**TABLE 1-1. SUMMARY OF ALTERNATIVE 2**

| Proposed Action | Notes |
|---|---|
| ***Renovation/Construction*** | |
| Building 5101 | Expand from 18,500 SF to 19,250 SF<br>NRHP-eligible<br>Accommodate 750 personnel during a 90-minute meal period<br>Support 600 field meals daily |
| Parking Area | Approximately 10,000 SF<br>Asphalt paving |
| Timeline | April 2008 through June 2009 |
| ***Demolition*** | |
| Building 5105 | 3,521 SF<br>Constructed in 1930<br>NRHP-eligible |
| Building 5106 | 2,490 SF<br>Constructed in 1930<br>NRHP-eligible |
| Building 5107 | 3,402 SF<br>Constructed in 1930<br>NRHP-eligible |
| ***Estimated Cost for Renovation*** | $7.1 Million |
| ***Meets Selection Criteria*** | Yes |

**OTHER ALTERNATIVES CONSIDERED:**

- **No Action**: Under the No Action Alternative, present dining operations would continue in their current state for an indefinite period of time. Dining functions would not be consolidated, and a facility sufficient to support field feedings and civilian staff would not be constructed. The dining facilities would continue to fail to support the demand at the installation and pose risks to health and safety. Although this would not meet the purpose and need for the action, it is carried forward in the analysis to establish baseline conditions as required by the Council on Environmental Quality (CEQ) regulations.

- **Alternative 3**: Under Alternative 3, Building 5101 would be demolished to accommodate a new dining facility, which would be constructed on its site. Buildings 5105, 5106, and 5107 would be demolished to accommodate a new parking area as described in Alternative 2. A summary of proposed activities for Alternative 3 is provided in Table 1-2.

**TABLE 1-2. SUMMARY OF ALTERNATIVE 3**

| Proposed Action | Notes |
|---|---|
| ***Construction*** | |
| New Dining Facility | Approximately 27,400 SF<br>Accommodate 750 personnel during a 90-minute meal period<br>Support 600 field meals daily<br>Building design not complete |
| Parking Area | Asphalt paving<br>Approximately 10,000 SF |
| Timeline | April 2008 through June 2009 |
| ***Demolition*** | |
| Building 5101 | 18,500 SF<br>Constructed in 1930<br>NRHP-eligible |
| Building 5105 | 3,521 SF<br>Constructed in 1930<br>NRHP-eligible |
| Building 5106 | 2,490 SF<br>Constructed in 1930<br>NRHP-eligible |
| Building 5107 | 3,402 SF<br>Constructed in 1930<br>NRHP-eligible |
| ***Estimated Cost*** | $7.4 Million |
| ***Meets Selection Criteria*** | Yes |

**ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER ANALYSIS:**

- **Use Another Facility On Camp Bullis**. There are no other existing facilities that meet the size and location requirements for the proposed dining facility.

- **Lease a Facility Off Camp Bullis**. The closest facilities to Camp Bullis are a quarry and a public park. There is no lease space available adjacent to Camp Bullis and leasing space off-post does not meet selection criteria of being within easy walking distance of the hutment and being located in the cantonment area.

- **Use Space at Another Installation**. Other installations located within the San Antonio area (i.e., Brooks City Base, Lackland Air Force Base, and Randolph Air Force Base, and Fort Sam Houston) are 20 to 30 miles from Camp Bullis. Transporting trainees off-post results in significant loss of training time and does not meet selection criteria of being within easy walking distance of the hutment. Additionally, all of the installations have dining facilities with maximum use at mealtimes.

**ENVIRONMENTAL IMPACTS OF PREFERRED AND OTHER ALTERNATIVES:**

- **Air Quality:** No significant long-term impacts to air quality would result from implementing the proposed action or alternatives. Short-term temporary impacts to air quality would be expected during construction activities associated with Alternatives 2 and 3; however, these impacts would cease once construction activities were concluded.

- **Cultural Resources:** Under Alternative 2, rehabilitation of Building 5101 would have positive effects to cultural resources. Demolition of NRHP-eligible buildings would have an adverse effect; however, this effect could be mitigated through proper historic documentation. Under Alternative 3, the demolition of four NRHP-eligible buildings would have a cumulative and adverse effect on the potential NRHP District at Camp Bullis. Mitigation, if possible, would be coordinated with the Texas State Historic Preservation Officer.

- **Hazardous Materials and Substances:** No significant impacts would result from implementing Alternatives 2 or 3 since construction and demolition activities would be conducted in accordance with Federal, state, and local regulations.

- **Social or Economic Resources (Including Environmental Justice**): No significant impacts would result from implementing Alternatives 2 or 3.

- **Biological Resources:** No significant long-term impacts to biological resources would result from implementing Alternatives 2 or 3. Temporary disturbance to local wildlife during construction and demolition may occur; however, this disturbance would be considered minimal due to the lack of natural habitat in the immediate area. The region of influence (ROI) is a developed area and does not contain natural habitat for listed species of concern at Camp Bullis. The installation would continue to manage biological resources as described in its Integrated Natural Resources Management Plan.

- **Earth Resources:** There are no caves or karst features within the ROI; thus, no impacts are expected to these features. Minor impacts to earth resources in the ROI from the creation of impervious surfaces would result from implementing Alternatives 2 or 3. The soils in the ROI have high erosion potential, and if left exposed, gullies and other erosion features could form during storm water runoff events. Design engineering would accommodate the additional runoff from construction or renovation activities to avoid erosion or sedimentation in the drainage channels leading to Salado Creek. Additionally, during construction activities, the installation of silt fencing around the construction area and other means of diverting water from running through and off the site would be implemented to limit the erosion of soils on the site.

- **Water Resources:** Under proposed action or alternatives, no adverse effects to water resources are expected with implementation of best management practices. Compliance with existing storm water plans and hazardous material plans would reduce any potential impacts.

- **Human Health and Safety:** Under Alternatives 2 and 3, positive impacts would result from the creation of improved sanitation conditions at the new dining facility. Negative impacts from lead-based paint and asbestos are not expected since demolition activities would be conducted in accordance with Federal, state, and local regulations. If Alternative 1, the No Action Alternative were implemented, potential negative impacts to health and safety of personnel and troops would result from current sanitation conditions.

- **Noise:** No significant long-term impact from noise would result from implementing the proposed action or alternatives. Short-term temporary impacts from noise associated with heavy machinery and increased traffic volume would be expected during construction activities associated with Alternatives 2 and 3; however, these impacts would cease once construction activities concluded.

**DOCUMENT AVAILABILITY:**
An EA and draft FNSI are available for public review and comment at the following locations: Public Affairs Office, Building 124, 1212 Stanley Road, Fort Sam Houston, TX 78234; Fort Sam Houston Library, Building 1222, 2601 Harney, Fort Sam Houston, TX 78234; San Antonio Public Library, 600 Soledad Plaza, San Antonio, TX 78205.

All interested agencies, groups, and individuals are invited to submit written comments on the EA and FNSI to the address listed below within 30 days of the date of publication of the Notice of Availability (NOA) in the *San Antonio Express News*. Please send any comments to MCCS-BFE (Attn: Mr. Michael Pumphrey), 2202 15th Street, STE 36, Fort Sam Houston, TX 78234-5036.

**CONCLUSION:**
Based upon my review of the facts and analyses contained in the attached EA, I conclude that no significant environmental impacts would occur from the implementation of the Preferred Alternative (Alternative 2). Accordingly, the requirements of NEPA, CEQ regulations and the Air Force Environmental Impact Analysis Process are fulfilled and the preparation of an Environmental Impact Statement is not required.

_____ _____
Col Garry F. Atkins DATE

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# EXECUTIVE SUMMARY

This Environmental Assessment (EA) analyzes the potential environmental consequences resulting from the proposed consolidation of the dining facilities at Camp Bullis, Texas. The proposed action is to upgrade the dining facilities at Camp Bullis to support growing demands and correct risks to health and safety at the existing facilities.

This environmental analysis is designed to:

- Help decision makers take environmental factors into consideration when making their decisions; and,
- Inform the public about the potential environmental effects of implementing the proposed action.

## Environmental Impact Analysis Process

This EA was prepared in accordance with 32 Code of Federal Regulations (CFR) §651, *Environmental Analysis of Army Actions, Final Rule (29 March 2002)*. The regulations at 32 CFR §651 are the specific instructions adopted by the Army to implement Section 102 (2) of the National Environmental Policy Act. The Army is directed to develop its instructions by the President's Council on Environmental Quality; their regulations are published at 40 CFR §1500-1508.

## Purpose and Need for the Proposed Action

The purpose of the proposed action is to provide a consolidated dining facility that meets the requirement to feed troops efficiently and safely. The need for the proposed action is to rectify the safety and sanitation concerns with the current facilities. Such a need at Camp Bullis has been forecasted for several years. Construction of a new dining facility was listed in programmed construction projects in the 2002 facility master plan and the Final Programmatic Environmental Impact Statement (PEIS) for the Fort Sam Houston, Camp Bullis, and Canyon Lake Recreation Area Master Plan (USACE 2002).

Camp Bullis has received increased use over recent years from its tenants and other units needing to train at the unique environment provided by the post. The current facilities can only accommodate a maximum of 232 personnel during one meal period and do not meet the requirements of the post. The dining facilities (Buildings 5105, 5106, and 5107) are made of wood and were constructed in the early 1930s. The major deficiencies of the facilities are the lack of space for food preparation, field feeding preparation, dining, container and dish washing, refrigeration, and storage of food. The current design of the facilities also poses numerous safety and health risks from sanitation concerns.

## Proposed Action and Alternatives

Three existing National Register of Historic Places (NRHP) eligible historic Buildings (5105, 5106, and 5107) along Wilkerson Road, currently used as the dining facilities, would be demolished. These three properties are contributing elements of a potential historic district (referred to as the Camp Bullis Cantonment Historic District), which encompasses the cantonment area. An existing warehouse (Building 5101) would be renovated to accommodate the proposed consolidated dining facility or Building 5101 would be demolished and a new dining facility would be constructed in its place. Building 5101 is also a NRHP-eligible historic property and a contributing element of the potential historic district. The EA analyzes three alternatives, including a No Action Alternative.

### *Alternative 1 – No Action*

Under the No Action Alternative, present dining operations would continue in their current state for an indefinite period of time. Dining functions would not be consolidated and a sufficient area to support field feedings and civilian staff would not be constructed. The dining facilities would continue to fail to support the demand at the installation and pose risks to health and safety.

### *Alternative 2 – Preferred*

The preferred alternative is to adaptively reuse Building 5101 as a consolidated dining facility. Building 5101 has already been identified as an excellent candidate for adaptive reuse following an architectural and structural conditions study performed by Fisher and Heck Architects, Inc. and WSC, Inc. (consulting structural engineers), in July of 2004 (John 2004). This study concluded that the building is in good structural condition and with renovation, could physically and economically be converted into a dining hall.

Under the preferred alternative Building 5101 would be converted and expanded to 19,250 square feet (SF) (currently 18,500 SF) to support a 90-minute seating capacity of 750. The renovated facility would have a 300-seat dining area, a 100-seat overflow area, serving area, kitchen, and a field feeding preparation area. The field feeding area would support the preparation of a daily average of 600 field meals. Major supporting elements, roofline, and foundation of the building would remain intact. A field tray loading dock would be added to the north end of the building. To preserve the historic integrity of the building, the west façade of the building would remain as true to its original conditions as possible. The east façade, which has been altered considerably over time, would be expanded approximately 10 feet by 75 feet. A small covered porch and handicap ramps would be added to this expanded area. To maintain the integrity of this historic structure and ensure safety, all renovations would comply with the Installation Design Guide, *Secretary of the Interior's Standards for Rehabilitation*, U.S. Department of the Army (Army) Standard Design for Dining Facilities, and Design Criteria for Fire Protection Engineering. The renovations would begin in April 2008 and end in June 2009. Cost of the proposed renovation and purchase of new equipment would be approximately $7.1 million.

Buildings 5105, 5106, and 5107 would be demolished to accommodate a new 10,000 SF asphalt parking area for the proposed dining facility. These buildings were constructed in the early 1930s and are located along the north side of Wilkerson Road in parallel alignment. Building 5105 contains 3,521 SF and serves as the overflow dining facility. Building 5106, 2,490 SF, is used for office space and for storage of pre-packaged field meals, dry food, and supplies. Building 5107 currently serves as the main dining facility and is a 3,402 SF structure. The latter two buildings have been the subject of incompatible additions, diminishing the historical integrity of the two properties. Building 5107 is also in poor condition. The location for the parking area is considered optimal because it is: (1) a level site verses other parts of the cantonment area, (2) located near Building 5101, (3) sufficiently distanced from nearby structures to meet Force Command security and safety requirements for the distance between facilities and parking areas, and (4) would have the least impact on the historic character and landscape of the potential historic district.

The renovation of Building 5101 would replace the functions of the three buildings and, as noted above, the space occupied by these buildings would be well suited as a parking area for civilian employees and visitors using the proposed dining facility. The buildings proposed for demolition have the potential to contain lead-based paint and asbestos. Therefore, demolition activities would be conducted in accordance with all Federal, state, and local regulations to ensure personnel safety. As these buildings are historic and NRHP-eligible, formal consultation with the State Historic Preservation Officer (SHPO), as required by Section 106 of the National Historic Preservation Act (NHPA), would occur prior to demolition. Additionally, any historic building materials that could be savaged from Buildings 5105, 5106, and 5107 would be retained and stored for future use.

### *Alternative 3*

Under Alternative 3, Building 5101 would be demolished to accommodate a new dining facility. Building 5101 is approximately 18,500 SF and was constructed in 1930. The building is a one-story, gable-roofed, wood-framed structure on a raised concrete foundation. The building is located on Wilkerson road and is eligible for inclusion in the NRHP. A new facility of approximately 27,000 SF would be constructed in the place of Building 5101 to serve as the new consolidated dining facility. The facility's design is not complete, but would be sensitive to the potential NRHP District in its architectural character, size, materials, and scale so as not to visually detract from the existing cultural facilities. Consultation with the SHPO would be conducted to ensure compliance with Section 106 of the NHPA. However, it should be noted that prior consultation with the SHPO's office regarding the potential demolition of this historic building resulted in the SHPO strongly recommending that the building be adaptively reused and that demolition was not approved (Oaks 2002).

Proposed construction on the new dining facility would begin April 2008 and last until June 2009. The cost to construct the new facility and purchase new equipment would be approximately $7.4 million.

Buildings 5105, 5106, and 5107 would be demolished to accommodate a new 10,000 SF asphalt parking area for the proposed dining facility as described for Alternative 2.

## Summary of Environmental Consequences

It is expected that there would be minor environmental concerns associated with implementation of Alternative 2. Under Alternative 3, impacts would be similar to Alternative 2 with the exception of cultural resources, where impacts would be more significant and cumulative in nature. A summary of potential impacts and comparison to the baseline conditions (Alternative 1) is contained in Table ES-1.

**Table ES-1. Summary of Potential Impacts**

| Resource Area | Alternative 1 – No Action | Alternative 2 – Preferred | Alternative 3 |
|---|---|---|---|
| **Air Quality** | No change to existing conditions. | Temporary increase in criteria pollutants during construction and demolition activities. No significant impacts to local or regional air quality. | Same potential impacts as Alternative 2. |
| **Cultural and Visual Resources** | No change to existing conditions. | Rehabilitation of Building 5101 would have positive effects to cultural resources. Demolition of NRHP eligible buildings would have an adverse effect; however, this effect could be mitigated through proper historic documentation. | The demolition of four NRHP eligible buildings would have a cumulative and adverse effect on the potential NRHP District at Camp Bullis. Mitigation, if possible, would be coordinated with the Texas SHPO. |
| **Hazardous Materials and Waste Management** | No change to existing conditions. | No impact expected since construction and demolition activities would be conducted in accordance with Federal, state, and local regulations. | Same potential impacts as Alternative 2. |
| **Socioeconomics and Environmental Justice** | No change to baseline socioeconomic conditions. | No significant effects on demographics, employment or income potential anticipated. | Similar potential effects as Alternative 2. |
| **Biological Resources** | No change to existing conditions. | Temporary displacement of local wildlife during construction and demolition. There are no threatened or endangered species within the project area. | Same potential impacts as Alternative 2. |

**Table ES-1. Summary of Potential Impacts (Cont'd.)**

| Resource Area | Alternative 1 – No Action | Alternative 2 – Preferred | Alternative 3 |
|---|---|---|---|
| **Earth Resources** | No change to existing conditions. | Minor impacts to earth resources from creation of impervious surfaces since soils in project area have a high erosion potential. If left exposed, gullies could form during storm water runoff events. | Similar impacts from possible erosion as described for Alternative 2. |
| **Water Resources** | No change to existing conditions. | Adverse effects to water resources are not expected with implementation of best management practices. Compliance with existing storm water plans and hazardous material plans would reduce the potential impacts. | Similar impacts as described for Alternative 2. |
| **Human Health and Safety** | Potential negative impacts to health and safety of personnel and troops with current sanitation conditions. | Positive impacts to improved sanitation conditions at the new dining facility. Negative impacts from lead-based paint and asbestos are not expected since demolition activities would be conducted in accordance with Federal, state, and local regulations. | Same potential impacts as Alternative 2. |
| **Noise** | No changes to current noise environment. | Temporary, minor increases in noise are expected during demolition and construction activities. | Similar potential effects as Alternative 2. |

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# 1.0 PURPOSE AND NEED FOR THE PROPOSED ACTION

## 1.1 INTRODUCTION

The U.S. Department of the Army (Army) Garrison Commander at Fort Sam Houston proposes to upgrade dining facilities at Camp Bullis to support growing demands and correct risks to health and safety at existing facilities.

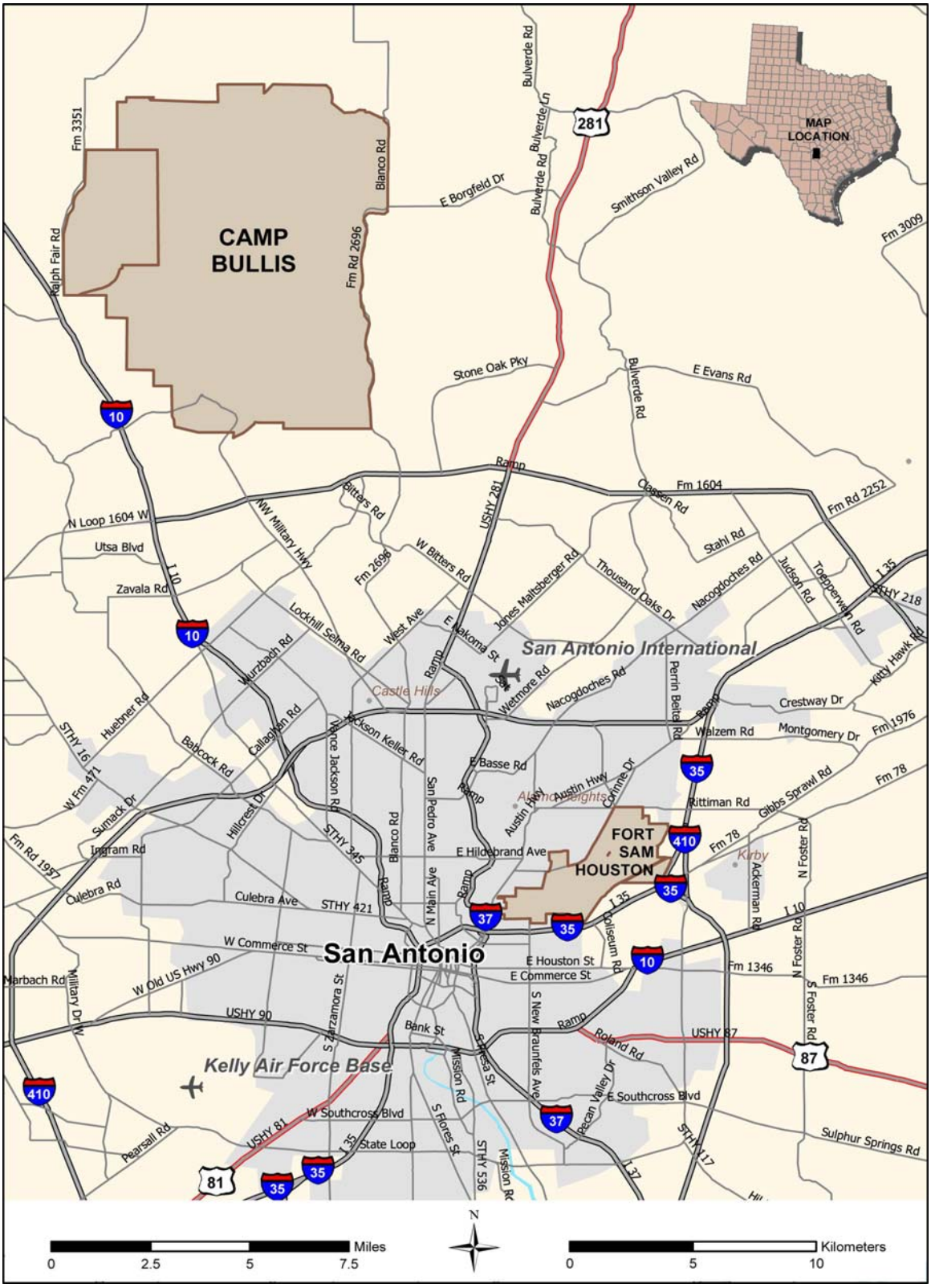
The National Environmental Policy Act (NEPA) (42 United States Code [USC] 4321 to 4370d) requires that Federal agencies, prior to undertaking an action, carefully consider the environmental aspects of proposed actions and to make environmental information available to decision-makers and the public. This environmental assessment (EA) was prepared in accordance with 32 Code of Federal Regulations (CFR) §651, *Environmental Analysis of Army Actions, Final Rule (29 March 2002).* The regulations at 32 CFR §651 are the specific instructions adopted by the Army to implement Section 102 (2) of NEPA. The Army is directed to develop its instructions by the President's Council on Environmental Quality (CEQ); their regulations are published at 40 CFR §1500–1508.

