Yakima Training Center, Washington

Base Realignment and Closure (BRAC) Actions

Final Environmental Assessment

16 August 2007

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Final Environmental Assessment

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EXECUTIVE SUMMARY

This Environmental Assessment (EA) analyzes the potential environmental consequences resulting from the proposed U.S. Army Reserve Center (USARC) consolidation action at the Yakima Training Center (YTC), Washington, which is mandated by the Base Realignment and Closure (BRAC) Act of 2005. The proposed action would consist of constructing an approximately 100,000-square-foot Armed Forces Reserve Center (AFRC) to provide an approximately 400-member training facility. The proposed AFRC would include a multi-use classroom, barracks, an administration building, a vehicle maintenance shop, organization unit storage facilities, and parking on existing Army property to accommodate the increase in personnel resulting from the BRAC action. The purpose of the EA is to inform decision makers and the public of the likely environmental consequences of the proposed action. This EA identifies, documents, and evaluates all relevant impacts, conditions, and issues associated with the proposed BRAC realignment actions at YTC.

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). This regulation contains the specific instructions adopted by the Army to implement Section 102(2) of the National Environmental Policy Act (NEPA).

Purpose and Need for the Preferred Alternative

On 8 September 2005, the Defense BRAC Commission recommended various realignment and closure actions within the U.S. Department of Defense. The President approved these recommendations and forwarded them to Congress. Congress did not alter any of the BRAC Commission recommendations, and on 9 November 2005, the recommendations became law. The BRAC Commission recommendations now must be implemented as provided for in the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended.

Accordingly, the Army must implement the realignment and closure actions relevant to YTC. This EA focuses on two action alternatives to move and consolidate the Wagenaar and Pendleton USARCs and the Washington Army National Guard (WAARNG) Ellensburg Readiness Center by constructing a new AFRC at YTC. Both action alternative sites are located along the western boundary of the YTC Cantonment Area adjacent to Tipp Road. Site A, located between the

transient motor pool and the garrison operations area, is the preferred alternative. The second action alternative site is north of Site A at Site E.

Description of the Alternatives

Site A would require deconstruction/demolition of two existing facilities to provide space for the new AFRC, which would be constructed on top of these facilities' footprints, some existing lawn, parking, and a currently unpaved parking lot. Site E is a vacant, undeveloped parcel in the corner of the Cantonment Area.

The no action alternative would not meet the purpose and need for the project, but was evaluated throughout the EA in accordance with NEPA requirements. Under the no action alternative, YTC would not implement the preferred alternative. The operations of the Wagenaar USARC and the Ellensburg WAARNG would continue, and the Pendleton USARC of YTC would not be realigned. Organizations assigned to YTC would continue to train at and operate from the installation. YTC would use its current inventory of facilities, though routine replacement or renovation actions could occur through normal military maintenance and construction procedures as circumstances independently warrant. However, implementation of this alternative is not possible in light of the BRAC recommendations having the force of law. Evaluation of the no action alternative is presented in detail in this EA as a baseline only.

Summary of Environmental Consequences

Implementation of the preferred alternative would have no significant long-term adverse effects on the YTC environment or surrounding area. Potential minor impacts on natural and visual resources from implementation of the preferred alternative would occur within the physical boundaries of the YTC Cantonment Area.

No major long-term adverse impacts on geology or soils, cultural or biological resources, water resources (surface water, groundwater, floodplains, or wetlands), or land use are expected from the preferred alternative. Similarly, no significant adverse impacts on utilities or the associated infrastructure would occur.

Minor adverse impacts on air, noise, transportation, and visual resources would be minimized by Best Management Practices (BMPs). The preferred alternative would not generate disproportionate adverse human or environmental health impacts on minority or low income populations. No adverse socioeconomic impacts on military or regional populations, the

economy, employment, income, housing, community services, or education would result from implementation of the preferred alternative.