## 1.2 BACKGROUND

Camp Bullis is located in Bexar and Comal counties, Texas and is a sub-installation of Fort Sam Houston located in San Antonio, Texas. It encompasses 27,987 acres approximately 18 miles northwest of Fort Sam Houston (Figure 1-1). The installation runs approximately 10 miles from north to south and 4 miles from east to west. The surrounding area has been primarily rural but has become increasingly urbanized through residential development as the suburbs of San Antonio have radiated outward and extended closer to Camp Bullis.

The mission of Camp Bullis is to provide target ranges, training areas, airspace, facilities, outdoor recreation programs, and necessary installation support to all of its customers. Camp Bullis provides target ranges and field training areas for the Army, the U.S. Department of the Air Force, the Marine Corps, and the armed forces reserve units in the San Antonio area, as well as serving as an exercise site for many military units from outside the region. Camp Bullis serves primarily as the field-training environment for the Academy of Health Science and Defense Medical Readiness Training Institute, a part of the Army Medical Department Center and School headquartered at Fort Sam Houston. Camp Bullis is also home to the regional Security Police Ground Defense School and Southwest Army Reserve Intelligence Support Center activities.

**Figure 1-1. General Location of Camp Bullis**



The camp was formally established as Camp Bullis in 1917. Its history, however, dates back to 1906 when it was first used as a training area for Fort Sam Houston. During the Mexican Punitive Expedition and World War I, the Army used Camp Bullis extensively for training infantry units. Between wars, the facility was the site of several building programs, which resulted in the construction of the now historic cantonment area. During the 1930s, the camp continued to be used for training purposes, most notably by the 2nd Infantry Division, which tested new models for infantry divisional organization. Subsequent to World War II, the focus of Fort Sam Houston and Camp Bullis' began to change toward training of the Army's medical personnel. Fort Sam Houston became the "schoolhouse" for doctrinal training of combat medics and medical students with the camp used as their field training site. The presence of one of the Army's pre-eminent research and teaching facilities, Brooke Army Medical Center encouraged this shift away from infantry training toward field medical training. In 1995, the Army placed these companion installations under the Army Medical Department's command, thereby relieving Army Forces Command of the posts in recognition of the changed focus.

Having been designated as a geographically separate training site of Fort Sam Houston, Camp Bullis was a directorate level activity of the Garrison Command. In 1990, the post was recognized as a separate sub-installation with its own Headquarters Detachment that reports to the Garrison Commander of Fort Sam Houston.

Over time as doctrinal changes in Army force structure contributed to a shift of combat service support units (e.g., the Quartermaster, Ordnance, Medical Support and Finance units and branches) into the Army Reserve and the placement of combat arms (e.g., the Infantry, Artillery, Armor branches) into the Army National Guard. As a result Reserve Component forces (which includes the National Guard) began to use Camp Bullis quite extensively.

Along with Army usage, other services noted the value of Camp Bullis as a field training site. During the 1960s, the U.S. Air Force began to increase its use of Camp Bullis as a training facility for its airmen undergoing basic training in San Antonio at Lackland Air Force Base along with those training to be security police. Similar to the influence that the presence of Brooke Army Medical Center had on Fort Sam Houston, the presence of the Air Force's largest and pre-eminent medical facility, Wilford Hall, at Lackland Air Force Base contributed to the Air Force decision to train its combat medics at Lackland and to perform field training at Camp Bullis.

The existing dining facilities at Camp Bullis are located within the cantonment area near the hutment (concentration of transient troop housing) for efficiency and logistics. There are no permanent party troops that reside on Camp Bullis; instead, transient troops are temporarily stationed at Camp Bullis for training purposes and usually do not have access to personal vehicles. Therefore, dining and sleeping quarters are closely located to make efficient use of limited training time. The dining facility serves two functions: (1) to serve troops who dine onsite three complete, hot meals per day; and (2) to prepare hot meals for consumption in a field setting. Those hot meals are placed in containers and transported to the troops during their field training maneuvers at various training ranges at Camp Bullis. Given the distances involved, it is

more efficient to bring the food to the troops rather than transport the troops to the dining facility. Troops may also eat packaged meals known as MREs; however, since they are more expensive than prepared meals and because they do not promote troop morale as a hot meal does, they generally are used during simulated tactical, small-unit operations.

## 1.3 PURPOSE AND NEED

The purpose of the proposed action is to provide a consolidated dining facility that meets the requirement to feed troops efficiently and safely. The need for the proposed action is to rectify the safety and sanitation concerns with the current facilities.

Camp Bullis has received increased use over recent years from its tenants and other units needing to train at the unique environment provided by the post. The current facilities can only accommodate a maximum of 232 personnel during one 90-minute meal period and do not meet the requirements of the post. The existing dining facilities (Buildings 5105, 5106, and 5107) are wooden structures constructed in 1930. The major deficiencies of these buildings are the lack of space for food preparation, field feeding, dining, container and dish washing, refrigeration, and storage of food. The current buildings also pose safety and health risks from numerous sanitation concerns including the following:

- Large field feeding containers, used to take hot meals to soldiers in training, are currently washed outside because there is no space to clean them inside the building.
- The potato peeling equipment is located outside.
- Due to settling of the building, doors do not completely seal off outside air.
- Building components (structural, electrical, and plumbing) are in poor condition.
- Walk-in refrigerators are outside, since the facilities do not have sufficient indoor space to house them, requiring food to be carried from the outside to the kitchen exposing them to the elements.
- There are a total of two latrines in the three facilities, one of these accessible only by walking through the kitchen.
- Buildings 5105, 5106, and 5107 are all in moderate to poor condition with general deterioration from exposure and maintenance issues.
- The tap water is brown in all three facilities, possibly from rusted pipes.

## 1.4 SCOPE OF THE ENVIRONMENTAL ANALYSIS

The NEPA and CEQ regulations require that Federal agencies consider the environmental effects of proposed actions and alternatives during the decision-making process. Preparation of an environmental document (this EA) must precede final decisions regarding the proposed action,

and be available to inform decision-makers and the public of potential environmental effects. The development of this EA allows for public consideration and input concerning the implementation of the proposed construction of a new dining facility or renovation of an existing warehouse. This EA provides the decision-makers and the public with the information required to understand the possible future environmental effects of the selection of the alternatives implementing the proposed action. The decision to be made, after review of the analysis presented in this EA, would be whether to issue a finding of no significant impact (FNSI) or to proceed with the preparation of an environmental impact statement (EIS) to further quantify and detail the potentially significant impacts resulting from selection of alternatives that implement the proposed action. While this EA provides information with which to make better decisions about proposed actions, it does not imply project approval or authorization. Authorization is obtained from the Fort Sam Houston Garrison Commander.

## 1.5 ORGANIZATION OF THIS ENVIRONMENTAL ASSESSMENT

This document follows the format established in 32 CFR §651 implementing the CEQ regulations (40 CFR §1502). The document consists of the following sections:

**Section 1.0 – Purpose and Need for the Action:** presents a brief description of the background of the installation; the purpose and need for the proposed action; the scope of the environmental review; and a brief description of the EA organization.

**Section 2.0 – Description of the Proposed Action and Alternatives Considered:** provides a detailed description of the proposed action and alternatives for implementing the proposed action and the criteria used to select these alternatives. Section 2.0 also contains an alternatives comparison matrix.

**Section 3.0 – Affected Environment:** presents the existing baseline environment or present condition of the areas potentially affected by the alternatives for implementing the proposed action. Each environmental resource potentially impacted by the implementation of the proposed action and alternatives is discussed, as well as the regulatory background, if applicable, for each impacted resource area. In accordance with CEQ regulations, only those resource areas potentially impacted by the proposed action will be examined in detail.

**Section 4.0 – Environmental Consequences:** provides the scientific and/or analytical basis for comparing the alternatives and describes the probable consequences of each alternative on relevant environmental attributes.

**Section 5.0 – Cumulative Impacts:** provides a definition of cumulative impacts, lists relevant past, present, and reasonably foreseeable actions, and presents an analysis of the proposed action when combined with these actions.

**Section 6.0 – List of Preparers:** provides a list of the document preparers and contributors.

**Section 7.0 – Distribution List and Agencies and Individuals Contacted:** provides a list of persons and agencies contacted in the preparation of this EA.

**Section 8.0 – References:** provides a list of references used in the preparation of this EA.

**Section 9.0 – Acronyms and Abbreviations:** provides a list of applicable acronyms and abbreviations used throughout the text.

**Appendices –** provides background and supporting information to this EA, as necessary.

# 2.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES CONSIDERED

This section of the EA describes the proposed action and the alternatives for implementing the proposed action developed by Fort Sam Houston and Camp Bullis. This section also describes the process used to objectively identify the reasonable alternatives carried forward for detailed environmental analysis. A comparative summary of the alternatives, and how they do or do not meet the selection criteria, is also included.

## 2.1 IDENTIFICATION OF SELECTION CRITERIA

In an effort to satisfy the purpose and need for the proposed action, several selection criteria were developed to compare and contrast alternative ways of fulfilling the objectives of the proposed action in accordance with 32 CFR §651. Those specific criteria include:

1. New construction or existing building for renovation must be located in the cantonment area within walking distance (1,000 feet) from the primary training areas and the hutment and offer up to 10,000 square feet (SF) of space for parking for civilian staff and visitors.

2. New construction or renovation must be consistent with design themes within the potential National Register of Historic Places (NRHP) District.

3. New construction or renovation must be capable of accommodating a minimum of 700 soldiers during a single meal period (90-minutes) and supporting a daily average of 600 field meals.

4. New construction must comply with the Army rules and guidelines established in the Facilities Reduction Program that requires demolition of equal square footage for every new building constructed (Army Regulation [AR] 415-15: *Army Military Construction Program Development and Execution*).

5. New construction or renovation should be a cost-effective alternative that meets all other selection criteria.

## 2.2 DESCRIPTION OF THE PROPOSED ACTION

The proposed action is to upgrade the dining facilities at Camp Bullis to support growing demands and correct risks to health and safety at existing facilities.

### 2.2.1 Alternative 1 – No Action Alternative

The No Action Alternative serves as the conceptual baseline for the analysis of the proposed action. Under the No Action Alternative, present dining operations would continue in their current state for an indefinite period of time. Dining functions would not be consolidated and a facility sufficient to support field feedings and civilian staff would not be constructed. The dining facilities would continue to fail to support the demand at the installation and pose risks to health and safety. Although this would not meet the purpose and need for the action, it is carried forward in the analysis to establish baseline conditions as required by CEQ regulations.

### 2.2.2 Alternative 2 – Preferred Alternative

The preferred alternative is to adaptively reuse Building 5101 as a consolidated dining facility (Figure 2-1). Buildings 5105, 5106, and 5107 would be demolished to accommodate the proposed construction of a 10,000 SF asphalt parking lot adjacent to the proposed dining facility. A summary of activities proposed for Alternative 2 are provided in Table 2-1.

**Table 2-1. Summary of Alternative 2**

| Proposed Action | Notes |
|---|---|
| ***Renovation/Construction*** | |
| Building 5101 | Expand from 18,500 SF to 19,250 SF<br>NRHP-eligible<br>Accommodate 750 personnel during a 90-minute meal period<br>Support 600 field meals daily |
| Parking Area | Approximately 10,000 SF<br>Asphalt paving |
| Timeline | April 2008 through June 2009 |
| ***Demolition*** | |
| Building 5105 | 3,521 SF<br>Constructed in 1930<br>NRHP-eligible |
| Building 5106 | 2,490 SF<br>Constructed in 1930<br>NRHP-eligible |
| Building 5107 | 3,402 SF<br>Constructed in 1930<br>NRHP-eligible |
| ***Estimated Cost for Renovation*** | $7.1 Million |
| ***Meets Selection Criteria*** | Yes |

**Figure 2-1. Current and Proposed Dining Facility**

## Renovation Activities

Building 5101, a warehouse, would be expanded to 19,250 SF (currently 18,500 SF) to provide a 90-minute seating capacity of 750. The renovated facility would have a 300-seat dining area, a 100-seat overflow area, serving area, kitchen, and a field feeding preparation area. The field feeding area would support the preparation of a daily average of 600 field meals. The major supporting elements, roofline, and foundation of the building would remain intact. A field tray loading dock would be added to the north end of the building. To preserve the historic integrity of the building, the west façade of the building would remain as true to its original conditions as possible. The east façade, which has been altered considerably over time, would be expanded by approximately 10 feet by 75 feet. A small covered porch and handicap ramps would be added to the expanded eastern facade. To maintain the integrity of the property and the surrounding potential historic district, all renovations would comply with the *Secretary of the Interior's Standards for Rehabilitation*, the Installation Design Guide, and would be coordinated with the SHPO. The renovations would begin in April 2008 and end in June 2009. Cost of the proposed renovation and purchase of new equipment would be approximately $7.1 million. Net present value equated to $269.86 for renovation (see Appendix A).

Onsite equipment could include heavy trucks or the equivalent. Additional light-duty equipment (e.g., generators, compressors) would also be utilized throughout the duration of activities. All equipment would likely come from local sources and would be brought to the site via local roadways. Equipment maintenance would be conducted offsite by the contractor and in accordance with all applicable laws and regulations. Renovation activities would typically occur 8 hours per day (8:00 am to 5:00 pm), 6 days per week (Monday through Saturday). A majority of the construction and renovation materials would likely come from local sources and would be stored onsite for the duration of activities. To reduce impacts to local and regional air quality, abatement measures, such as proper maintenance of construction vehicles, limiting the size of the disturbance area, and watering exposed soils at the beginning and end of daily activities, would be implemented.

In accordance with the Texas Pollutant Discharge Elimination System (TPDES), Phase II requirements (construction sites between 1 and 5 acres) administered by the Texas Commission on Environmental Quality (TCEQ), a Construction General Permit for storm water would be obtained, and a site-specific storm water pollution prevention plan (SWPPP) would be prepared. A notice of intent (NOI) would be filed with the TCEQ and with the operator of the municipal storm water sewer system receiving flow at least 48 hours in advance of construction activities. The SWPPP would be maintained on site and would provide measures to eliminate or reduce any potential impacts to surface water quality in the project area.

## Demolition Activities

Buildings 5105, 5106, and 5107 would be demolished to accommodate a new parking area for the proposed dining facility. All three facilities are NRHP-eligible properties. These buildings, located along the north side of Wilkerson Road in parallel alignment, were constructed in 1930.

Two of the structures, 5106 and 5107, have been the subject of incompatible additions, which have diminished the historic character of these facilities. The condition of Building 5107 is also reportedly poor. The main dining facility (Building 5107) is 3,402 SF; the overflow dining facility (Building 5105) is 3,521 SF; and Building 5106, used for office space and for storage of MRE, dry food, and supplies, is 2,490 SF. With the renovation of Building 5101, there would be no mission requirements for these buildings and the space would be well suited as a parking area for civilian employees and visitors using the proposed dining facility.

Demolition would occur during normal daylight working hours (8:00am to 5:00pm) using heavy equipment such as bulldozers and cranes. Some wooden structures could require demolition by hand so that wood and other historic materials could be salvaged and reused in the future. Scrap wood and other building materials from demolition not used in other projects and certified as free from contaminants would be disposed of in accordance with applicable regulations. Demolition activities would also include: excavation to a maximum depth of two feet below the surface (the removal of a foundation or slab), the removal of impervious surfaces (concrete or asphalt adjacent to the building), and excavating/backfilling soil. Buildings proposed for demolition could potentially have or contain:

- Asbestos-containing material,
- Lead-based paint and other lead-containing material,
- Polychlorinated biphenyls (in older light fixtures and transformers), and/or
- Low-level radiation sources (smoke detectors and exit signs).

The Environmental Office at Fort Sam Houston would ensure that notification of the proposed demolition activity in accordance with Texas Civil Statutes Article 44-77-3a and the Texas Asbestos Health Protection Rules would be accomplished between Fort Sam Houston and the Texas Department of Health.

Demolition of all three buildings would be accomplished through a multiple step process to ensure the proper handling and control of the demolition activities. These steps would include screening and inspection, abatement, and disposal as well as protection of near-by historic properties.

*Cultural Assessment.* Camp Bullis has a rich history reflected in archeological and historic resources. As a consequence, the potential for cultural resources to be impacted by the proposed action and alternatives is high. The three buildings proposed for demolition have been assessed and identified as eligible for listing in the NRHP in the Camp Bullis Training Site Integrated Cultural Resources Management Plan (Geo-Marine, Inc. 2001). Formal consultation with the SHPO, in accordance with the Section 106 of the NHPA, its accompanying regulations, 36 CFR Part 800, and Army Regulation 200-4 would be initiated by the Fort Sam Houston and Camp

Bullis Historic Preservation Officer. Further discussion of the consultation process and the assessment of potential impacts on cultural resources are provided in Sections 3.2 and 4.2.

*Screening and Inspection.* The next step in the demolition process would be screening and inspecting the site for any elements of concern. The buildings would be screened to determine the presence or potential presence of any hazardous materials and waste. Once hazardous materials and waste or elements of concern are identified during the screening process, a detailed inspection would be conducted to determine the extent, the type, and condition of hazardous materials and waste present.

*Abatement.* Abatement procedures for any hazardous materials and waste or elements of concern present at a demolition site would be accomplished in accordance with all applicable local, state, and Federal laws and regulations before the demolition activities begin.

*Disposal.* Once abatement or demolition activities begin, disposal of the hazardous waste, debris, and scrap material from demolition activities would occur. The debris from demolition would be sampled for the presence of contaminants before being transported off-site for disposal. All waste and demolition debris would be managed, handled, and disposed of in accordance with all local, state, and Federal laws and regulations.

### Parking Area Construction

An asphalt paved parking area of approximately 10,000 SF would be constructed in the location of Buildings 5105, 5106, and 5107. The final design of the parking area would comply with regulations in the installation SWPPP and would be the subject of coordination with the SHPO due to its location within the potential Camp Bullis Cantonment Historic District.

## 2.2.3 Alternative 3

Under Alternative 3, Building 5101 would be demolished to accommodate a new dining facility, which would be constructed on its site. Buildings 5105, 5106, and 5107 would be demolished to accommodate a new parking area as described in Alternative 2. A summary of proposed activities for Alternative 3 is provided in Table 2-2.

### Demolition Activities

Building 5101, a warehouse, would be demolished to accommodate construction of the new dining facility. This facility is approximately 18,500 SF and was constructed in 1930. The warehouse is a one-story, gable-roofed, wood-framed building on a raised concrete foundation. Building 5101 is located on Wilkerson Road and is eligible for listing on the NRHP. Buildings 5105, 5106, and 5107 would be demolished to accommodate a new parking area for the proposed dining facility as described in Alternative 2.

**Table 2-2. Summary of Alternative 3**

| Proposed Action | Notes |
|---|---|
| ***Construction*** | |
| New Dining Facility | Approximately 27,400 SF<br>Accommodate 750 personnel during a 90-minute meal period<br>Support 600 field meals daily<br>Building design not complete |
| Parking Area | Asphalt paving<br>Approximately 10,000 SF |
| Timeline | April 2008 through June 2009 |
| ***Demolition*** | |
| Building 5101 | 18,500 SF<br>Constructed in 1930<br>NRHP-eligible |
| Building 5105 | 3,521 SF<br>Constructed in 1930<br>NRHP-eligible |
| Building 5106 | 2,490 SF<br>Constructed in 1930<br>NRHP-eligible |
| Building 5107 | 3,402 SF<br>Constructed in 1930<br>NRHP-eligible |
| ***Estimated Cost*** | $7.4 Million |
| ***Meets Selection Criteria*** | Yes |

All of the proposed structures for demolition are eligible for inclusion in the NRHP. The demolition activities and multi-step process to include cultural assessment, screening and inspection, abatement, and disposal would be the same as described in Alternative 2. However, it should be noted that the measures necessary to mitigate the loss of four historic properties, as detailed in 4.2 of this document, are more significant than those described in Alternative 2. Additionally, the demolition of Building 5101 has been the subject of previous consultation with the SHPO in which Fort Sam Houston/Camp Bullis was strongly encouraged to seek reuse of the building instead of demolition.

## Construction Activities

A new facility would be constructed in place of Building 5101 along Wilkerson Road. The footprint of the facility would include approximately 27,400 SF of space. The cost to construct a new facility and to purchase equipment would be approximately $7.4 million. An economic analysis of this alternative indicated that the costs for new construction would be $289.15 per square foot NPV (See Appendix A). Construction would begin April 2008 and last until June 2009.

On-site equipment could include heavy trucks or the equivalent. Additional light-duty equipment (e.g., generators, compressors) would also be utilized throughout the duration of activities. All

equipment would likely come from local sources and would be brought to the site via local roadways. Equipment maintenance would be conducted offsite by the contractor and in accordance with all applicable laws and regulations. Construction activities would typically occur 8 hours per day (8:00am to 5:00pm), 6 days per week (Monday through Saturday). A majority of the construction materials would likely come from local sources and would be stored on site for the duration of activities. No grading plan is currently available; however, it is assumed that cut-and-fill materials would be balanced so that no new soils would be brought on site or existing soils removed. Since the site would have previously supported a similar sized building, minimal fill is expected. All construction debris would be disposed of at an approved off-post landfill in accordance with all applicable Federal, state, and local laws and regulations. If any of the debris is asbestos-containing material or lead-based paint, it would be disposed of according to Federal, state, and local regulations.

To reduce impacts to local and regional air quality, abatement measures, such as proper maintenance of construction vehicles, limiting the size of the disturbance area, and watering exposed soils at the beginning and end of daily construction activities, would be implemented.

In accordance with the TPDES Phase II requirements (construction sites between 1 and 5 acres) administered by the TCEQ, a Construction General Permit for storm water would be obtained and a site-specific SWPPP would be prepared. A NOI would be filed with the TCEQ and with the operator of the municipal storm water sewer system receiving flow at least 48 hours in advance of construction activities. The SWPPP would be maintained on site and would provide measures to eliminate or reduce any potential impacts to surface water quality in the project area.

The design of the building would comply with new construction provisions of the *Secretary of the Interior's Standards for Rehabilitation*, the Installation Design Guide, and would be coordinated with the SHPO to ensure compliance with Section 106 of the NHPA. Its style, size, materials, and scale would be compatible with nearby historic buildings and would be sensitive to the historic landscape of the cantonment area.

## 2.3 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM ANALYSIS

Three other alternatives were considered, but were eliminated from further analysis since they did not meet the selection criteria identified for the proposed action.

*Use Another Facility On Camp Bullis*. There are no other existing facilities that meet the size and location requirements for the proposed dining facility.

*Lease a Facility Off Camp Bullis*. The closest facilities to Camp Bullis are a quarry and a public park. There is no lease space available adjacent to Camp Bullis and leasing space off-post does not meet selection criteria of being within easy walking distance of the hutment and being located in the cantonment area.

*Use Space at Another Installation.* There are three other military installations in San Antonio, in addition to Fort Sam Houston: Brooks City Base, Lackland Air Force Base, and Randolph Air Force Base. All of the installations have dining facilities with maximum use at mealtimes. These installations are from 20 to 30 miles from Camp Bullis. Transporting trainees off-post results in significant loss of training time and does not meet selection criteria of being within easy walking distance of the hutment.

## 2.4 COMPARISON OF ALTERNATIVES

Three alternatives will be carried forward for analysis in the EA. A comparison of proposed action details as well as potential environmental concerns for each alternative is provided in Table 2-3.

**Table 2-3. Comparison of Alternatives**

| | Alternative 1 | Alternative 2 | Alternative 3 |
|---|---|---|---|
| ***Construction*** | None | Construct 10,000 SF parking area. | Construct 27,000 SF dining facility.<br>Construct 10,000 SF parking area. |
| ***Renovation*** | None | Renovate Building 5101; expand to 19,250 SF. | None |
| ***Demolition*** | None | 5105<br>5106<br>5107 | 5101<br>5105<br>5106<br>5107 |
| ***Timeline*** | None | April 2008 through June 2009 | April 2008 through June 2009 |
| ***Estimated Cost for Construction/ Renovation*** | $0 | $7.1 Million | $7.4 Million |
| ***Meets Selection Criteria*** | No | Yes | Yes |
| ***Potential Environmental Concerns*** | Safety and health concerns for installation personnel and troops. | Demolition of three structures eligible for inclusion in the NRHP.<br><br>Minor increase in particulate matter during demolition and renovation activities.<br><br>Potential safety concerns with hazardous materials during demolition.<br><br>Increased impervious surfaces (parking area) that could affect storm water pollution prevention. | Demolition of four structures eligible for inclusion in the NRHP.<br><br>Minor increase in particulate matter during demolition and construction activities.<br><br>Potential safety concerns with hazardous materials during demolition.<br><br>Increased impervious surfaces (parking area) that could affect storm water pollution prevention. |

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# 3.0 AFFECTED ENVIRONMENT

## 3.1 AIR QUALITY

### 3.1.1 Definition of Resource

The Clean Air Act (CAA) (42 USC §7401-7671q), as amended, provides the framework for Federal, State, tribal, and local rules and regulations to protect air quality. The CAA gives the U.S. Environmental Protection Agency (USEPA) the responsibility to establish the primary and secondary National Ambient Air Quality Standards (NAAQS) (40 CFR §50) that set safe concentration levels for six criteria pollutants: particulate matter measuring less than 10 microns in diameter ($PM_{10}$), sulfur dioxide ($SO_2$), carbon monoxide (CO), nitrous oxides ($NO_x$), ozone ($O_3$), and lead (Pb). Primary NAAQS are established to protect public health and secondary standards provide protection for the public welfare, which includes wildlife, climate, transportation, and economic values (Table 3-1). Additionally, the USEPA also has responsibility for ensuring that air quality standards are met to control pollutant emissions from mobile (e.g., vehicles) and stationary (e.g., factories) sources.

**Table 3-1. National Ambient Air Quality Standards**

| Air Pollutant | Averaging Time | NAAQS | |
|---|---|---|---|
| | | Primary | Secondary |
| **CO** | 1-hour<br>8-hour | 35 ppm<br>9 ppm | 35 ppm<br>9 ppm |
| **$NO_x$** | Annual | 0.053 ppm | 0.053 ppm |
| **$SO_2$** | 3-hour<br>24-hour<br>Annual | -<br>0.14 ppm<br>0.03 ppm | 0.50 ppm<br>-<br>- |
| **$PM_{10}$** | 24-hour<br>Annual | 150 µg/m$^2$<br>50 µg/m$^3$ | 150 µg/m$^2$<br>50 µg/m$^3$ |
| **$O_3$** | 1-hour[3]<br>8-hour | 0.12 ppm<br>0.08 ppm | 0.12 ppm<br>0.08 ppm |
| **Pb** | Quarterly Average | 1.5 µg/m$^2$ | 1.5 µg/m$^2$ |

Notes:
[1] The ozone 1-hour standard applies only to designated nonattainment areas.
ppm: parts per million
µg/m$^2$: micrograms per cubic meter

Source: USEPA 2005

The NAAQS represent the maximum levels of background pollutants that are considered safe, with an adequate margin of safety to protect the public health and welfare. Short-term standards (1-, 8-, and 24-hour periods) have been established for pollutants contributing to acute health effects, while long-term standards (annual averages) have been established for pollutants contributing to chronic health effects. Each state is responsible for compliance with the NAAQS

and has the authority to adopt standards stricter than those established under the Federal program; however, the TCEQ accepts the Federal standards for the San Antonio metropolitan area.

Areas that violate NAAQS are designated as nonattainment areas; those areas that comply with air quality standards are designated attainment areas for the relevant pollutants. Attainment/maintenance areas are areas that have previously been designated nonattainment and have subsequently been redesignated to attainment for a probationary period, due to compliance with the NAAQS. Attainment/maintenance status is achieved through the development and implementation of maintenance plans for criteria pollutants of interest and a reduction of actual pollutants.

The CAA contains the language that mandates a general conformity rule to ensure that Federal actions in nonattainment and attainment/maintenance areas do not interfere with a state's timely attainment of the NAAQS. The CAA also requires that Federal agencies demonstrate that their actions conducted in nonattainment and attainment/maintenance areas conform to the guidelines of the State Implementation Plan.

The general conformity rule divides the air conformity process into two distinct areas: applicability analysis and conformity determination. The applicability analysis process requires Federal agencies to determine if their proposed action(s) would increase emissions of criteria pollutants above the threshold levels (40 CFR §93.153). These threshold rates vary depending on severity of nonattainment and geographic location (Tables 3-2 and 3-3). *De minimis* emissions are total direct and indirect emissions of a criteria pollutant caused by a Federal action in a nonattainment or attainment/maintenance area that are less than the applicable threshold rates.

An action is subject to a conformity determination if the emissions are deemed regionally significant, even if the emissions are *de minimis*. Regionally significant emissions are defined as the total direct and indirect emissions of a Federal action for any criteria pollutant that represents 10 percent or more of a nonattainment or maintenance area's emissions inventory for that pollutant.

The Region of Influence (ROI) on a local scale for this proposed action would be the demolition and construction areas at Camp Bullis. The regional ROI would be the San Antonio metropolitan area Air Quality Control Region (AQCR) 217.

### 3.1.2 Affected Environment

The San Antonio metropolitan area (AQCR 217), including Bexar and Comal counties, is considered by the TCEQ to be in near nonattainment status for $O_3$ (TCEQ 2004). The area is in attainment for all other criteria pollutants.

**Table 3-2. Applicability Thresholds in Nonattainment Areas**

| Criteria Pollutant | TPY |
|---|---|
| **$O_3$ (VOCs or $NO_x$)** | |
| Serious NAAs | 50 |
| Severe NAAs | 25 |
| Extreme NAAs | 10 |
| Other $O_3$ NAAs outside an $O_3$ transport region | 100 |
| Marginal and moderate NAAs inside an $O_3$ transport region | 50 |
| VOC | 100 |
| **CO** | |
| All NAAs | 100 |
| **$SO_2$ or $NO_x$** | |
| All NAAs | 100 |
| **$PM_{10}$** | |
| Moderate NAAs | 100 |
| Serious NAAs | 70 |
| **Pb** | |
| All NAAs | 25 |

NAA: nonattainment areas
TPY: tons per year
VOC: volatile organic compound
Source: 40 CFR § 93.153

**Table 3-3. Applicability Thresholds for Attainment/Maintenance Areas**

| Criteria Pollutants | TPY |
|---|---|
| **$O_3$ ($NO_x$, $SO_2$, or $NO_2$)** | |
| All maintenance areas | 100 |
| **$O_3$ (VOCs)** | |
| Maintenance areas inside an $O_3$ transport region | 50 |
| Maintenance areas outside an $O_3$ transport region | 100 |
| **CO** | |
| All maintenance areas | 100 |
| **$PM_{10}$** | |
| All maintenance areas | 100 |
| **Pb** | |
| All maintenance areas | 25 |

Source: 40 CFR § 93.153

# 3.2 CULTURAL AND VISUAL RESOURCES

## 3.2.1 Definition of Resource

Cultural resources are prehistoric and historic sites, structures, landscapes, districts, artifacts, or any other physical evidence of human activity considered important to a culture, subculture, or community for scientific, traditional, religious or other reasons. Cultural and visual (aesthetic) resources are nonrenewable resources whose value may be diminished by physical disturbances. These resources include buildings, structures, objects, landscapes, archeological sites, and traditional cultural properties (TCP). The latter encompass places of importance to a culture or community for reasons of history, religion, or science. In this EA, visual resources are considered within the context of cultural resources because of the symbiotic relationship between the two types of resources. Specifically, visual resources are a part of the Camp Bullis' historic landscape and are protected under cultural resources legislation.

Federal regulatory requirements for the protection of cultural resources are chiefly guided by the NHPA of 1966 (16 USC 470 et seq., as amended), the Archeological and Historic Preservation Act of 1974 (16 USC 469a et seq.), and the Archeological Resources Protection Act (ARPA) of 1979 (16 USC 470aa-470ll). All of these laws are designed to ensure adequate consideration of the values of historic properties in carrying out federal activities and to attempt to identify and mitigate impacts to significant historic properties. The term "historic properties" refers to cultural resources listed on or eligible for inclusion in the NRHP. The NHPA is the principal authority used to protect historic properties; Federal agencies must determine the effect of their actions on cultural resources and take certain steps to ensure that these resources are located, identified, evaluated, and protected. Project activities that impact historic properties are those activities that result in:

- physical destruction of or damage to all or part of the property;
- alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material reduction, and provision of handicapped access, that is not consistent with the Secretary's standards for the treatment of historic properties (36 CFR §68) and applicable guidelines;
- removal of the property from its historic location;
- change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;
- introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features;

- neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and

- transfer, lease, or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

The NHPA's implementing regulation, 36 CFR §800, defines the responsibilities of the state, the Federal government, and the Advisory Council on Historic Preservation in protecting historic properties identified in a project area. The 36 CFR §60 establishes the NRHP and defines the criteria for evaluating eligibility of cultural resources for listing on the NRHP. The ARPA of 1979 protects archeological resources on Federal lands. Unauthorized excavation, removal, damage, alteration, or defacement of archeological resources on public lands is prohibited.

Legal mandates pertaining to Native American cultural resources and religious freedom include the NHPA, Native American Graves Protection and Repatriation Act of 1990 (25 USC 3001 et seq., 43 CFR 10), NEPA, ARPA, and the American Indian Religious Freedom Act of 1978, as amended (42 USC 1996-1996a), and Executive Order (EO) 13007. Army regulations and guidelines (AR 200-4, Army Pamphlet 200-4, and the Annotated Policy Document for the American Indian and Alaska Native Policy [27 October 1999]) recommend the following steps be taken to facilitate consultation:

- establishment of an ongoing consultation relationship with Native Americans;

- designation of a Coordinator for Native American Affairs; and

- incorporation of consultation procedures into existing Army planning and procedural documents.

For this analysis, the ROI under NEPA is synonymous with the Area of Potential Effect, as defined by regulations implementing the NHPA. The ROI for the analysis of visual and cultural resources at Camp Bullis includes all areas where ground disturbing activities, demolition, new construction, and historic property renovation will take place.

### 3.2.2 Affected Environment

Cultural resources have been divided for ease of discussion into four main categories—prehistoric and historic archeological resources, historic buildings and structures, traditional resources, and historic landscape.

Only those properties determined to be significant under cultural resources legislation (i.e., properties that meet the National Park Service criteria for inclusion in the NRHP) are subject to protection or consideration by a Federal agency. Significant cultural resources, either prehistoric or historic in age, are referred to as "historic properties."

In compliance with the NHPA, Camp Bullis representatives would initiate the Section 106 review process with the Texas SHPO regarding potential effects that construction and historic property rehabilitation would have on the proposed NRHP District at Camp Bullis (Freeman 1998) (Figure 3-1).

#### 3.2.2.1 *Prehistoric and Historic Archeological Resources*

For the purposes of providing a context for the cultural resources analyzed within this EA, very brief discussions of the prehistory and history at Camp Bullis are presented. Additional detailed information can be found in a number of previously prepared reports, including the Integrated Cultural Resources Management Plan (ICRMP): Camp Bullis Training Site (Army 2001).

Camp Bullis is located within the Central Texas archeological region. Four major Native American cultural periods are recognized within this region—the Paleo-Indian Period (10,000-6000 B.C.); the Archaic Period (6000 B.C.-A.D. 800); the Late Prehistoric Period (A.D. 800-1700); and the Historic Period (post A.D. 1525), with several phases or complexes defined within each. From the information derived from archeological investigations conducted in the region, it appears that the first inhabitants in Central Texas arrived over 11,000 years ago during the Paleo-Indian period. Evidence of Paleo-Indian activity in central Texas, however, is infrequent. Archeological studies conducted at Camp Bullis suggest that it was first occupied during the latter part of this period.

Numerous Archaic period sites, primarily lithic scatters, lithic procurement sites, and campsites, are found at Camp Bullis. In Central Texas, the Archaic period is defined by increasing sedentism and population growth, with associated social differentiation with several distinct cultural groups evolving.

The Late Prehistoric period, which is also represented in Camp Bullis' archeological record, is marked by economic adaptations arising from the adoption of the bow and arrow as the weapon of choice among Central Texas groups. The greater efficiency of the bow and arrow may have contributed to changes in the relative importance of hunting as opposed to gathering, but there is little evidence indicating the adoption of agriculture. Trade with the Caddoan groups of East Texas is indicated by the ceramics found at some Late Prehistoric sites (a single sherd of Caddoan pottery has been found at Camp Bullis). Late prehistoric sites at Camp Bullis are primarily lithic procurement sites, campsites, and lithic scatters.

Native American use of the Camp Bullis area appears to have continued through at least the early part of the Contact Period (A.D. 1525-1820), a period that is marked first by Spanish expeditions into the region in 1691 and later the establishment of missions.

During the early part of the Historic Period (post 1820), the Mexican government sanctioned settlement in the interior portions of Texas allowing Anglo-Americans and Euro-Americans to legally inhabit the Central Texas region. Despite immigration, the population of San Antonio and the surrounding area remained relatively low until the 1840s, when a large number of German immigrants moved into the region. In the 1850s, cattle ranchers started large-scale ranches in Central and South Texas, dominating the economy for decades to come. After the Civil War, the arrival of the railroad to San Antonio spurred a post war boom and accelerated immigration into the region. It was at this point, during the mid-to-late 1880s, that Camp Bullis became the site of at least a dozen small farms and ranches. Structural and archeological evidence of these farms still exist on post, including the home of Otto Schell (Building 6201), a German immigrant who moved to the property as early as 1888.

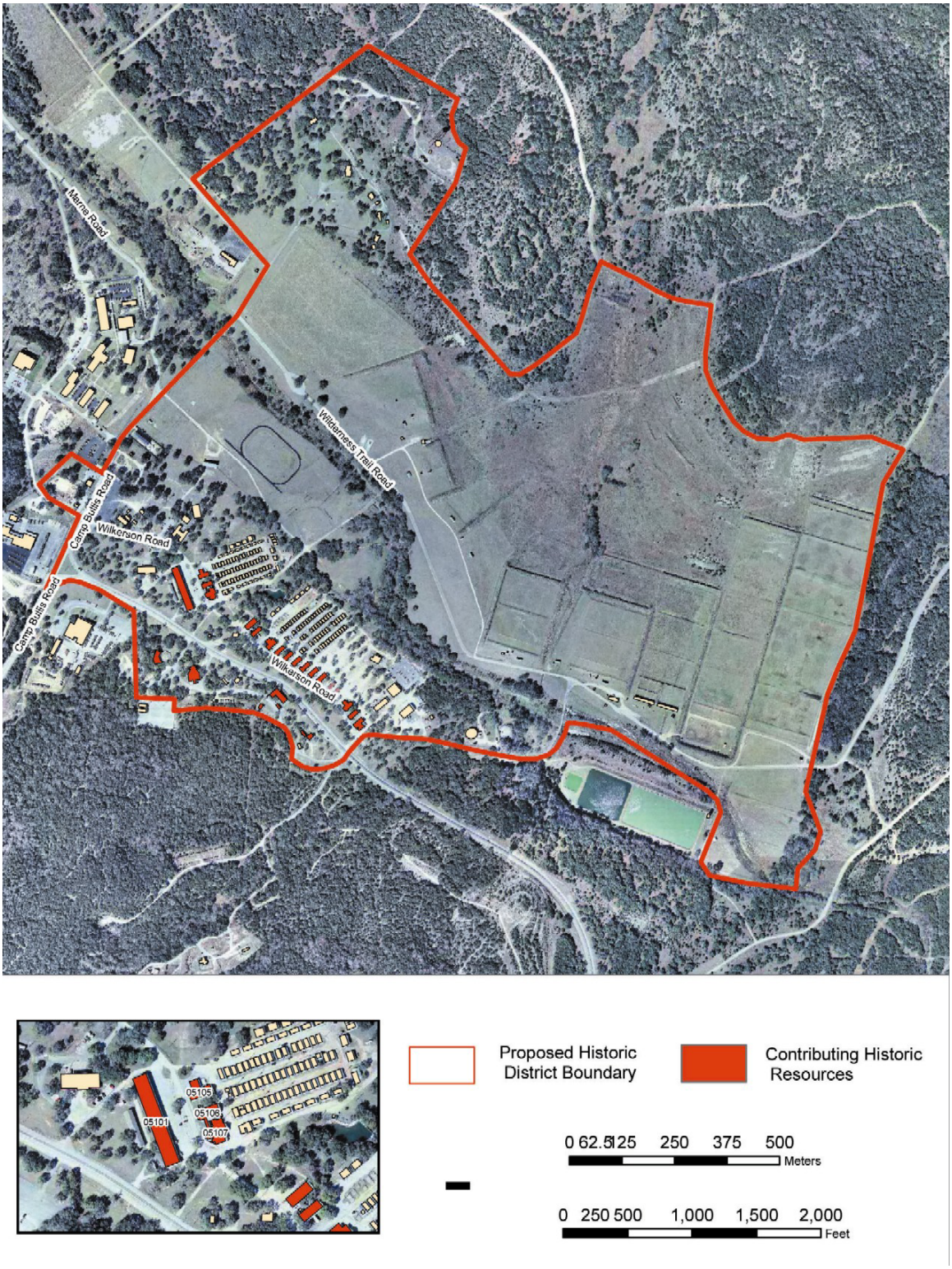
Military use of Camp Bullis begin in 1906, when the impracticalities of weaponry training at the nearby Army post of Fort Sam Houston prompted the creation of an adjunct reservation. Since that time the property has been used for military training purposes and contains archeological resources associated with that history. Military-related archeological sites at Camp Bullis include World War I and World War II era site training features (i.e., bunkers and encampments), cisterns, and trash pits.