BMPs would reduce or eliminate the potential short-term effects on the environment due to deconstruction/demolition and construction activities. Similarly, management procedures, training, disclosure and certification procedures, and disposal regulations are in place to guide personnel in the proper disposal of chlorofluorocarbons (CFCs) and demolition debris potentially contaminated with lead-based paint (LBP) or asbestos-containing material (ACM).

Short-term land use disturbances would result from construction of the preferred alternative. AFRC operations would be consistent with the local surrounding land use. Implementing the preferred alternative would improve facilities in the Cantonment Area but would result in changes in views and nighttime lighting visible to nearby neighbors. The aesthetic character of the Cantonment Area may be improved by removal of the older buildings and construction of new facilities.

Construction and deconstruction/demolition activities for the preferred alternative would potentially produce slight increases in criteria pollutant emissions, but would not affect local or regional air quality. Slight increases in noise levels are expected from construction equipment and increased traffic during AFRC construction.

There would be no significant effects on biologic, cultural, geologic, groundwater, or surface water resources from the preferred alternative. Construction activity would increase the short-term potential for soil erosion. No impact on wetlands or adverse effects on floodplains are expected.

Minor, beneficial socioeconomic effects would occur from the preferred alternative. There would be no significant effects on employment, income, or demographics from the BRAC actions. A minor increase in traffic is expected on drill weekends. The water, wastewater, and electric utility system capacities are adequate to provide for the increased demand expected from the preferred alternative. There would be an increase in the use of petroleum products and in the generation of construction debris, but no significant long-term effect on the hazardous materials and waste management operations is expected.

Construction and operation of the AFRC at Site E would be expected to result in the same level of environmental effects on aesthetics and visual resources, air quality, noise, water and biological resources, socioeconomics, and transportation as that of the preferred alternative. Implementing

this alternative would limit this site's potential use for mobilization activities but would not otherwise affect land use. Localized, temporary disruptions to utility services could occur during construction and installation of additional services, but no long-term effects would be expected. Effects on hazardous and toxic waste and materials management programs at YTC would be expected to be somewhat less than those under the preferred alternative because of the lack of demolition wastes.

The no action alternative provides the baseline conditions for comparison (Table ES-1).

Table ES-1 Summary of Potential Impacts and BMPs

Resource Area	No Action Alternative	Preferred Alternative	Site E Alternative	Best Management Practices	Mitigation Measures
Land Use	▪ No change to existing conditions. ▪ Continued presence of two aged facilities in the Cantonment Area.	▪ No effect on short-term land uses consistent with current land use. ▪ Improved quality of facilities in the Cantonment Area.	▪ Site's potential use for temporary mobilization activities (hutments/tent pads or shelters) would be limited but would have no other effects on land use.	▪ Not applicable.	▪ None needed.
Aesthetics and Visual Resources	▪ No change to existing conditions. ▪ Continued presence of two aged facilities in the Cantonment Area without benefit of modernization.	▪ Improved neighborhood aesthetics with new facilities. ▪ Deconstruction/ demolition of two aged facilities.	▪ Increased outdoor lighting. ▪ Continued presence of two aged facilities in the Cantonment Area without benefit of modernization.	▪ Not applicable.	▪ None needed.
Air Quality	▪ No change to existing conditions.	▪ Potential increase in criteria pollutants during construction and deconstruction/demolition activities. ▪ No significant impacts on local or regional air quality.	▪ Potential increase in criteria pollutants during construction and deconstruction/ demolition activities. ▪ No significant impacts on local or regional air quality.	▪ Dust suppression BMPs implemented during construction.	▪ None needed.
Noise	▪ No change to existing noise environment.	▪ No significant effect on YTC noise environment. ▪ Slight increase in noise from vehicular traffic and construction equipment.	▪ No significant effect on YTC noise environment. ▪ Slight increase in vehicular traffic and construction equipment.	▪ Not applicable.	▪ None needed.