To date, most of the undisturbed parcels of Camp Bulllis have been surveyed for archeological resources with over 280 archeological sites recorded, the vast majority of which (220+) are not eligible for listing in the NRHP. Within the ROI for construction elements of this EA (i.e., new building and parking lot), archeological survey has not been undertaken. The cantonment area is likely heavily disturbed from previous construction and operational use and the likelihood for intact archeological resources to be identified is limited. However, it should be noted that the proposed action is within an area that once supported late 19$^{th}$ and early 20$^{th}$ century farming and military training; consequently, archeological remains may be encountered.

### 3.2.2.2 *Historic Buildings and Structures*

Camp Bullis contains a significant number of historic properties, both buildings and structures that are important to military and local history, as detailed in the historic context: *Camp Bullis: A Military Training Facility in the Southern Department and Eight Corps Area, 1906-1946* (Freeman 1993). The majority of the facility's architectural resources are contained within the cantonment area, which has been identified as a potential NRHP District (Freeman 1998) (Figure 3-1). Planned in 1929–1930 and completed between 1930 and 1945, the cantonment is composed of residential, administrative, maintenance and repair, recreation and entertainment, service/support, and warehouse buildings and structures. Its contributing components are exemplary of a War Department philosophy formulated during the late 1920s that employed the tenets of city planning rather than the austere and rigid approach taken by military designers of the past. The cantonment is also historically associated with the Civilian Conservation Corps and Works Progress Administration work programs that, through construction projects at Camp Bullis and other military and public facilities across the country, provided unemployment relief to many

**Figure 3-1. Proposed NRHP District at Camp Bullis**



Americans during the economic depression of the 1930s. Additionally, the cantonment is significant for its association with military training programs during the late 1930s through World War II, in particular the Triangular Division concept tested in 1937 and 1939 by the Second Infantry Division at Camp Bullis.

All of the properties identified in this EA for rehabilitation and/or demolition are contributing elements of the potential historic district at Camp Bullis and are eligible for inclusion in the NRHP. Building 5101, a former warehouse built in 1930 is a one-story gabled roof, utilitarian style, wood-framed building. It is in good condition according to a recent architectural and structural conditions study performed by Fisher and Heck Architects, Inc., in July of 2004 (John 2004). Defining features of Building 5101's historic design are its long rectangular plan, raised concrete foundation, corrugated iron sheet clad exterior (vertically applied), brick firewalls (dividing the length of the structure) wood frame windows, wood paneled doors, gabled roof configuration, and roof ventilators and air vents. The building's design and type of construction is consistent with other properties within the potential historic district.

Buildings 5105, 5106, and 5107, also built in 1930 (with subsequent additions) are simple, gabled roofed, wood-framed structures. Buildings 5106 and 5107 are connected by a covered, screened-in walkway. All three properties functioned as mess halls and kitchens and were sited immediately to the southwest of troops housed in tents and hutments. Similar in construction to other mess halls and kitchens at Camp Bullis (Buildings 5114-5120, 5122-5124), their historic appearance is defined by their gabled roofs with plumb-cut exposed rafter ends, roof ridge vents, wood siding, wood windows, and wood paneled doors. As with the other kitchens and mess halls, these three properties were placed in a parallel alignment, creating a visual effect along the adjacent roadway. Although, it should be noted that Buildings 5105, 5106, and 5107 are physically separated from Buildings 5114-5120 and Buildings 5122-5124 by a gap in development and a stand of trees. This lessens the visual connection between these buildings and the main line of kitchens and mess halls.

Of the three properties, Building 5105 retains a greater level of historical integrity. Buildings 5106 and 5107, on the other hand, have been the subject of additions (such as the addition of entrance canopies, exposed mechanical ducts and vents, and a large covered loading area at the rear) as well as incompatible alterations (replacement of some windows and doors) diminishing the properties historical appearance. Recent architectural and structural condition assessments (Geo-Marine, 2005a; Geo-Marine, 2005b; Geo-Marine, 2005c) of 5105, 5106, and 5107, found all three buildings to have experienced general deterioration consistent with exposure to the elements and maintenance issues. Rehabilitation of any of the three properties to a state of utility would be moderately expensive.

#### 3.2.2.3 *Traditional Resources*

Traditional resources can include archeological sites, burial sites, ceremonial areas, caves, mountains, water sources, plant habitat or gathering areas, or any other natural area important to a

culture for religious or heritage reasons. Significant TCPs are subject to the same regulations, and are afforded the same protection as other types of historic properties.

To date, no Native American or non-Native American TCPs have been identified within the boundary of Camp Bullis. However, to ensure that any concerns relating to the construction aspects analyzed within this EA are adequately considered, consultation with local Native American groups would be initiated. Currently identified cultural groups include the Tonkawa, the Lipan Apache, the Mescalero Apache, the Coahuiltecan, the Wichita, the Comanche, the Kiowa/Kiowa Apache, and the Caddo Indian tribes.

#### 3.2.2.4 *Historic Landscape (Visual Resources)*

The historic landscape of Camp Bullis consists of natural and man-made landscape features that give each particular environment, such as the historic cantonment area, its visual characteristics. Consequently, visual sensitivity is a key factor in assessing how important a visual effect may be on the historic landscape and whether or not it represents a significant impact. The following discussion of the visual resources of Camp Bullis was derived from studies performed by Historic Architect Joe Freeman and detailed in the ICRMP for the Camp Bullis Training Site (Peter et al. 2001).

Since its establishment as a military training site, Camp Bullis has taken into account the landscape features of its immediate physical context and has created its own distinct landscape. The natural contours of the terrain and structure of the vegetation provided the basic framework from which to design the location and positioning of facilities. Target ranges, the landing field, and baseball diamonds were located on the broad, grassy level areas and the gentle slopes north and northeast of Salado Creek, while water storage facilities and the Commander's residence were located on the hill north-northwest of Salado Creek. Stone, native to the Camp Bullis area, was used in building foundations, walls, bridges, and culverts and was a prominent visual element that created a park-like, natural appearance for the Camp. Buildings placed along meandering roads seemed perfectly integrated with the local topography. Retention of many live oak trees that were on-site in the 1930s reinforced this sense of integration between man-made and natural features.

When the cantonment area was primarily developed, between World War I and World War II, much of its design, consisting of the individual buildings, building groups, and landscaping, appears to have been influenced by the ideas of city planner and War Department consultant George B. Ford who eschewed older foursquare, austere planning in favor of "sheer beauty of layout." The cantonment, where enlistees and officers lived, was sited south of the creek and also provided office space, entertainment, warehousing, and other facilities. In general, latrines and enlisted men's housing, which consisted of tents on concrete slabs, were located closest to the creek on the downhill slope. Uphill, messes (dining tents) bound Wilkerson Road on the southwest. The messes—permanent wood frame buildings on rock foundations—and the natural area between Wilkerson Road and the road called Officers Line formed a boundary separating

enlisted men from officers' tents. The permanent buildings were situated on the most elevated slopes in the cantonment area.

The impact of the architecture of the cantonment area is subtle and relies on repetition, careful and logical siting, and a close relationship between buildings and structures and the natural setting. Green spaces were designed and used for recreation, screening, and as buffers between areas with specific uses. Trees were selectively retained to provide shade and had the effect of reducing the visual impact of the large concentration of buildings in the cantonment.

The visual aspects of the cantonment area described above, including its landscape and hardscape, are contributing elements of the potential Camp Bullis Cantonment Historic District, which reflects the history and development of the camp between 1930 and 1945.

## 3.3 HAZARDOUS MATERIALS AND WASTE MANAGEMENT

### 3.3.1 Definition of Resource

Hazardous and toxic materials include substances that, because of their quantity, concentration, physical, chemical, or infectious characteristics, may present substantial danger to public health or environment when released or improperly managed. Hazardous materials are those substances defined by the Comprehensive Environment Response, Compensation and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), and the Toxic Substances Control Act.

Army policy for hazardous waste management and waste-related pollution prevention is outlined in Section 5.0 of AR 200-1, Environmental Protection and Enhancement. The Installation Restoration Program (IRP) is the basis for response actions at military installations for sites contaminated with hazardous waste under the provisions of CERCLA and SARA.

The ROI includes those buildings proposed for renovation and demolition (5101, 5105, 5106, and 5107) and the immediately surrounding land. Hazardous materials and waste issues of concern within the ROI include asbestos containing materials (ACMs), lead-based-paint, and potential ground water and/or soil contamination from inactive landfills.

### 3.3.2 Affected Environment

#### 3.3.2.1 *Asbestos-Containing Materials*

Asphalt shingles, composed of asphalt-impregnated felts or fiberglass mats, have been used extensively at Camp Bullis as an inexpensive and relatively durable roofing material. Asbestos is the name for a group of natural minerals that separate into strong, fine, heat-resistant fibers. The material has been used in a variety of forms for thermal protection, acoustical and decorative purposes, boiler and pipe insulation, and construction materials and appliances. When asbestos degrades into microscopic fibers, it becomes a health hazard. This can happen when ACMs are disturbed, typically during renovation or demolition of older structures. Degraded or crumbled

asbestos is termed "friable" asbestos. Once emitted to the atmosphere, asbestos fibers can remain suspended in the air for long periods and, when inhaled, can easily lodge in body tissues and may cause cancer.

Buildings most likely to contain friable asbestos are those built or remodeled between 1945 and 1986. Further renovation or demolition of such buildings containing asbestos has the potential to release asbestos fibers into the air. Asbestos fibers could be released by the disturbance or damage to building materials such as pipe and boiler insulation, acoustical ceiling, sprayed-on fire-proofing, and other materials used for sound proofing, insulation, siding, roofing, and flooring. The Army asbestos policy is established in Section 8.0 of AR 200-1, *Environmental Protection and Enhancement*. When removal of asbestos is required, Camp Bullis follows industry and Army standards for the encapsulation, removal, and disposal of any ACM.

#### 3.3.2.2 *Lead-Based Paint*

Lead is a highly toxic metal that was used for many years in paint on and around buildings. Lead may cause a range of health effects, from behavioral problems and learning disabilities to seizures and death. Removal of paint at Camp Bullis requires coordination with the Camp Bullis Environmental Division. If testing has determined the presence of lead-based paint, the paint removal process must comply with regulations set forth for such hazardous materials. Paint removal procedures should be strictly adhered to in all matters, including abatement of the hazardous condition and protection of workers and the public.

Army lead hazard management policy is outlined in Section 4.6 of AR 200-1, Environmental Protection and Enhancement. All buildings at Camp Bullis constructed or renovated prior to 1978 have the potential to contain lead-based paint. Demolition or renovation of structures typically requires removal of the lead-containing materials. In such cases, Camp Bullis follows industry and Amy standards for the encapsulation, removal, and disposal of the lead-based paint or lead-containing materials.

#### 3.3.2.3 *Groundwater and Soil Contamination*

Contamination is tracked and mitigated through the defense site Environmental Restoration Tracking System (DSERTS). There are six DSERTS sites at Camp Bullis: two landfills, an unexploded munitions site, a surface impoundment/lagoon, a waste treatment plant, and an oil-water separator. With the exception of the two landfills and munitions site, the other areas were investigated and it was determined that no further action was required.

A Hazardous Waste Permit (Resource Conservation and Recovery Act [RCRA] Part B Permit HW-50335) was issued to Camp Bullis in 1997 pertaining to the management of hazardous waste at the Open Burn/Open Detonation unit (munitions site). This is the only regulated hazardous waste management unit at Camp Bullis. Groundwater monitoring results have indicated the presence of VOCs, such as acetone, benzene, carbon disulfide, explosives (Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine [HMX], Hexahydro-trinitro-triazine [RDX], and nitrobenzene), and

barium. In accordance with permit requirements, groundwater was sampled and the results confirmed the presence of VOCs, semi-volatile organic compounds, metals, explosives, dioxins/furans, perchlorate, and sulfide (Army 2003).

Two inactive landfills, Site-17 and Site-08, are present at Camp Bullis. These landfills are located outside the cantonment area: Site-08 is located in the central area of Camp Bullis near Lewis Valley Road; and Site-17 is located in the southwestern area of Camp Bullis near Marne Road and Bullis Road.

## 3.4 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

### 3.4.1 Definition of Resource

Socioeconomic analyses generally include detailed investigations into the prevailing social and economic conditions of a community of interest. Such investigations examine the population, income, employment and housing characteristics of an area. The prevailing social and economic conditions may be affected by the implementation of a proposed Federal action. Additionally, populations of special concern as defined in EO 12898 *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (February 1994) are examined to determine whether impacts fall disproportionately upon these populations.

EO 12898 requires a Federal agency to "make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high human health or environmental effects of its programs, policies, and activities on minority populations and low income populations." A message from the President concerning EO 12898 stated that Federal agencies should collect and analyze information concerning a project's effects on minorities or low-income groups, when required by NEPA. If such investigations find that minority or low-income groups experience a disproportionate adverse effect, then avoidance or mitigation measures are to be taken.

A population is considered a minority population if it is composed of one or more of certain population groups (American Indian or Alaskan Native, Asian or Pacific Islander, Black, not of Hispanic origin, or Hispanic) and those groups exceed 50 percent of the population in an area. A minority population percentage of the affected area that is meaningfully greater than the minority population percentage in the general population is also considered a minority population. Race and ethnicity are two separate categories of minority populations. A minority population can be defined by race, by ethnicity, or by a combination of the two distinct classification. Definitions of the various races as used in census data and Executive Orders are presented in Appendix B.

Each year the U.S. Census Bureau (USCB) defines the national poverty thresholds, which are measured in terms of household income dependent upon the number of persons within the household. Individuals falling below the poverty threshold ($17,603 for a household of four in 2000) are considered low-income individuals. USCB census tracts where at least 20 percent of

the residents are considered poor are known as poverty areas (USCB 1995). When the percentage of residents considered poor is greater than 40 percent, the census tract becomes an extreme poverty area.

The ROI for a socioeconomic analysis depends upon the context and intensity of the proposed action and its alternatives. For a minor construction project census tract level analysis in the context of a more regional setting is appropriate. The Camp Bullis socioeconomic ROI includes Census Tract 191600, which captures almost all of Camp Bullis and the adjacent Camp Stanley recreational area in the context of the Bexar County (San Antonio) region. It should be noted that this census tract contains an unusually low population given the lack of structures intended for permanent residential occupancy on Camp Bullis and Camp Stanley recreational area; in 2000 only 16 residents were enumerated for this census tract (USCB 2002). Given the unusual circumstance of such a small data set, the inclusion of adjacent census tracts is warranted.

The ROI for an environmental justice analysis depends upon the anticipated effects an action might have on particular resource areas. An analysis conducted to determine whether air quality impacts are disproportionate would necessarily have a different ROI from one examining whether water quality impacts are disproportionate. However, a threshold question for an economic justice analysis would be whether an action has an impact (i.e., a significant effect).

### 3.4.2 Affected Environment

The relevant datasets for assessing the socioeconomic setting of Camp Bullis is the San Antonio Metropolitan Statistical Area (MSA) demographic characteristics and those of Camp Bullis and its adjacent census tracts. The MSA consists of Bexar, Comal, Guadalupe, and Wilson counties. The City of San Antonio lies within Bexar County and Camp Bullis lies predominantly in Bexar County with a minor amount of acreage at the north end of the post lying in Comal County. All data discussed below are derived from the 1990 and 2000 Census of Population and Housing and the most recent local area personal income data (1990/2000) from the Bureau of Economic Analysis (BEA). A full discussion of the data is presented in Appendix B.

The Camp Bullis dataset includes USCB Census Tract 191600, block group 1, which contains Camp Bullis, and adjacent census tracts[1] and block groups[2.]. The population within these combined census tracts containing the Camp Bullis ROI increased 87.56 percent between 1990 and 2000, while the combined block groups increased 203.21 percent during this period (USCB 1993, 2002).

[1] USCB 2000 Census Tracts immediately outside Camp Bullis include 191804, 191805, 191803, 182101, and 310700.

[2] USCB 2000 Census block groups immediately outside Camp Bullis include block groups 1 and 2 in Census Tract 191804, block group 2 in Census Tract 191805, block groups 1-3 in Census Tract 191803, block group 1 in Census Tract 182101, and block group 2 in Census Tract 310700.

#### 3.4.2.1 *Population and Demographics*

The population within the San Antonio MSA increased considerably between 1990 and 2000. During this ten year period, the population grew from approximately 1.3 million to 1.6 million residents, or about 22 percent. Census data also show that the area surrounding Camp Bullis is experiencing a growth rate that is faster than that of Bexar County or the MSA as a whole. Neither the combined census tracts surrounding Camp Bullis nor the block groups would be considered a concentrated minority area.

#### 3.4.2.2 *Income and Employment*

Median personal income levels increased within all household types in the ROI between 1990 and 2000. The largest nominal percent changes were observed in the San Antonio MSA. The census tracts surrounding Camp Bullis indicate a considerable degree of affluence when compared to the San Antonio MSA or Bexar County.

Earnings data indicate that personal income within the San Antonio MSA is $41.1 billion (BEA 2002). Bexar County accounts for $36.3 billion of that total (BEA 2002). The vast majority of that income is from non-farm sources; farm income was $74 million during this period (BEA 2002). During the period of 1990–2000, only federal, civilian earnings decreased in both the San Antonio MSA and Bexar County which may reflect the base closings and mission realignments that have occurred during these years (BEA 2002).

The poverty rate in Bexar County is 15.9 percent, while that in the MSA is 15.1 (USCB 1993, 2002). Within the Camp Bullis ROI, the 2001 poverty rate within the combined census tracts was 3.01 percent, and within the combined block groups, it was 2.18 percent in 2000 (USCB 2002). This is significantly below the MSA or Bexar County averages; therefore, the census tracts surrounding Camp Bullis are not considered a poverty area.

## 3.5 BIOLOGICAL RESOURCES

### 3.5.1 Definition of Resource

Biological resources include living, native, or naturalized plant and animal species and the habitats within which they occur. These resources are divided into three major categories: 1) vegetation, 2) wildlife including mammals and bird species, and 3) threatened, endangered, or sensitive species. Biological resources at Camp Bullis are managed through an Integrated Natural Resources Management Plan (INRMP) (Army 2005).

The ROI for biological resources is the cantonment area where the proposed construction and demolition activities would occur. Specifically this includes the immediate area around buildings 5101, 5105, 5106, and 5107.

## 3.5.2 Affected Environment

### 3.5.2.1 *Vegetation*

Camp Bullis is located on the southern edge of the Edwards Plateau near the junction of three vegetation zones: the Blackland Prairie, South Texas Plains, and Edwards Plateau. The combination of these zones produces a diversity of plant communities including open grasslands and prairies intermixed with oak/juniper savannas and oak/juniper/mesquite thickets. Camp Bullis vegetation is dominated by oak trees (*Quercus spp*.) and ashe juniper (*Juniperus ashei*) thickets interspersed with oak savannas (Army 2005). Approximately 59 percent of Camp Bullis is covered with dense stands of ashe juniper with a sparse ground cover. Approximately 32 percent of Camp Bullis is oak/grassland savannas and 7 percent is open grassland with scattered patches of trees. The remainder of installation acreage consists of developed areas, roads, buildings, and training facilities (Army 2005). The ROI is located within the developed cantonment area and consists of oak trees, ashe juniper, and landscaping shrubs and grasses.

### 3.5.2.2 *Wildlife*

Camp Bullis supports a variety of wildlife. Small mammals present at the base include the fox squirrel (*Sciurus niger*), black-tailed jackrabbit (*Lepus californicus*), eastern cottontail (*Sylvilagus floridanus*), opossum (*Didelphis virginiana*), and armadillo (*Dasypus novemcinctus*). Rodents are common and provide a food supply for carnivores such as the ringtail cat (*Bassariscus astutus*), striped skunk (*Mephitis mephitis*), eastern and western spotted skunks *(Spilogale putorius* and *S. gracilis*, respectively*)*, gray fox *(Urocyon cinereoargenteus*), bobcat (*Lynx rufus*), and coyote (*Canis latrans*). Occasionally, larger predators such as the mountain lion (*Felis concolor*) and ocelot (*Felis pardalis*) inhabit the Edwards Plateau region (Army 2005).

Oberholser (1974) listed 358 species of birds known or presumed to exist in or around Camp Bullis. An unofficial list of bird sightings on Camp Bullis includes approximately 203 species. Songbirds, raptors, and shorebirds as well as waterfowl and upland gamebirds can be found at Camp Bullis.

### 3.5.2.3 *Threatened and Endangered Species*

The Endangered Species Act (16 USC 1531-1543) requires Federal agencies to determine the effects of their actions on endangered or threatened species of fish, wildlife, plants, and critical habitats, and to take steps to conserve and protect these species. AR 200-3 prescribes the Army's policies, procedures, and responsibilities for managing natural resources, in support of the military mission and consistent with sound principles of resource stewardship.

Three bird species are of concern to Camp Bullis: the golden-cheeked warbler (*Dendroica chrysoparia*), black-capped vireo (*Vireo atricapillus*), and whooping crane (*Grus americana*). The golden-cheeked warbler is found throughout Camp Bullis, while distribution of the black-capped vireo is patchy. The whooping crane is considered migratory and may use Camp Bullis from October through November during southern migration and from April through May on the

northern migration. No natural habitat to support these threatened and endangered birds exists within the ROI.

There are no threatened or endangered plant, reptile, mammal, fish, invertebrate, or amphibian species documented at Camp Bullis that would be of concern in this ROI. Since the project area is located in a developed area of the base, there is no natural habitat present to support those threatened and endangered species that could occur at the installation.

# 3.6 EARTH RESOURCES

## 3.6.1 Definition of Resource

Earth resources at Camp Bullis include geology, topography and soils. Geology describes the bedrock materials, mineral deposits, and fossil remains. Topography describes the elevation and slope of the terrain, as well as other visible features. The soils are divided into soil associations. The caves and karst features at the installation are addressed also. Caves are hollow or natural passages under the earth. Karst features refer to sinkholes, fissures, underground streams, and caverns.

Because of the limited scope of the project, the ROI is the immediate construction area and the soils along the drainage pathway from the site.

## 3.6.2 Affected Environment

### 3.6.2.1 *Geology*

Camp Bullis lies on the edge of the Edward's Plateau in a hilly region called the Texas Hill Country. A broad area of faulted limestone known as the Balcones Escarpment forms the southern and eastern edge of the Edwards Plateau, and crosses the southeastern corner of Camp Bullis.

Camp Bullis is underlain primarily by formations of the Trinity Group including the lower and upper members of the Glen Rose Limestone (Texas Department of Water Resources [TDWR] 1983). The Upper Glen Rose, which consists of beds of moderately resistant and massive chalky limestone alternating with beds of less resistant, marly (loose and crumbly) limestone, covers approximately 74 percent of Camp Bullis. The Lower Glen Rose covers 14 percent at the northern edge of the training site. Overlying a small portion of the Glen Rose at the southern edge of Camp Bullis is the Kainer Formation of the Edwards Group (Veni 1998).

### 3.6.2.2 *Topography*

The topography of Camp Bullis consists of numerous hills and valleys that are drained by intermittent streams that flow east and south. Erosional differences between the stratigraphic units of the Upper Glen Rose layers have resulted in the formation of a terrace type of topography. King Ridge (elevation 1,515 ft), Otis Ridge (elevation 1,480 ft), and High Hill (elevation 1,490 ft) are the most prominent landforms on Camp Bullis. Salado Creek and Lewis Creek are the major drainages that direct surface water runoff from Camp Bullis (U.S. Geological Survey [USGS] 1992).

### 3.6.2.3 *Soils*

The predominant soils on Camp Bullis are of the Tarrant and Bracket series. These thin clay soils formed in weathered limestone bedrock. The Tarrant series occurs on gently undulating, one to five percent slopes and consists of stony soils of limestone prairies. The Bracket series is on steeper slopes (12 to 30 percent) and are predominantly clay and loam. Both of these soils are well drained, but have high erosion potential (Natural Resource Conservation Service [NRCS] 1991). The construction and demolition area for all three alternatives is located on gently undulating Tarrant soils (NRCS 1991).

Other soil series on Camp Bullis include Krum, Lewisville, Crawford, Patrick, Venus and Bexar. Two soil complexes occur on Camp Bullis—the Crawford and Bexar and the Trinity and Frio—where each individual soil series is so intermixed with the other that mapping at the scale used precludes breaking them out into discrete units. The Trinity and Frio soils are clay and clay loam and occur in the floodplains of small and large drainages. They are flooded at least once per year and, on Camp Bullis, are found in the Salado Creek drainage. Trinity is the only hydric soil found on Camp Bullis (NRCS 1995).

### 3.6.2.4 *Caves and Karst Features*

The Camp Bullis landform is a typical representative of karst geology. Karst geology is defined as an aggregate of characteristic landforms (lapis, sinkholes) and subsurface features (caves) produced primarily by the dissolution of soluble rocks (Soil Science Society of America [SSSA] 2005). Subsurface karst features (caves) commonly occur in the Edwards Group. On Camp Bullis, caves have been located throughout the installation but are predominately found in the Lower Glen Rose formation and Kainer formation of the Edwards group. As of 1998, 62 caves and 295 other karst features had been identified on Camp Bullis (Veni 1998).

Karst geology presents unique geologic features that have historically provided habitat for early humans, and which currently may provide habitat for unique biological resources; however, there are no caves or other karst features within the ROI for the proposed action or alternatives (Pumphrey 2005).

# 3.7 WATER RESOURCES

## 3.7.1 Definition of Resource

Water resources at Camp Bullis include surface water, groundwater, floodplains and wetlands. Surface water resources include lakes, ponds, rivers, and streams. Groundwater includes subsurface hydrogeologic resources such as aquifers that are used for domestic, agricultural, and industrial purposes. Floodplains are defined as low lying areas that are prone to flooding. A 100-year flood is a flood that has a 1-percent chance of being equaled or exceeded in any given year (Federal Emergency management Agency [FEMA] 2005). Wetland resources can be groundwater and/or surface water driven. The 1987 U.S. Army Corp of Engineers (USACE) Wetland Delineation Manual (1987) specifies three criteria for the identification of wetlands including hydrophytic vegetation, hydric soil, and positive indicators of wetland hydrology. Wetlands are defined by the USEPA and the USACE as:

> Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas (33 CFR 3283 (b) 1984).

Camp Bullis protects the water quality of its watershed through compliance with a number of Federal, state, local, and Department of Defense (DoD) environmental regulations that require the installation to have detailed spill control and response procedures and to implement storm water pollution prevention best management practices (BMP). Camp Bullis maintains specific storm water protection measures including a SWPPP, a spill prevention, control, and countermeasures plan, and a hazardous materials management plan. Compliance with these plans reduces the potential for adverse effects on water quality.

The ROI for surface water resources is the drainage area flowing into Salado Creek, whereas the ROI for groundwater resources is the underlying Trinity aquifer. The ROI for floodplains is the Salado Creek floodplain, and the ROI for wetlands is those areas that are or potentially could be wetlands near the cantonment area that would be affected by storm water runoff.

## 3.7.2 Affected Environment

### 3.7.2.1 *Surface Water*

Six small creeks drain Camp Bullis. The creeks are intermittent in nature, fed primarily by precipitation from storms, and exist as dry streambeds the remainder of the year. Storm water runoff at Camp Bullis flows overland as sheet wash, is collected by these natural channels and streams, and eventually drains into the San Antonio River. In addition, springs along Panther Springs Creek and Lewis Creek periodically produce surface flow for several hundred feet before disappearing into fractures, caves, and sinkholes located in the streambeds (Army 2005).

Salado Creek, the primary surface water drainage on Camp Bullis, is located near the west edge of the installation and drains southeast. Runoff from the project area flows southward into an unnamed drainage that heads northeast to Salado Creek (USGS 1992).

Camp Bullis has three large flood control structures. These structures are not designed to permanently impound large quantities of water; however, they do allow storm water runoff to flow downstream at a controlled rate. There are also several human-made stock ponds and wildlife guzzlers (small water-gathering structures for wildlife) scattered throughout the camp, as well as wastewater holding ponds in the cantonment area (Army 2005). Two semi-permanent ponds are located on Camp Bullis: Pond 22, on Lewis Creek, and Sewell Pond, on an unnamed drainage into Panther Springs Creek (USGS 1992).

#### 3.7.2.2 *Groundwater*

Groundwater beneath Camp Bullis exists in stratigraphic layers that contain enough space for water to move freely. The limestone formations beneath the camp exhibit faults, fractures, and areas of dissolution that contribute to its ability to contain groundwater. Shale, marl, and clay produce confining layers that inhibit groundwater movement; however, if faulting or fracturing displaces these layers, they can provide pathways for groundwater to move (TDWR 1983).

The oldest formations containing groundwater under Camp Bullis are the Travis Peak Formation and Glen Rose Formation. Collectively, these formations make up the Trinity Group, which has been divided into three water-bearing units based on hydraulic continuity. The upper member of the Glen Rose Formation (also known as the Glen Rose Aquifer) makes up the upper member of the Trinity Group Aquifer. The lower member of the Glen Rose Formation is part of the middle member of the Trinity Group Aquifer. The rest of the middle and the lower members of the Trinity Group Aquifer represent the Travis Peak Formation (TDWR 1983). The Edwards Aquifer contains rock younger than the Trinity Group and is restricted to the southeast corner and northern edge of the installation.

Groundwater movement in the Trinity and Edwards aquifers is extremely variable due to the physical characteristics of the rock. Limestone and calcareously cemented sandstone depend on secondary porosity in the form of solution channels, fractures, and faults to transmit groundwater. Water production in these rock types can be erratic, resulting in unpredictable yields at different well locations.

The Edwards Limestone and Glen Rose Formation both outcrop in Camp Bullis. As a result, portions of Camp Bullis recharge both aquifers. The Glen Rose Formation derives its recharge from direct precipitation on the outcrop and streams flowing across the outcrop. The northern portion and southeast corner of the installation provide recharge to the Edwards Aquifer. Stream flow in Salado Creek crosses the Edwards Limestone in the south-central portion of Camp Bullis providing recharge to the Edwards Aquifer. Cibolo Creek at the north end of the facility also recharges the Edwards Aquifer. Camp Bullis obtains its water supply from wells installed in the Upper Trinity (Glen Rose) Aquifer (Army 2005 and TDWR 1983).

#### 3.7.2.3 *Floodplains*

The cantonment area is located adjacent to the Salado Creek floodplain. The drainage for Salado Creek above the cantonment area is approximately 12,350 acres. To minimize severity of downstream flooding, three water retention dams were installed on Camp Bullis. These flood control structures and other natural drainages provide adequate storage and storm water desynchronization to almost eliminate flooding at the installation (Army 2005). Flooding is seldom a problem on Camp Bullis; however, low water crossings are occasionally inundated during storm events.

#### 3.7.2.4 *Wetlands*

Wetlands provide habitat for a variety of fish and wildlife. In addition, wetlands serve a variety of important ecological functions including improving water quality, flood and storm water desynchronization, ground water exchange, support of down-gradient base flows, and shoreline stabilization.

According to the U.S. Fish and Wildlife Service (USFWS), there are approximately 112 wetland systems that include 88.7 acres of wetlands and 41.7 acres of deepwater habitat, on the installation (USFWS 1999). Using the USFWS classification system, the two types of wetland systems on Camp Bullis are palustrine and lacustrine (Cowardin et al. 1979). Most of the palustrine systems are excavated or diked impoundments that are inundated briefly following large storms. Lacustrine systems are also intermittently flooded and only contain water following large storms. One of these palustrine wetlands appears to be on the drainage just downslope from the project area, but its wetland status was not confirmed as part of this analysis (USGS 1992).

## 3.8 HUMAN HEALTH AND SAFETY

### 3.8.1 Definition of Resource

Safety topics considered for this proposed action include: the risk associated with standard construction and demolition activities and equipment use; the risk associated with renovation and demolition of facilities with potential ACM and lead-based paint; and operation and maintenance of machinery. Safety concerns from hearing loss are discussed in Section 3.9.

The ROI for safety is the construction and demolition sites associated with the proposed consolidated dining facility, specifically, Buildings 5101, 5105, 5106, and 5107.

### 3.8.2 Affected Environment

The Army observes standard occupational health and safety measures that are standard practices throughout the construction industry, required by law and incorporated into contract documents. Such measures include mandating the use of personal protective equipment (hardhat, eye protection, hearing protection) as well as development of safety plans, ongoing use of risk assessments and periodic safety audits and standdowns. All demolition and construction

activities are required to be conducted in accordance with Occupational Safety and Health Administration (OSHA) and National Institute of Occupational Safety and Health requirements (29 CFR). These overall safety standards are refined specifically for Army operations pertaining to construction and day-to-day operation and maintenance activities conducted on Camp Bullis by requiring them to be performed in accordance with supplemental Army safety regulations and standards prescribed by Army Occupational Safety and Health requirements. Prior to demolition of facilities, ACM, or ACM which could become friable during demolition, must be removed and disposed of in accordance with the National Emission Standards for Hazardous Air Pollution (40 CFR 61, Subpart M) and other applicable Federal, state, and local requirements (AR 420-70). Building demolition debris containing lead-based paint must be characterized and disposed of in accordance with Federal, state, and local solid waste management requirements (AR 420-70 and AR 200-1).

The Army Safety Program prescribes policies and procedures to protect and preserve Army personnel and property against accidental loss (AR 385-10). It provides for public safety incident to Army operations and activities, and safe and healthful workplaces, procedures, and equipment. Commanders of installations are required to apply OSHA and other non-Army regulatory or consensus safety and health standards to military-equipment, systems, operations, or workplaces as is practicable. Whenever possible, commanders evaluate the level of safety provided by established safety and occupational health standards to determine if additional safeguards are required. All workplaces are inspected at least annually using Standard Army Safety and Occupational Health Inspections procedures.

## 3.9 NOISE

### 3.9.1 Definition of Resource

Noise is sound that, if loud enough can induce hearing loss and, that can be undesirable if it annoys humans due to interference with ordinary daily activities, such as communication or sleep. A human's reaction to noise varies according to the duration, type and characteristics of the source, distance between the source and receiver; receiver's sensitivity; background noise level; and time of day.

Sound is a series of vibrations transmitted through a medium (such as air or water) that is perceived by humans. Sound is measured by accounting for the energy level represented by the amplitude (volume) and frequency (pitch) of those vibrations. The decibel (dB) is the standard unit of measure for sound. The sound (energy) level represented by a given decibel value is often weighted to make it more relevant to sounds that the human ear hears especially well; an A-weighted decibel (dBA) is used to characterize the sound levels to which the human ear responds especially well by emphasizing mid-frequencies and de-emphasizing the low and high frequencies. Sound levels are further described using metrics that reflect the intensity of the sound pressure at a given moment in time or the average exposure to sound over an extended period of time.

The measure of the maximum sound pressure at a given instant and known distance is referred to as sound pressure level (SPL). For example, an aircraft with jet engines overflying at 100 feet typically would have a measured peak SPL of 120 dBA. However, that peak sound level falls fairly rapidly as the aircraft moves away from the receiver. Therefore, to describe the effects from repetitive overflights, a measure is necessary that incorporates the number of overflights and the intensity of the noise produced. One of the most common ways to describe ambient noise exposure over an extended period of time is as a day-night average sound level (DNL) measured in decibels (dB). This is a cumulative metric that accounts for the total sound energy occurring over a 24-hour period with a 10 dB penalty added to those noises occurring between the hours of 10 pm and 7 am, when most people sleep and are most sensitive to noise.

To account for these varied reactions to sound and based on scientific studies confirming its validity, the Federal government has selected the DNL as its common metric to describe noise exposure when describing and assessing noise from aircraft overflights, range operations, highway road noise, and other, similar discontinuous but repetitive occurrences. The DNL metric has been adopted by the U.S. Department of Housing and Urban Development (HUD), the Federal Aviation Administration (FAA), the USEPA, and the Department of Defense (DoD) as a common standard for assessing noise levels for compatibility with land uses, health and human safety, and effects on wildlife. Within the DoD, a program that assesses noise related specifically to aircraft and range operations has been developed and adopted by its services, including the Army.

The DoD Air Installation Compatible Use Zone (AICUZ) program outlines compatible land uses by first, predicting noise exposure zones or contours that would result from normal operations at a particular place, and then by recommending land uses that are ordinarily considered compatible with the predicted noise exposure level for those locations underlying the noise contours (DoD 1977; Army 1999). Despite its title, the DoD AICUZ program addresses sources of noise from more than aircraft operations; it anticipates and requires modeling and predicting noise exposure from sources other than aircraft noise, most notably from operation of small arms ranges and impact areas. The Army's Installation Environmental Noise Management Program (IENMP) is that service's implementation of the DoD directive to assess and disclose noise created by operations on an installation with the goal of preventing the encroachment of incompatible uses on the surrounding areas in a way that ultimately compromises the viability of the installation.

The Army's IENMP sets out three noise zones and a land use planning zone, using A-weighted DNL levels:

- Noise Zone III (Land with a predicted noise exposure greater than 75 DNL)
- Noise Zone II (Land with a predicted noise exposure equal to or greater than 65 DNL but less than or equal to 75 DNL)
- Noise Zone I (Land with a predicted noise exposure less than 65 DNL)

- Land Use Planning Zone (A subset of Noise Zone I, this is land with a predicted noise exposure between 60 DNL and 65 DNL)

Within a given zone of noise exposure, certain land uses are considered acceptable or unacceptable. For example, residential uses are normally not considered compatible with a predicted noise exposure in excess of 65 DNL and an office use is not considered compatible in an area having a predicted noise exposure greater than 80 DNL (Federal Interagency Committee on Urban Noise [FICUN] 1980). Predicted noise exposure contours are specifically developed for each Army installation that has flying activities and weapons ranges and are based on the locations and intensities of the activities on the installation; the contours are released to the surrounding jurisdictions to guide their land use planning or are used to guide facilities planning on Army posts and camps.

Apart from noise associated with aircraft and range operations, Federal and local governments have established noise guidelines and regulations for the purpose of protecting citizens from potential hearing damage and from various other adverse physiological, psychological, and social effects associated with noise. Occupational safety and health regulations are a primary method of enforcing these guidelines and standards.

#### 3.9.1.1 *Hearing Loss*

The potential for permanent hearing loss arises from direct exposure to noise on a regular, continuing long-term basis (16 hours a day for 40 years) to levels above 75 DNL. Based on a USEPA report (1974), hearing loss is not expected in people exposed to 75 DNL or less. The Federal Interagency Committee on Noise (FICON) states that hearing loss due to noise: 1) may begin to occur in people exposed to long-term noise at or above 75 DNL; 2) will not likely occur in people exposed to noise between 70 and 75 DNL; and 3) will not occur in people exposed to noise less than 70 DNL (FICON 1992).

#### 3.9.1.2 *Noise Interference*

Elevated noise levels can potentially interfere with speech, cause annoyance, or disturb sleep. Annoyance resulting from noise exposure is typically measured via community surveys where the level of tolerance can vary greatly among individuals (USEPA 1974). It is estimated that 13.5% of the population exposed to 65 DNL will be highly annoyed, while 37% will be highly annoyed if exposed to a 75 DNL (USEPA 1974). Research also indicates that the “type of neighborhood” a person inhabits influences their noise annoyance level with instances of noise complaints being greater for those living in rural areas than in suburban or urban residential areas (Schomer 2001).

Interior noise levels are typically lower than exterior levels due to the attenuation of the sound energy by the structure, with the amount of noise level reduction provided by a building being dependent on the type of construction and the number of openings such as doors, windows, chimneys, and plumbing vents. The approximate reduction in interior noise is 15 dBA when windows are open and 25 dBA for closed windows (USEPA 1974).

#### 3.9.1.3 *Region of Influence*

The ROI for a noise assessment is a function of the type of action proposed. For a small to medium sized construction project, the ROI seldom would extend more than one-half mile beyond the construction site boundaries for the proposed action or any of its action alternatives. Therefore, the ROI for the dining facility renovation or construction would generally be the cantonment area of Camp Bullis.

### 3.9.2 Affected Environment

The noise environment at Camp Bullis consists of noise created from the operation of small arms ranges, the use of explosive simulators in training areas and ranges, the use of explosives during quarrying and training exercises, and from aircraft noise. Other sources of noise include vehicle noise, routine operation of equipment and machinery (e.g., generators, HVAC), and operation of construction equipment.

#### 3.9.2.1 *Small Arms and Explosive Simulator Ranges*

The primary source of noise at Camp Bullis and its surroundings is from range operations rather than from aircraft operations. This environment is fully described in the post's most recent Environmental Noise Management Plan (ENMP), released in 1999 (Army 1999). The predominant source of noise on Camp Bullis is from the operation of its small arms ranges and from the firing of large caliber weaponry from vehicles and aircraft into the Camp Bullis impact area. The use of explosive simulators in training areas is also a notable contributor to the noise environment. Other sources of noise include explosives used in quarrying operations and in training military engineering units, as well intermittent construction noise and traffic noise.

The 1999 ENMP was developed by modeling the predicted noise exposure that would occur from the expenditure of small arms ammunition over the course of a typical year; for example, the use of over 2.1 million 5.56 mm rounds and over 2.0 million 7.62 mm rounds, along with various other types of ammunition over the course of a year on Camp Bullis' ranges, was modeled. Additional modeling to develop predicted noise exposure contours that would result from the use of large caliber weapons and explosive simulators was also a part of the study.

#### 3.9.2.2 *Aircraft Noise*

Aircraft noise at Camp Bullis is generated by C-130 Hercules cargo aircraft using the Combat Assault Landing Strip (CALS) at the northern end of the post in Training Area 12 and by helicopter traffic using the various landing sites and helipads on Camp Bullis. In 1983, the Army conducted an onsite measurement study for the CALS operations for a typical "busy day" consisting of four operations per day. Since DNL is a measure of both intensity and frequency of occurrence, the combination of a relatively quiet aircraft (compared to a jet aircraft) and a relatively low frequency of operations does not generate a Noise Zone II or III contour. The study found that this level and type of operation would generate a predicted noise exposure point (located 200 meters north of the airstrip centerline) of 59.1 DNL (Army 1999).

Helicopter noise on Camp Bullis stems from three main activities: transport of soldiers and materiel, concentrated at the southern end of the installation; air drop (parachute) operations, concentrated at the northern end of the installation; and, medical evacuation training conducted as part of the combat medic training given at Camp Bullis in its various training areas. Of the three types, medical evacuation training is the most common.

UH-60 Blackhawk helicopter flights generally originate from Kelly Army Heliport on Fort Sam Houston and follow preferred routes under air traffic control procedures established for these operations. One of the preferred routes for helicopter traffic to enter the airspace above Camp Bullis follows Military Highway, a road leading from the southern installation boundary to the cantonment area. From there, the helicopter either prepares to land at a helipad located near the Parade Ground or it moves on to one of the training areas on post. Helicopter operations at Camp Bullis, while not unusual, are not frequent enough to generate a predicted noise exposure above 65 DNL. Therefore, no noise exposure contours at 65 DNL or greater that would be associated with helicopter operations are plotted, exist, or are released to local governments under the DoD AICUZ program. Generally, the operations average fewer than two per day (Army 1999).

#### 3.9.2.3 *Predicted Noise Exposure Zones on Camp Bullis*

The resultant predicted noise exposure from routine range operations and aircraft overflight is shown as a set of noise nodes that are centered about the small arms ranges, the grenade launcher range and the heavy demolition ranges. Camp Bullis' cantonment area lies at the southern end of the post and is generally located in the vicinity of Military Highway and Camp Bullis Road. The closest ranges to the cantonment are Ranges 1-8, which are small arms ranges on which M-16 (5.56 mm rounds) and M-60 (7.62 mm rounds) machine guns are fired. These ranges lie approximately 1,000 feet north of the 5100 block of buildings (the site of the proposed action and its alternatives) on Camp Bullis. The predicted noise exposure in the vicinity of this block of buildings is less than 65 DNL or Noise Zone I (Army 1999).

#### 3.9.2.4 *Construction Noise*

Noise associated with the operation of machinery on construction sites is typically short-term, intermittent, and highly localized. The loudest machinery generally produces peak SPLs ranging from 86 to 95 dBA at 50 feet from the source (Table 3-4). It is important to note that the peak SPL range for construction equipment noise does not take into account the ability of sound to be reflected/absorbed by nearby objects, which would further reduce noise levels. Additionally, interior noise levels would be reduced by 18 to 27 dBA due to the noise level reduction properties of the building's construction materials (FAA 1992).

The DNL that results from operating construction equipment is a function of the frequency, duration, and time of day during which the activity occurs. For example, a bulldozer that generates 95 dBA at 50 feet and that is operating continuously for 365 days from 6 am to 10 pm for an entire year would be operating during all 15 "day" hours and one "night" hour of the DNL metric. Such operation would create a predicted noise exposure of 64 DNL.

**Table 3-4. Peak Sound Pressure Level of Heavy Equipment from a Distance of 50 Feet**

| Equipment | Noise Generated* |
|---|---|
| Bulldozer | 95 dBA |
| Scraper | 94 dBA |
| Front Loader | 94 dBA |
| Backhoe | 92 dBA |
| Grader | 91 dBA |
| Crane | 86 dBA |

* Noise from a single source
Source: Reagan and Grant 1977

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# 4.0 ENVIRONMENTAL CONSEQUENCES

## 4.1 AIR QUALITY

### 4.1.1 Alternative 1 – No Action

Implementation of the No Action Alternative would not have an effect on the current conditions of the air quality in the region. Ambient air conditions would remain as described in Section 3.1.

### 4.1.2 Alternative 2 – Preferred

Implementation of the preferred alternative would have temporary, minor impacts to the local air quality. No impact to the regional air quality or attainment status is expected. Primary sources of air pollutants would be fugitive dust ($PM_{10}$) from soil disturbance and combustion emissions (VOC, CO, $SO_2$, and $NO_x$) from mobile heavy-duty diesel- and gasoline-powered equipment and trucks. Implementing abatement measures such as proper maintenance of construction vehicles, limiting the size of the disturbance area, and watering unpaved roadways, as necessary, would minimize potential impacts.

USEPA (1985) states that factors for fugitive dust emissions from heavy construction or demolition operations can be conservatively expressed in terms of total suspended particulate (TSP). The TSP emissions from construction-based activities depend on a number of considerations including, but not limited to:

- The number and type of vehicles (earthmovers);
- The construction activity (demolition and debris removal, site preparation, and general construction);
- The materials used (asphalt, concrete);
- The controls utilized to minimize fugitive emissions from area sources (watering exposed soils); and
- The installation of asphalt pavement.

Watering the disturbed area twice per day with approximately 3,500 gallons per acre would reduce TSP emissions by as much as 50 percent (USEPA 1995). A $PM_{10}$ emissions factor of 0.6 ton per acre per year was estimated for this activity with sufficient watering (USEPA 1995). For the assessment of air quality impacts, the proposed construction and demolition site is estimated to be approximately two acres resulting in approximately 1.2 tons of $PM_{10}$ released for the duration of the project. Fugitive particle emissions due to the heavy construction activities are the only anticipated stationary sources of emissions during the construction or renovation phase of the proposed action. Because the grading, demolition, and construction activities would be close to the ground, the estimated concentration of $PM_{10}$ would drop off rapidly within a short distance

of the project site; as a result, temporary impacts would be local and not regional. The estimate is an average, and at any instant, the actual concentration could likely be higher or lower based on local wind conditions.

Combustion emissions from construction equipment exhausts were estimated using emissions factors for diesel-powered off-road equipment (USEPA 1991). The USEPA assumes that 230 working days (8 hours per day) are available per year for construction (accounting for weekends, weather, and holidays) (USEPA 1995). Criteria pollutant emissions associated with the implementation of this alternative would not exceed the applicability thresholds specified for nonattainment areas (see Table 3-2). Since the area is in near nonattainment, the analysis is performed as if the area were in nonattainment. The proposed action would not be regionally significant because the emissions do not exceed 10 percent or more of the nonattainment area's total emissions for that particular pollutant (Table 4-1).

**Table 4-1. Total Combustion Emissions Compared to Regional Emissions**

| Criteria Pollutant | Regional Total Emissions[1] (AQCR 217) (tpy) | Proposed Emissions (tpy) | Percent Total (%) | Regionally Significant |
|---|---|---|---|---|
| **$NO_x$** | 26,800 | 2.6995 | 0.01007 | No |
| **$SO_2$** | 25,800 | 0.9151 | 0.00354 | No |
| **VOCs** | 1,900 | 0.6073 | 0.03196 | No |
| **CO** | 7,700 | 3.9640 | 0.05148 | No |

Notes:
[1] TCEQ 2002
tpy = tons per year

## 4.1.3 Alternative 3

Implementation of Alternative 3 would not result in significant impacts to air quality within the project area or surrounding areas. Potential impacts would be similar to those described in Alternative 2. Primary sources of air pollutants would be fugitive dust ($PM_{10}$) from soil disturbance and combustion emissions (VOC, CO, $SO_2$, and $NO_x$) from mobile heavy-duty diesel- and gasoline-powered equipment and trucks. Implementation of abatement measures such as proper maintenance of construction vehicles, limiting the size of the disturbance area, and watering unpaved roadways, as necessary, would minimize potential impacts.

A $PM_{10}$ emissions factor of 0.6 ton per acre per year was estimated for this activity with sufficient watering as described in Alternative 2 (USEPA 1995). For assessment of air quality impacts, the proposed construction and demolition site is estimated to be slightly larger than two acres (emissions estimated for 2.5 acres) resulting in 1.5 tons of $PM_{10}$ released for the duration of the project. The estimated concentration of $PM_{10}$ would drop off rapidly within a short distance of the project site; as a result, temporary impacts would be local and not regional.

Combustion emissions from construction equipment exhausts were estimated using emissions factors for diesel-powered off-road equipment (USEPA 1991). The USEPA assumes that 230 working days (8 hours per day) are available per year for construction (accounting for weekends, weather, and holidays) (USEPA 1995). Criteria pollutant emissions associated with the implementation of this alternative do not exceed the applicability thresholds specified for nonattainment areas (see Table 3-2). Since the area is in near nonattainment, the analysis is performed as if the area were in nonattainment. The proposed action would not be regionally significant because the emissions do not exceed 10 percent of more of the nonattainment area's total emissions for that particular pollutant (Table 4-2).

**Table 4-2. Total Combustion Emissions Compared to Regional Emissions**

| Criteria Pollutant | Regional Total Emissions[1] (AQCR 217) (tpy) | Proposed Emissions (tpy) | Percent Total (%) | Regionally Significant |
|---|---|---|---|---|
| **NOx** | 26,800 | 3.3437 | 0.01247 | No |
| **SO2** | 25,800 | 1.1335 | 0.00439 | No |
| **VOCs** | 1,900 | 0.7522 | 0.03958 | No |
| **CO** | 7,700 | 4.9099 | 0.06376 | No |

Notes:
[2] TCEQ 2002
tpy = tons per year

## 4.2 CULTURAL AND VISUAL RESOURCES

### 4.2.1 Alternative 1 – No Action

Selecting the No Action Alternative would result in no ground-disturbing activities and no demolition or construction activities; therefore, there would be no alteration or disturbance of the NRHP-eligible properties, the potential historic district, or unidentified archeological resources. However, under utilization of NRHP-eligible properties, such as Building 5101, typically results in poor maintenance from lack of use. Such a scenario would impact one or more of the historic properties, as already evidenced by the poor condition of Building 5107.

### 4.2.2 Alternative 2 – Preferred

Under the preferred alternative, Camp Bullis would adaptively reuse Building 5101, a former warehouse, as a dining facility. Building 5101 is a historic property eligible for listing in the NRHP and a contributing element of the potential Camp Bullis Cantonment Historic District. The building has already been identified as an excellent candidate for adaptive reuse following an architectural and structural conditions study performed by Fisher and Heck Architects, Inc. and WSC, Inc. (consulting structural engineers), in July of 2004 (John 2004). This study concluded that the building was in good structural condition and with renovation, could physically and

economically be converted into a dining hall. The SHPO has also strongly recommended the adaptive reuse of this property during prior consultations.

Three other NRHP-eligible historic properties, Buildings 5105, 5106, and 5107, would be demolished to make way for the dining facility's 10,000 SF parking area. None of the three properties are unique to the cantonment. Specifically, there are numerous examples of other kitchens and mess halls (Buildings 5114-5120, 5122-5124) of similar construction and design sited just south of Building 5107. Two of these buildings, 5106 and 5107, have been the subject of incompatible additions that have greatly impacted the historical integrity of the two properties. Additionally, Building 5107 is in poor condition.

The proposed rehabilitation would benefit Building 5101, since it would be conducted in a manner that retains the historic character of the building. Additionally, such an action would contribute to the reuse and maintenance of a contributing element of the potential historic district. In compliance with the NHPA, Camp Bullis would initiate the Section 106 review process with the SHPO regarding potential effects of rehabilitation. Mitigation measures would be employed to minimize the effects from the adaptive reuse for dining functions. Specifically, the building would be renovated using guidance provided in the *Secretary of the Interior's Standards for Rehabilitation* and relevant Preservation Briefs.

The demolition of Buildings 5105, 5106, and 5107 would have an adverse effect on the potential historic district and would result in the loss of three NRHP-eligible properties. However, the impact of demolition would be mitigated through appropriate documentation, such as Historic American Building Survey recordation or the creation of interpretive signage in the cantonment area. Additionally, historic building materials from the three structures could be salvaged and reused in the repair or rehabilitation of similar historic buildings in the cantonment area. In compliance with the NHPA, Camp Bulllis would initiate the Section 106 review process with the Texas SHPO to determine appropriate mitigation.

An alternative to the demolition of Buildings 5101, 5106, and 5107, that may be explored in consultation with the SHPO, would be the relocation of these facilities to another site on or off post. The deteriorated condition of the three properties, however, may inhibit their relocation. It should also be noted that relocation of the structures would still remove the properties from their original site and the potential historic district.

The loss of Buildings 5105, 5106, and 5107, while having a visual impact on the careful siting of mess halls and kitchens along the adjacent roadway, is not as significant as the impact that might occur from the removal of other nearby historic properties such as the kitchens and mess halls south of Building 5107. Currently, Buildings 5105, 5106, and 5107 are visually separated by mature trees from the other grouping of kitchen and mess halls (Buildings 5114-5120, 5122-5124), which have a greater visual sense of placement.

With regard to the potential impact of the proposed action on unidentified archeological resources, the construction of the parking area would require the ground disturbance of the first two feet of soil. At this depth, it is likely that the soil has already been disturbed by the construction of Building 5105, 5106, and 5107. The likelihood of the discovery of intact archeological resources is low; however, if such a discovery were to occur, Camp Bullis would halt all site activities until an appropriate evaluation of the archeological material could take place in consultation with the Texas SHPO. Spot monitoring of ground disturbing activities by the Camp Bullis Cultural Resources Manager (or other qualified archeologist) during construction would take place to ensure that no archeological resources are impacted.

### 4.2.3 Alternative 3

Under this alternative, four historic properties (5101, 5105, 5106, and 5107) would be demolished to make way for new construction of a dining facility and a 10,000 SF parking area. The loss of Buildings 5101, 5105, 5106, and 5107, on a cumulative level would have an adverse effect on the potential historic district. Specifically, demolition of the four historic properties would create a visible hole within the distinctive plan and careful siting of the cantonment area and would be most detrimental to the architecture and landscape of the potential district. In compliance with the NHPA, Camp Bulllis would consult with the SHPO to mitigate adverse effects in compliance with Section 106 of the NHPA. Mitigation, such as Historic American Building Survey documentation, would likely be costly and time consuming and may not completely rectify the loss of the four properties to the potential historic district. Additionally, it should be noted that prior consultation with the SHPO in 2002 regarding the demolition of Building 5101 was not approved and the SHPO recommended that Fort Sam Houston and Camp Bullis actively seek ways to incorporate the historic building in the design of the new dining facility.

Potential impacts to archeological resources would be similar to those under the preferred alternative described in Section 4.2.2.

## 4.3 HAZARDOUS MATERIALS AND WASTE MANAGEMENT

### 4.3.1 Alternative 1 – No Action

Implementation of the No Action Alternative would not affect existing hazardous materials and waste issues at Camp Bullis. Under this alternative, demolition or renovation of facilities would not occur.

### 4.3.2 Alternative 2 – Preferred

Implementation of the preferred alternative would have minor impacts from hazardous materials and hazardous waste generation. All waste and demolition debris, as well as contaminated soils and/or groundwater, if present, would be managed, handled, and disposed of in accordance with all local, state, and Federal laws and regulations; therefore, no significant impacts are expected to occur with regards to hazardous materials and waste.

The preferred alternative would involve adaptive reuse and expansion of Building 5101, demolition of Buildings 5105, 5106, and 5107, and construction of a parking lot. Hazardous materials used during the proposed construction project would include fuels, paints, glues, asphalt materials, etc. Most of these materials would typically be consumed in their entirety and very little waste would be generated for disposal. Significant amounts of construction-related hazardous materials are not expected, and any hazardous material waste generated during the construction process would be disposed of per all applicable federal, state, and local regulations.

Prior to demolition, the buildings would be screened to determine the presence or potential presence of any hazardous materials or waste, such as asbestos or lead-based paint. Once hazardous waste or elements of concern are identified during the screening process, a detailed inspection would be conducted to determine the extent, the type, and condition of hazardous waste present. Abatement procedures for any hazardous waste or elements of concern present at a demolition site would be accomplished in accordance with all applicable local, state, and Federal laws and regulations before the demolition activities begin. Once abatement or demolition activities begin, disposal of the hazardous waste, debris, and scrap material from demolition activities would occur. The debris from demolition would be sampled for the presence of contaminants before being transported off-site for disposal.

### 4.3.3 Alternative 3

Under Alternative 3, a new dining facility and parking lot would be constructed and Buildings 5101, 5105, 5106, and 5107 would be demolished. As discussed for the preferred alternative, all construction debris, waste and demolition debris, and any disturbed contaminated soils and/or groundwater would be managed, handled, and disposed of in accordance with all local, state, and Federal laws and regulations; therefore, no significant impacts are expected to occur with regards to hazardous materials and waste.

## 4.4 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

A socioeconomic effect from a proposed Federal action would be considered significant if it resulted in:

1. Extensive relocation of residents is required, but sufficient replacement housing is unavailable.

2. Extensive relocation of community businesses, that would create severe economic hardship for the affected communities.

3. Disruptions of local traffic patterns that substantially reduce the levels of service of the roads serving the installation and its surrounding communities.

4. A substantial loss in community tax base.

### 4.4.1 Alternative 1 – No Action

Under the No Action Alternative, no construction activities would occur. The socioeconomic conditions described in Section 3.4 would remain as is and there would be no potential for a disproportionate impact to minority or low-income populations.

### 4.4.2 Alternative 2 – Preferred

The Preferred Alternative, renovating Building 5101 into a dining facility and demolishing Buildings 5105, 5106, and 5107, would result in a slight, temporary increase in economic activity. The project is anticipated to cost approximately $7.1 million. Construction spending would be short-term, with the project duration expected to be between 12-18 months. Therefore, short-term increases in spending and economic flowdown would be expected from implementing this alternative; however, it would be minor and temporary compared to regional economic generation. In a local economy that is generating over $41 billion annually of aggregate personal income as presented in Section 3.4, the project cost and associated spin-off and economic activity multiplier effects are not significant.

The construction project would not require any relocation of residents or commercial enterprises. The level of traffic generated from construction vehicles and workers would be minor and is not expected to alter the levels of service on local roadways, whether on or off Camp Bullis. The community tax base (real estate and sales taxes) would not be appreciably altered; Federally owned real estate is exempt from taxation at the local level. To the extent that construction materials are taxed, a slight benefit would accrue to the taxing jurisdiction.

Since there would be no adverse significant effects anticipated from the proposed action, there would be no disproportionately adverse impacts to minority and low-income populations; therefore, there would be no environmental justice concerns from implementing this alternative.

### 4.4.3 Alternative 3

Implementation of Alternative 3 would have minor, temporary effects that would be similar to those expected for Alternative 2. Because Building 5101 would be demolished rather than renovated and a replacement building constructed on its site, the overall project cost would be somewhat greater, $7.4 million instead of the $7.1 million under the preferred alternative. As with the preferred alternative, however, the effect is negligible in the context of the San Antonio economy.

Similar to the preferred alternative, no residents or businesses would be relocated, the level of service on local roadways is not expected to be changed, and no change to the community tax base would be expected. Because no significant effects are anticipated from this alternative, no disproportionate adverse impacts on minority or low-income populations would be expected.

## 4.5 BIOLOGICAL RESOURCES

### 4.5.1 Alternative 1 – No Action

Implementation of the No Action Alternative would not affect biological resources within the ROI. Under this alternative a new consolidated dining facility would not be constructed.

### 4.5.2 Alternative 2 – Preferred

Under the Preferred Alternative, no significant impacts are expected to occur to vegetation, wildlife, or threatened and endangered species. Temporary disturbance to local wildlife during construction and demolition may occur; however, this disturbance would be considered minimal due to the lack of natural habitat in the immediate area. The ROI is a developed area and does not contain natural habitat for listed species of concern at Camp Bullis. The installation would continue to manage biological resources as described in its INRMP.

### 4.5.3 Alternative 3

Under Alternative 3, no significant impacts are expected to occur to vegetation, wildlife, or threatened and endangered species. Temporary disturbance to local wildlife during construction and demolition may occur; however, this disturbance would be considered minimal due to the lack of natural habitat in the immediate area. The ROI is a developed area and does not contain natural habitat for listed species of concern at Camp Bullis. The installation would continue to manage biological resources as described in its INRMP.

## 4.6 EARTH RESOURCES

### 4.6.1 Alternative 1 – No Action

Selecting the No Action Alternative would not result in impacts to earth resources. No construction or demolition activities would occur; therefore, earth resources would remain as described in Section 3.6.

### 4.6.2 Alternative 2 – Preferred

Implementation of the Preferred Alternative would have minor impacts to earth resources in the ROI from the creation of impervious surfaces. The soils in the ROI have high erosion potential, and if left exposed, gullies and other erosion features could form during storm water runoff events. There are no caves or karst features within the ROI; thus, no impacts are expected to these features.

The construction of the addition to Building 5101 would add 750 SF of rooftop impervious surface to the project area. Design engineering would need to accommodate the additional runoff so that it does not cause erosion or sedimentation in the drainage channels leading to Salado Creek. During construction, the use of BMP such as the installation of silt fencing around the

construction area and diverting water from running through and off the site as described in the SWPPP would limit the erosion of soils on the site.

The demolition of Buildings 5105, 5106, and 5107 would convert 9,413 SF of rooftop to approximately 10,000 SF of paved parking area. Although this would not create an excessive amount of additional runoff, the water would likely be more concentrated to one or two exit points, based on the slope of the asphalt. Water collection or diversion devices would be placed where the water leaves the pavement to prevent creating a gully.

### 4.6.3 Alternative 3

Alternative 3 would have similar impacts to earth resources as described in Alternative 2. The construction of a new paved parking area would have the same storm water runoff concerns. Water collection or diversion devices should be placed where the water leaves the pavement to prevent creating a gully. The demolition of Building 5101 (18,500 SF) and the construction of a new 27,000 SF dining facility would increase rooftop impervious surfaces in the ROI.

## 4.7 WATER RESOURCES

### 4.7.1 Alternative 1 – No Action

Implementation of the No Action Alternative would not affect existing water resources. Under this alternative a new dining facility would not be constructed.

### 4.7.2 Alternative 2 – Preferred

Implementation of the Preferred Alternative would not adversely affect water resources with the use of BMP during construction and demolition. The ROI drains into Salado Creek, which flows into the recharge area for the Edwards Aquifer. It is important to limit sediment flow into the creek, because if sediment settles over the recharge areas, it could have a negative effect on recharge into this regionally important aquifer. Compliance with the existing SWPPP, spill prevention, control, and countermeasures plan, and the hazardous materials management plan would reduce the potential impacts.

The construction of the addition to Building 5101 would add 750 SF of rooftop impervious surface to the project area. Design engineering would need to accommodate the additional runoff so that it does not cause erosion or sedimentation in the drainage channels leading to Salado Creek. During construction, the use of BMPs for erosion control would limit sediment-laden runoff and potential degradation of water quality caused by construction activities.

The demolition of Buildings 5105, 5106, and 5107 would convert 9,413 SF of rooftop to approximately 10,000 SF of asphalt-paved parking area. Implementing guidelines from the SWPPP would reduce potential impacts of sedimentation. Using water collection or diversion devices would reduce the magnitude of storm water drainage and the potential for it to produce sediment-laden runoff.

### 4.7.3 Alternative 3

Implementation of Alternative 3 would not adversely affect water resources with the use of BMPs during construction and demolition. The impervious rooftop coverage would increase by 4,206 SF; however, the additional runoff generated during intense storms would not cause flooding or erosion if properly managed. Compliance with the SWPPP, spill prevention, control, and countermeasures plan, and the hazardous materials management plan would reduce the potential impacts. The potential impacts associated with the demolition of the three buildings for the paved parking area would be the same as discussed for Alternative 2.

## 4.8 HUMAN HEALTH AND SAFETY

### 4.8.1 Alternative 1 – No Action

Implementation of the No Action Alternative would result in continued operation of the existing dining facilities. These facilities are in disrepair and pose numerous safety and sanitation concerns for the welfare of civilian personnel and troops, but of primary concern is possible food contamination. The current setup of the dining facilities does not promote a safe environment for storage and washing of the field feeding containers used to transport food to the troops in training. Continued operation of these facilities in their current state could have negative impacts to the safety and health of civilian employees and personnel dining at the facilities as well as troops receiving field feedings in the training areas.

### 4.8.2 Alternative 2 – Preferred

Implementation of the Preferred Alternative would have positive impacts for the safety and welfare of personnel and troops dining at the facility. Consolidating the dining operations into one facility as proposed would improve the sanitation conditions for storing, preparing, and serving meals and field feedings. The proposed facility would be constructed to meet all safety and health guidelines required by Army and OSHA regulations. The Army Safety Program would be implemented to protect workers from potential accidents and injuries from use of heavy industrial grade kitchen equipment.

The proposed renovation and demolition activities would be conducted in accordance with Army and OSHA regulations to protect workers from exposure to lead-based paint and ACM. No safety concerns during these activities are expected with adherence to these guidelines.

### 4.8.3 Alternative 3

Implementation of Alternative 3 would have the same positive impacts to safety and welfare from improved sanitation conditions as described in Alternative 2. The proposed construction and demolition activities would be conducted in accordance with existing Army Regulations and OSHA standards and no safety concerns are expected.

## 4.9 NOISE

When evaluating noise effects, several aspects were examined, including: 1) the degree to which noise levels generated by construction, demolition, and renovation activities were higher than the ambient noise levels; 2) the degree to which there is hearing loss and/or annoyance; and 3) the proximity of noise-sensitive receptors (i.e., residences) to the noise source. An environmental analysis of noise includes the potential effects on the local population. Such an analysis estimates the extent and magnitude of the noise generated by the proposed action. To best evaluate the noise effects resulting from the proposed action or its alternatives, it was assumed that construction and demolition activities would produce higher noise levels than those associated with renovation (minor repairs, general maintenance, or upgrading existing conditions).

An action would have a significant effect if it would produce noise levels high enough to cause occupants or construction workers to suffer permanent hearing loss, would create an unacceptable living condition for residents, or would alter the existing Noise Zone II (65 DNL – 75 DNL) predicted noise exposure contours on Camp Bullis.

As noted in Section 3.9, noise associated with construction activities does not typically generate a predicted noise exposure of 65 DNL or greater because even at extremely high rates of operation, the equipment itself doesn't generate noise so intense that averaged over a year would produce a 65 DNL. The primary source of ambient noise modeled by the Army is from aircraft operations and use of munitions on ranges, both of which tend to mask noise from construction activities. Since the contribution to the DNL by construction generated noise would be minimal (<64 DNL) and the noise source from construction equipment will not be located in close enough proximity to the existing 65 DNL contour to cause it to shift, neither the proposed action nor any alternatives would shift the existing 65 DNL contour. Therefore, a detailed analysis of construction noise was not performed. In addition, adherence to standard Army Occupational Safety regulations minimizes the risk of hearing loss to construction workers. These regulations require hearing protection along with other personnel protective equipment and safety training.

### 4.9.1 Alternative 1 – No Action

Under the No Action Alternative, no construction activities would occur. The separate dining facilities (Buildings 5105, 5106, and 5107) would remain as is, and the existing warehouse (Building 5101) would not be renovated. The existing noise environment described in Section 3.9 would remain as is.

### 4.9.2 Alternative 2 – Preferred

The preferred alternative, renovating Building 5101 into a dining facility and demolishing Buildings 5105, 5106, and 5107, would result in a slight, temporary change to the conditions described in Section 3.9. However, the change to the existing conditions would not be a significant effect.

There would be a slight beneficial effect from relocating dining facility operations from the existing dining facility location; Building 5101 and its occupants would be further removed (by about 200 feet) from a predicted noise exposure contour, Noise Zone II (65 DNL – 75 DNL). This zone is associated with the small arms ranges located approximately three-quarters of a mile northeast of the existing dining facilities.

Increased noise would temporarily occur as a result of the preferred alternative. It would result from construction and demolition activities inherent in the preferred alternative. These activities would produce noise generated by heavy equipment and vehicles involved in demolition, site preparation, foundation preparation, construction, and finishing work. There is a possibility of short-term, localized speech interference or annoyance near construction zones but no significant impacts are expected. Additionally, a renovation project typically produces less overall noise compared to construction of a new building, since much of the noise is contained and attenuated within the building being renovated. Noise-sensitive receptors would only be exposed to construction noise intermittently and only for the duration of the renovation project; therefore, an extended disruption of normal activities is not anticipated.

### 4.9.3 Alternative 3

Implementation of Alternative 3, demolishing Buildings 5101, 5105, 5106, and 5107 and constructing a new building on the former site of Building 5101 and a parking area on the former sites of Buildings 5105, 5106, and 5107, would result in a slight, temporary change to the conditions described in Section 3.9. However, similar to effects noted for the preferred action, the change to the existing conditions would not be significant.

There would be a slight beneficial effect from relocating dining facility operations from the existing dining facility location; the new building and its occupants would be further removed (by about 200 feet) from a predicted noise exposure contour, Noise Zone II (65 DNL – 75 DNL). This zone is associated with the small arms ranges located approximately three-quarters of a mile northeast of the existing dining facilities.

The demolition and construction noise increases would be similar to those described above for the preferred action; however, a marginally higher noise level would be expected than would occur from the preferred action because new construction rather than renovation is proposed.

# 5.0 CUMULATIVE IMPACTS

## 5.1 DEFINITION

CEQ regulations stipulate that the cumulative effects analysis within an EA should consider the potential environmental impacts resulting from "the incremental impacts of the action when added to other past, present, and reasonably foreseeable actions regardless of what agency or person undertakes such other actions" (40 CFR 1508.7). CEQ guidance in Considering Cumulative Effects affirms this requirement, stating that the first steps in assessing cumulative effects involve defining the scope of the other actions and their interrelationship with the proposed action. The scope must consider geographic and temporal overlaps among the proposed action and other actions. It must also evaluate the nature of interactions among these actions.

Cumulative effects most likely arise when a proposed action and other actions are expected to occur in a similar location or during a similar time period. Actions overlapping with or in proximity to the proposed action would be expected to have more potential for a relationship than those more geographically separated. Similarly, actions that coincide, even partially, in time would tend to offer a higher potential for cumulative effects.

The scope of the cumulative effects analysis involves both the geographic extent of the effects and the time frame in which the effects could be expected to occur. For this EA the ROI includes the cantonment area of Camp Bullis. Beyond determining that the geographic scope and time frame for actions interrelate with the proposed action, the analysis employs the measure of "reasonably foreseeable" to include or exclude other actions. For the purposes of this analysis, public documents prepared by Federal, state and local government agencies form the primary sources of information regarding reasonably foreseeable actions. Documents used to identify other actions included notices of intent for EISs and EAs, management plans, land use plans, other NEPA studies, and economic and demographic projections.

## 5.2 PAST, PRESENT, REASONABLY FORESEEABLE FUTURE ACTIONS

The activities described here serve to highlight major influences in the area and to provide perspective on the contribution to any impacts generated by the proposed action.

The Army Garrison Commander at Fort Sam Houston proposes to increase training operations currently conducted at Camp Bullis by approximately 15 percent. The types of training activities and the existing training areas would remain the same, but the intensity of the training would increase.

## 5.3 CUMULATIVE EFFECTS ANALYSIS

The proposed increase in training activity would further justify the need for updating and consolidating the present dining facilities and field feeding operations. The increased demand for dining services would be accommodated if the proposed action is adopted and a new dining facility is constructed.

The new dining facility and future increased operations at Camp Bullis would result in increased use of the historic cantonment area, which has been identified as a potential National Register eligible historic district. Effects would only be cumulative and adverse to the historic district if the actions involve demolition of historic buildings, structures, or landscape features and/or alterations that violate the *Secretary of the Interior's Standards for Rehabilitation*, and/or the construction of new facilities that are insensitive to the proposed historic district. Currently, the preferred alternative would have an adverse effect on the proposed NRHP district (the removal of Buildings 5105-5107). The adverse effect of the preferred alternative can be mitigated by appropriate documentation following Section 106 consultation with the Texas SHPO. However, the impact of the preferred alternative combined with other demolition and/or modification to historic properties (that are not sensitive to the historic character of the building, structure, or landscape) and/or the erection of inappropriate new facilities can cumulatively impact the proposed NRHP District. To avoid such impacts, proposed future actions would need to be designed in a manner sensitive to the character of the district and its contributing properties. Such projects would be coordinated with the Texas SHPO.

Greater cumulative impacts would occur under Alternative 3 (which involves the demolition of Buildings 5101 and 5105-5107). The third alternative combined with future new construction, modification, and/or demolition within the historic cantonment area could diminish the character of the potential historic district to the extent that it would no longer be eligible for listing in the NRHP. The third alternative, by itself, would have an adverse effect on the potential district, impacting its integrity.

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# 9.0 ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| $\mu g/m^3$ | micrograms per cubic meter |
| ACM | asbestos-containing material |
| AHPA | Archeological and Historic Preservation Act |
| AICUZ | Air Installation Compatible Use Zone |
| AQCR | Air Quality Control Region |
| AR | Army Regulation |
| Army | U.S. Department of the Army |
| ARPA | Archeological Resources Protection Act |
| BEA | Bureau of Economic Analysis |
| BMP | best management practice |
| CAA | Clean Air Act |
| CALS | Combat Assault Landing Strip |
| CEQ | Council on Environmental Quality |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| CFR | Code of Federal Regulations |
| CO | carbon monoxide |
| dB | decibel |
| dBA | decibel (A-weighted) |
| DNL | average day-night sound level |
| DoD | Department of Defense |
| DSERTS | Defense Site Environmental Restoration Tracking System |
| DSEF | Directorate of Safety, Environment, and Fire |
| EA | environmental assessment |
| EIAP | Environmental Impact Analysis Process |
| EIS | environmental impact statement |
| ENMP | Environmental Noise Management Plan |
| EO | Executive Order |
| USEPA | United States Environmental Protection Agency |
| FAA | Federal Aviation Administration |
| FEMA | Federal Emergency Management Agency |
| FNSI | finding of no significant impact |

| | |
|---|---|
| HMX | Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine |
| HUD | Department of Housing and Urban Development |
| ICRMP | Installation Cultural Resources Management Plan |
| IENMP | Installation Environmental Noise Management Program |
| INRMP | Integrated Natural Resources Management Plan |
| IRP | Installation Restoration Program |
| LEP | limited English proficiency |
| MRE | meals ready to eat |
| MSA | Metropolitan Statistical Area |
| NAA | Non-attainment Area |
| NAAQS | National Ambient Air Quality Standards |
| NEPA | National Environmental Policy Act |
| NHPA | National Historic Preservation Act |
| NOI | Notice of Intent |
| $NO_x$ | nitrous oxides |
| NRCS | Natural Resource Conservation Service |
| NRHP | National Register of Historic Places |
| $O_3$ | ozone |
| OSHA | Occupational Safety and Health Administration |
| Pb | lead |
| $PM_{10}$ | particulate matter measuring less than 10 microns in diameter |
| ppm | parts per million |
| RCRA | Resource Conservation and Recovery Act |
| RDX | Hexahydro-trinitro-triazine |
| ROI | region of influence |
| SARA | Superfund Amendments and Reauthorization Act |
| SF | square foot |
| SHPO | State Historic Preservation Officer |
| $SO_2$ | sulfur dioxide |
| SPL | sound pressure level |
| SSSA | Soil Science Society of America |
| SWPPP | Storm water Pollution Prevention Plan |
| TCE | trichloroethylene |

| | |
|---|---|
| TCEQ | Texas Commission on Environmental Quality |
| TCP | Traditional Cultural Properties |
| TDWR | Texas Department of Water Resource |
| TPDES | Texas Pollutant Discharge Elimination System |
| tpy | tons per year |
| TSP | total suspended particulate |
| USACE | U.S. Army Corps of Engineers |
| USC | United States Code |
| USCB | U.S. Census Bureau |
| USFWS | U.S. Fish and Wildlife Service |
| USGS | U.S. Geological Survey |
| VOC | volatile organic compound |

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# APPENDIX A: ECONOMIC ANALYSIS OF ALTERNATIVES

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## COST ANALYSIS OF ALTERNATIVE 2

| Year | Construction | Demolition | Maintenance | Utilities | Total Expenditure | Discount Factor | Present Value | Net Present Value | NPV/Square Foot |
|---|---|---|---|---|---|---|---|---|---|
| 2008 | $ 3,600,000.00 | $ 94,130.00 | | | $ 3,694,130 | 0.975 | $ 3,603,386.25 | | |
| 2009 | $ 3,566,500.00 | $ 96,012.60 | | | $ 3,662,513 | 0.928 | $ 3,399,186.97 | | |
| 2010 | | | $ 103,836 | $ 51,000 | $ 154,836 | 0.883 | $ 136,730.42 | $ 9,445,155.70 | $ 269.86 |
| 2011 | | | $ 105,913 | $ 52,020 | $ 157,933 | 0.840 | $ 132,697.46 | | |
| 2012 | | | $ 108,031 | $ 53,060 | $ 161,091 | 0.799 | $ 128,783.45 | | |
| 2013 | | | $ 110,192 | $ 54,122 | $ 164,313 | 0.761 | $ 124,984.89 | | |
| 2014 | | | $ 112,395 | $ 55,204 | $ 167,599 | 0.724 | $ 121,298.37 | | |
| 2015 | | | $ 114,643 | $ 56,308 | $ 170,951 | 0.689 | $ 117,720.59 | | |
| 2016 | | | $ 116,936 | $ 57,434 | $ 174,370 | 0.655 | $ 114,248.34 | | |
| 2017 | | | $ 119,275 | $ 58,583 | $ 177,858 | 0.623 | $ 110,878.50 | | |
| 2018 | | | $ 121,660 | $ 59,755 | $ 181,415 | 0.593 | $ 107,608.06 | | |
| 2019 | | | $ 124,094 | $ 60,950 | $ 185,043 | 0.564 | $ 104,434.08 | | |
| 2020 | | | $ 126,576 | $ 62,169 | $ 188,744 | 0.537 | $ 101,353.72 | | |
| 2021 | | | $ 129,107 | $ 63,412 | $ 192,519 | 0.511 | $ 98,364.22 | | |
| 2022 | | | $ 131,689 | $ 64,680 | $ 196,369 | 0.486 | $ 95,462.90 | | |
| 2023 | | | $ 134,323 | $ 65,974 | $ 200,297 | 0.463 | $ 92,647.15 | | |
| 2024 | | | $ 137,009 | $ 67,293 | $ 204,303 | 0.440 | $ 89,914.46 | | |
| 2025 | | | $ 139,750 | $ 68,639 | $ 208,389 | 0.419 | $ 87,262.37 | | |
| 2026 | | | $ 142,545 | $ 70,012 | $ 212,557 | 0.398 | $ 84,688.50 | | |
| 2027 | | | $ 145,395 | $ 71,412 | $ 216,808 | 0.379 | $ 82,190.55 | | |
| 2028 | | | $ 148,303 | $ 72,841 | $ 221,144 | 0.361 | $ 79,766.28 | | |
| 2029 | | | $ 151,269 | $ 74,297 | $ 225,567 | 0.343 | $ 77,413.52 | | |
| 2030 | | | $ 154,295 | $ 75,783 | $ 230,078 | 0.327 | $ 75,130.15 | | |
| 2031 | | | $ 157,381 | $ 77,299 | $ 234,680 | 0.311 | $ 72,914.13 | | |
| 2032 | | | $ 160,528 | $ 78,845 | $ 239,373 | 0.296 | $ 70,763.48 | | |

## COST ANALYSIS OF ALTERNATIVE 2 (CONTINUED)

| Year | Construction | Demolition | Maintenance | Utilities | Total Expenditure | Discount Factor | Present Value | Net Present Value | NPV/Square Foot |
|---|---|---|---|---|---|---|---|---|---|
| 2033 | | | $ 163,739 | $ 80,422 | $ 244,161 | 0.281 | $ 68,676.26 | | |
| 2034 | | | $ 167,014 | $ 82,030 | $ 249,044 | 0.268 | $ 66,650.60 | | |

## ASSUMPTIONS:

| | |
|---|---|
| Cost/Square Foot | 290 |
| Additional Costs/Square Foot | |
| Total Space | 18,500 |
| Years of Rehab | 2 |
| Additional Space for Renovation | 750 |
| Discount Rate | 5.1% |
| Inflation Rate FY08 | 1.9% |
| Inflation Rate FY09+ | 2.0% |
| Maintenance/Repairs/Utilities/Square Foot | $ 6.50 |
| Maintenance Base Year Cost | $ 101,800.00 |
| Utilties Base Year Cost | $ 50,000.00 |
| Base Year | 2008 |
| Demolish - square feet | 9,413 |
| Demolition Cost/sq ft. | $ 10.00 |

## COST ANALYSIS OF ALTERNATIVE 3

| Year | Construction | Demolition | Maintenance | Utilities | Total Expenditure | Discount Factor | Present Value | Net Present Value | NPV/Square Foot |
|---|---|---|---|---|---|---|---|---|---|
| 2008 | $ 3,700,000.00 | $ 296,170.00 | | | $ 3,996,170 | 0.975 | $ 3,898,006.84 | | |
| 2009 | $ 3,770,300.00 | $ 302,093.40 | | | $ 4,072,393 | 0.928 | $ 3,779,598.35 | | |
| 2010 | | | $ 103,836 | $ 51,000 | $ 154,836 | 0.883 | $ 136,730.42 | $ 10,120,187.67 | $ 289.15 |
| 2011 | | | $ 105,913 | $ 52,020 | $ 157,933 | 0.840 | $ 132,697.46 | | |
| 2012 | | | $ 108,031 | $ 53,060 | $ 161,091 | 0.799 | $ 128,783.45 | | |
| 2013 | | | $ 110,192 | $ 54,122 | $ 164,313 | 0.761 | $ 124,984.89 | | |
| 2014 | | | $ 112,395 | $ 55,204 | $ 167,599 | 0.724 | $ 121,298.37 | | |
| 2015 | | | $ 114,643 | $ 56,308 | $ 170,951 | 0.689 | $ 117,720.59 | | |
| 2016 | | | $ 116,936 | $ 57,434 | $ 174,370 | 0.655 | $ 114,248.34 | | |
| 2017 | | | $ 119,275 | $ 58,583 | $ 177,858 | 0.623 | $ 110,878.50 | | |
| 2018 | | | $ 121,660 | $ 59,755 | $ 181,415 | 0.593 | $ 107,608.06 | | |
| 2019 | | | $ 124,094 | $ 60,950 | $ 185,043 | 0.564 | $ 104,434.08 | | |
| 2020 | | | $ 126,576 | $ 62,169 | $ 188,744 | 0.537 | $ 101,353.72 | | |
| 2021 | | | $ 129,107 | $ 63,412 | $ 192,519 | 0.511 | $ 98,364.22 | | |
| 2022 | | | $ 131,689 | $ 64,680 | $ 196,369 | 0.486 | $ 95,462.90 | | |
| 2023 | | | $ 134,323 | $ 65,974 | $ 200,297 | 0.463 | $ 92,647.15 | | |
| 2024 | | | $ 137,009 | $ 67,293 | $ 204,303 | 0.440 | $ 89,914.46 | | |
| 2025 | | | $ 139,750 | $ 68,639 | $ 208,389 | 0.419 | $ 87,262.37 | | |
| 2026 | | | $ 142,545 | $ 70,012 | $ 212,557 | 0.398 | $ 84,688.50 | | |
| 2027 | | | $ 145,395 | $ 71,412 | $ 216,808 | 0.379 | $ 82,190.55 | | |
| 2028 | | | $ 148,303 | $ 72,841 | $ 221,144 | 0.361 | $ 79,766.28 | | |
| 2029 | | | $ 151,269 | $ 74,297 | $ 225,567 | 0.343 | $ 77,413.52 | | |
| 2030 | | | $ 154,295 | $ 75,783 | $ 230,078 | 0.327 | $ 75,130.15 | | |
| 2031 | | | $ 157,381 | $ 77,299 | $ 234,680 | 0.311 | $ 72,914.13 | | |

## COST ANALYSIS OF ALTERNATIVE 3 (CONTINUED)

| Year | Construction | Demolition | Maintenance | Utilities | Total Expenditure | Discount Factor | Present Value | Net Present Value | NPV/Square Foot |
|---|---|---|---|---|---|---|---|---|---|
| 2032 | | | $ 160,528 | $ 78,845 | $ 239,373 | 0.296 | $ 70,763.48 | | |
| 2033 | | | $ 163,739 | $ 80,422 | $ 244,161 | 0.281 | $ 68,676.26 | | |
| 2034 | | | $ 167,014 | $ 82,030 | $ 249,044 | 0.268 | $ 66,650.60 | | |
| | | | | | | | | | |

## ASSUMPTIONS:

| | |
|---|---|
| Cost/Square Foot | 270 |
| Additional Costs/Square Foot | |
| Total Space | 18,500 |
| Years of Construction | 2 |
| Additional Space for Renovation | 0 |
| Discount Rate | 5.1% |
| Inflation Rate FY08 | 1.9% |
| Inflation Rate FY09+ | 2.0% |
| Maintenance/Repairs/Utilities/Square Foot | $ 6.50 |
| Maintenance Base Year Cost | $ 101,800.00 |
| Utilties Base Year Cost | $ 50,000.00 |
| Base Year | 2008 |
| Demolish - square feet | 29,617 |
| Demolition Cost/sq ft. | $ 10.00 |

# APPENDIX B: SOCIOECONOMIC ANALYSIS

**RACE:**

Race as defined by the U.S. Census Bureau (USCB 2001) includes:

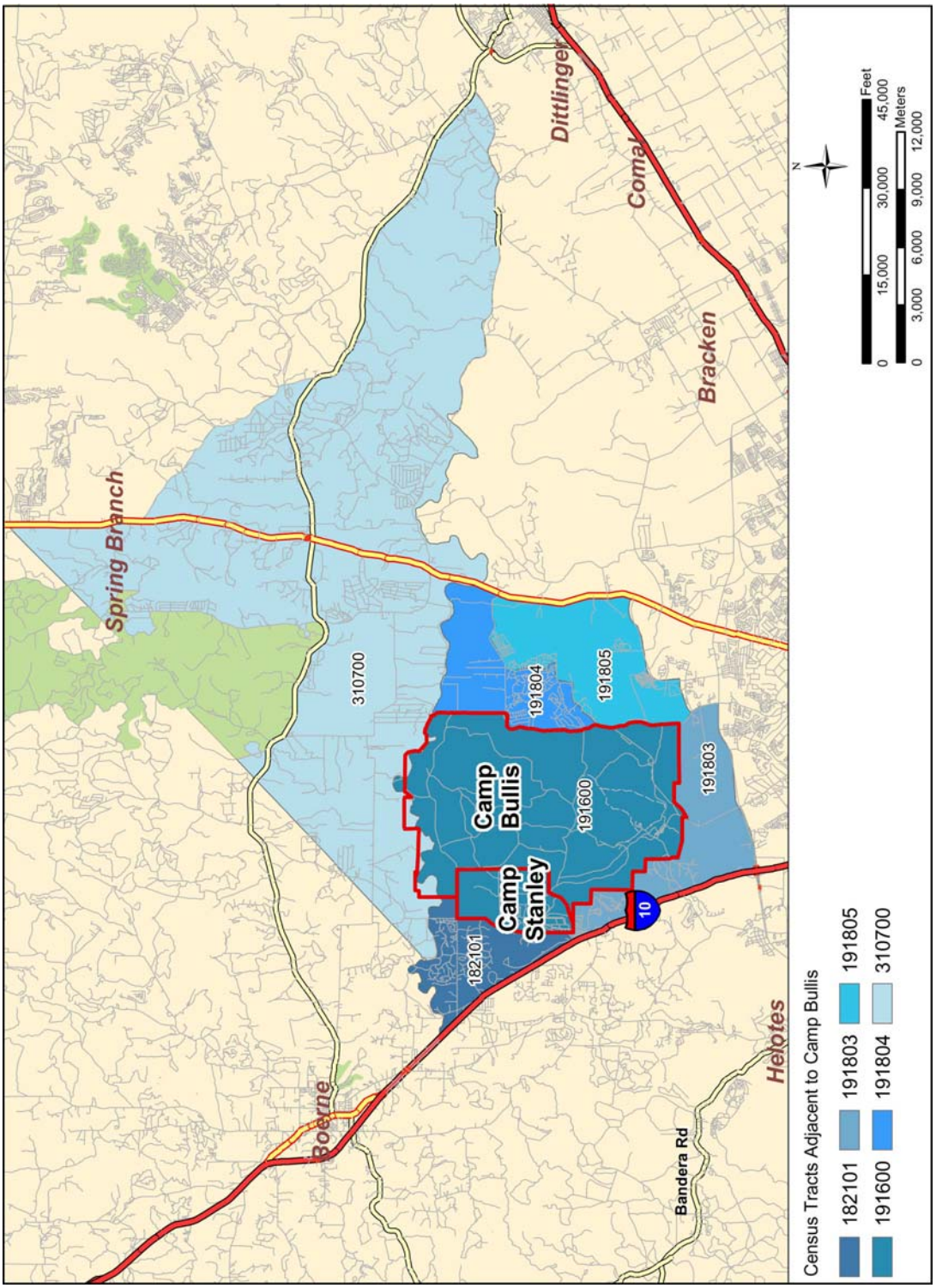
- White – A person having origins in any of the original peoples of Europe, the Middle East, or North Africa;
- Black or African American – A person having origins in any of the Black racial groups of Africa;
- American Indian or Alaska Native – A person having origins in any of the original peoples of North and South America (including Central America) and who maintain tribal affiliation or community attachment;
- Asian – A person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, or the Philippine Islands; and
- Native Hawaiian and Other Pacific Islanders – A person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.

The USCB defines ethnicity as either being of Hispanic origin or not being of Hispanic origin. Hispanic origin is defined as "a person of Cuban, Mexican, Puerto Rican, South or Central America, or other Spanish culture or origin regardless of race" (USCB 2001).
A minority population can be defined in multiple ways; for example, a population under consideration may be demographically composed of 45 percent Black, 6 percent Asian, 40 percent White, and 9 percent all other races or combination of races. Additionally, a minority population can also be defined through ethnicity, where the population under consideration is demographically composed of 80 percent White, 10 percent Black, and 10 percent all other races or combination of races, but has an ethnic composition of 98 percent Hispanic origin and 2 percent of the population not of Hispanic origin. Race and ethnicity each individually total a population of 100 percent.

**ROI:**

The ROI for the socioeconomics analysis is a comparison of the Bexar County characteristics with those of Camp Bullis and adjacent census tracts. Figure B-1 shows the census tracts in the vicinity of Camp Bullis. All data are derived from the 1990 and 2000 Census of Population and Housing and the most recent local area personal income data (1990/2000) from the Bureau of Economic Analysis (BEA).

**Figure B-1. USCB 2000 Census Block Groups within and Surrounding the Camp Bullis ROI**



**Population and Demographics**

The population within the San Antonio Mean Statistical Analysis (MSA) increased considerably between 1990 and 2000. During this ten-year period, the population grew from approximately 1.3 million to 1.6 million residents, or about 22 percent. Table B-1 presents the population data for the San Antonio MSA (Bexar, Comal, Guadalupe, and Wilson counties), and Bexar County, which includes the City of San Antonio and certain unincorporated areas. Table B-2 presents the same data for the census tracts that includes and surrounds Camp Bullis. The data show that the area surrounding Camp Bullis is experiencing a growth rate that is faster than that of Bexar County or the MSA as a whole.

**Table B-1. Demographic Profile of the Fort Sam Houston ROI**

| | San Antonio MSA | | | | Bexar County | | | |
|---|---|---|---|---|---|---|---|---|
| | 1990 | | 2000 | | 1990 | | 2000 | |
| | Number | % | Number | % | Number | % | Number | % |
| White, non-Hispanic | 579,291 | 44.5 | 626,073 | 39.3 | 498,512 | 42.1 | 495,275 | 35.6 |
| Black/African American | 88,709 | 6.8 | 103,110 | 6.5 | 84,600 | 7.1 | 97,705 | 7.0 |
| American Indian or Alaska Native | 4,673 | 0.4 | 10,702 | 0.7 | 4,379 | 0.4 | 9,547 | 0.7 |
| Asian | 16,020 | 1.2 | 24,078 | 1.5 | 15,229 | 1.3 | 22,586 | 1.6 |
| All Other Races or Combination of Races | 613,406 | 47.1 | 828,420 | 52.0 | 582,674 | 49.2 | 767,818 | 55.1 |
| Hispanic | 616,878 | 47.4 | 815,980 | 51.2 | 586,124 | 49.4 | 757,004 | 54.3 |
| Total Minority Population | 722,808 | 55.5 | 966,310 | 60.7 | 686,882 | 57.9 | 897,656 | 64.4 |
| Total Population | 1,302,099 | | 1,592,383 | | 1,185,394 | | 1,392,931 | |

Source: USCB 1993, 2002

**Table B-2. 2000 Demographic Profile of the Camp Bullis ROI**

| **Decennial Census Population** | **Combined Census Tracts** | | **Combined Block Groups** | |
|---|---|---|---|---|
| 1990 | 18,817 | | 8,261 | |
| 2000 | 35,293 | | 25,048 | |
| Percent Increase | 87.6 | | 203.2 | |
| **Race/Ethnicity** | **Number** | **Percentage** | **Number** | **Percentage** |
| White, non-Hispanic | 28,202 | 79.91 | 19,660 | 78.49 |
| Black/African American | 375 | 1.06 | 326 | 1.30 |
| American Indian or Alaska Native | 110 | 0.31 | 56 | 0.22 |
| Asian | 450 | 1.28 | 395 | 1.58 |
| Native Hawaiian or Other Pacific Islander | 25 | 0.07 | 11 | 0.04 |
| All Other Races or Combination of Races | 648 | 1.82 | 511 | 2.04 |
| Hispanic | 5,487 | 15.55 | 4,089 | 16.32 |
| Total Minority Population | 7,091 | 20.09 | 5,388 | 21.51 |

Source: USCB 1993, 2002

The Camp Bullis ROI includes the San Antonio MSA, Bexar County, and USCB Census Tract 191600, block group 1, which contains Camp Bullis, and adjacent census tracts[3] and block groups[4]. The population within the combined census tracts containing the Camp Bullis ROI increased 87.56 percent between 1990 and 2000, while the combined block groups increased 203.21 percent during this period (USCB 1993, 2002). As shown in Table 3-11, neither the combined census tracts nor block groups would be considered a concentrated minority area.

In August 2000, EO 13166 (Improving Access to Services for Persons with Limited English Proficiency [LEP]) was signed. This EO requires that federal agencies improve the accessibility of federal programs to eligible LEP individuals. Additionally, this EO also requires federal agencies to ensure that stakeholders, such as LEP individuals and their representative organizations, recipients, and other appropriate individuals or entities, have an adequate opportunity to provide input. These consultations will assist the agencies in developing an approach to ensure meaningful access by LEP individuals that is practical and effective, is fiscally responsible, is responsive to the particular circumstances of each agency, and can be readily implemented.

In 2000, approximately 40,938 households (7.3 percent) in the San Antonio MSA and 38,043 households (7.8 percent) in Bexar County were considered linguistically isolated[5] (USCB 2002). Within the Camp Bullis ROI, 141 households (1.16 percent) were considered linguistically isolated within the combined census tracts (USCB 2002). Within the combined block groups of the Camp Bullis ROI, 57 households (0.66 percent) were considered linguistically isolated. Table B-3 lists the number of linguistically isolated households per area by language.

[3] USCB 2000 Census Tracts immediately outside Camp Bullis include 191804, 191805, 191803, 182101, and 310700.

[4] USCB 2000 Census block groups immediately outside Camp Bullis include block groups 1 and 2 in Census Tract 191804, block group 2 in Census Tract 191805, block groups 1-3 in Census Tract 191803, block group 1 in Census Tract 182101, and block group 2 in Census Tract 310700.

[5] A linguistically isolated household is one in which no member 14 years old and over (1) speaks only English or (2) speaks a non-English language and speaks English "very well." In other words, all members 14 years old and over have at least some difficulty with English (USCB 2002).

**Table B-3. Linguistically Isolated Households by Area and Language**

| Language | San Antonio MSA | Bexar County | Camp Bullis ROI | |
|---|---|---|---|---|
| | | | Combined Census Tracts | Combined Block Groups |
| Spanish | 37,766 / 92.3% | 35,190 / 92.5% | 107 / 75.9% | 39 / 68.4% |
| Other Indo-European | 1,185 / 2.9% | 940 / 2.5% | 29 / 20.6% | 13 / 22.8% |
| Asian/Pacific Island | 1,780 / 4.4% | 1,706 / 4.5% | 5 / 3.6% | 5 / 8.8% |
| Other | 207 / 0.5% | 207 / 0.5% | 0 / 0.00% | 0 / 0.0% |
| Total Linguistically Isolated Households | 40,938 / 7.3% | 38,043 / 7.8% | 141 / 1.2% | 57 / 0.7% |
| Total Households | 560,293 | 489,252 | 12,142 | 8,572 |

Source: USCB 2002

The average household size within the San Antonio MSA was 2.84; and in Bexar County, it was 2.85 in 2000 (USCB 2002). Average household size in both combined areas for the Camp Bullis ROI was 2.91 persons per household. Extrapolating average household size and the number of linguistically isolated households gives an estimated number of linguistically isolated individuals in all areas (Table B-4).

**Table B-4. Linguistically Isolated Individuals by Area and Language**

| Language | San Antonio MSA | Bexar County | Camp Bullis ROI | |
|---|---|---|---|---|
| | | | Combined Census Tracts | Combined Block Groups |
| Spanish | 107,256 | 100,292 | 311 | 113 |
| Other Indo-European | 3,365 | 2,679 | 84 | 38 |
| Asian/Pacific Island | 5,055 | 4,862 | 15 | 15 |
| Other | 588 | 590 | 0 | 0 |
| Total Linguistically Isolated Individuals | 116,264 | 108,423 | 410 | 166 |
| Total Individuals | 1,592,383 | 1,392,931 | 35,293 | 25,048 |

Source: USCB 2002

## Income and Employment

Median personal income levels increased within all household types in the ROI between 1990 and 2000. The largest nominal percent changes were observed in the San Antonio MSA. Table B-5 lists the 1990 and 2000 median personal incomes across household types and nominal percent changes during this period In the Camp Bullis ROI, the highest median household income in the combined census tracts was $109,424 (USCB Census Tract 191803), while the lowest median household income was $64,953 (USCB Census Tract 310700) (USCB 2002). Within the combined block groups of the Camp

Bullis ROI, the highest median household income was $121,829 (block group 3, USCB Census Tract 191803) and the lowest was $67,619 (block group 2, USCB Census Tract 310700) (USCB 2002). The Per Capita Personal Income (PCPI) ranged within the Camp Bullis ROI combined census tracts from a high of $53,462 (USCB Census Tract 191803) to a low of $26,849 (USCB Census Tract 310700) (USCB 2002). The PCPI within the combined block groups of the Camp Bullis ROI was within a similar range.

**Table B-5. Median Personal Income Levels by Household Type within the ROI**

| | San Antonio MSA | | | Bexar County | | |
|---|---|---|---|---|---|---|
| | 1990 ($) | 2000 ($) | Nominal Percent Change | 1990 ($) | 2000 ($) | Nominal Percent Change |
| Median Household Income | 26,092 | 39,140 | 50.0 | 25,926 | 38,328 | 47.8 |
| Median Family Income | 29,952 | 44,729 | 49.3 | 29,717 | 43,724 | 47.1 |
| Median Nonfamily Income | 16,838 | 25,405 | 50.9 | 17,077 | 25,575 | 49.8 |
| Per Capita Personal Income | 11,865 | 18,518 | 56.1 | 11,827 | 18,363 | 55.3 |

Source: USCB 1993, 2002

Earnings data indicated personal income within the San Antonio MSA increased by approximately 89 percent between 1990 and 2000, to $41.1 billion (BEA 2002a). Within Bexar County, personal income increased by approximately 85 percent during this period to $36.3 billion (BEA 2002a). Nonfarm increased approximately 90 percent during this period in the San Antonio MSA to approximately $41 billion and 85 percent in Bexar County to approximately $36 billion (BEA 2002a). Farm income increased 187 percent to approximately $74 million in the San Antonio MSA and increased 238 percent to approximately $60 million in Bexar County during this period (BEA 2002a). The industries with the greatest increase in earnings between 1990 and 2000 in both the San Antonio MSA and Bexar County were Agricultural Services, Mining, Construction, and Transportation and Public Utilities (BEA 2002a). Only federal, civilian earnings decreased in both the San Antonio MSA and Bexar County (BEA 2002a).

Total full-time and part-time employment increased approximately 35 percent in the San Antonio MSA and approximately 34 percent in Bexar County between 1990 and 2000 (BEA 2002b). Substantial increases in employment were identified in Agricultural

Services, Construction, Transportation and Public Utilities, and Services in both the San Antonio MSA and Bexar County during this period (BEA 2002b). Decreases in employment opportunities were identified in Mining, Federal, Civilian, and Military in both the San Antonio MSA and Bexar County between 1990 and 2000 (BEA 2002b).

The poverty rate decreased approximately 4 percent in Bexar County, to 15.9 percent, and 2.5 percent in the San Antonio MSA, to 15.1 percent, between 1990 and 2000 (USCB 1993, 2002). Within the Camp Bullis ROI, the 2001 poverty rate within the combined census tracts was 3.01 percent and within the combined block groups, it was 2.18 percent in 2000 (USCB 2002). This is significantly below the MSA or Bexar County averages; therefore, the census tracts surrounding Camp Bullis are not considered a poverty area.

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# APPENDIX C: REGULATORY COORDINATION

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