Resource Area	No Action Alternative	Preferred Alternative	Site E Alternative	Best Management Practices	Mitigation Measures
Geology and Soils	▪ No change to soils or existing geologic environment.	▪ Minor soil loss during construction.	▪ Minor soil loss during construction.	▪ Project Dust Control Plan and a Stormwater Pollution Prevention Plan (SWPPP) would be developed to control soil erosion. ▪ BMPs would be designed to meet Washington National Pollutant Discharge Elimination System Construction Stormwater General Permit requirements.	▪ None needed.
Water Resources	▪ No change to existing use of water resources.	▪ No significant effect on existing surface or underground water resources.	▪ No significant effect on existing surface or underground water resources.	▪ Control of erosion and silt in accordance with the updated SWPPP during construction.	▪ None needed.
Biological Resources	▪ No changes to existing biological resources.	▪ No significant effects on biological resources. ▪ No significant impact on wetlands or salmonid fisheries.	▪ No significant effects on biological resources. ▪ No significant impact on wetlands or salmonid fisheries.	▪ Not applicable.	▪ None needed.
Cultural Resources	▪ No change to existing conditions.	▪ No effect.	▪ No effect.	▪ Not applicable.	▪ None needed.
Socioeconomics	▪ No change to baseline socioeconomic conditions.	▪ No significant effects on demographics, employment, or income potential anticipated. ▪ Expected beneficial economic "flow down" effects would be temporary and minor. ▪ No environmental justice concerns.	▪ No significant effects on demographics, employment, or income potential anticipated. ▪ Expected beneficial economic "flow down" effects would be temporary and minor. ▪ No environmental justice concerns.	▪ Not applicable.	▪ None needed.

Resource Area	No Action Alternative	Preferred Alternative	Site E Alternative	Best Management Practices	Mitigation Measures
Transportation	▪ No change in current traffic conditions.	▪ A slight increase in vehicular traffic on drill weekends is anticipated.	▪ A slight increase in vehicular traffic on drill weekends is anticipated.	▪ Not applicable.	▪ None needed.
Utilities	▪ No change in current consumption or wastewater and solid waste generation.	▪ CFC-containing cooling system would be removed. ▪ No significant long-term effects on utility services would be expected. ▪ Increase in water and energy consumption. ▪ Additional use and storage of propane fuel. ▪ Increase in wastewater and solid wastes. ▪ Utility systems are adequate to meet the increased demands.	▪ Localized, temporary disruptions to utility services could occur during construction and installation of additional services. ▪ No significant long-term effects on utility services would be expected. ▪ Increase in water and energy consumption. ▪ Additional use and storage of propane fuel. ▪ Increase in wastewater and solid wastes. ▪ Utility systems are adequate to meet the increased demands.	▪ Not applicable.	▪ None needed.
Hazardous Materials and Waste Management	▪ No change to existing conditions.	▪ Increased quantities of hazardous wastes would be generated, mainly petroleum products and construction debris.	▪ Increased quantities of hazardous wastes would be generated, mainly petroleum products and construction debris.	▪ Survey and proper handling and disposal of ACM and LBP before and/or during deconstruction/demolition (preferred alternative only). ▪ Proper disposal of CFCs required (preferred alternative only). ▪ Proper handling and storage of petroleum, oils, and lubricants at vehicle maintenance shop required (preferred and Site E alternatives).	▪ None needed.

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ACRONYMS AND ABBREVIATIONS

ACM	Asbestos-containing Material
ACSIM	Assistant Chief of Staff for Installation Management
ADERP	Army Defense Environmental Restoration Program
ADNL	"A"-weighted Day-night Sound Level
ADT	Average Daily Traffic
AFRC	Armed Forces Reserve Center
AR	Army Regulation
ARNG	Army National Guard
BEA	Bureau of Economic Analysis
BLS	Bureau of Labor Statistics
BMP	Best Management Practice
BRAC	Base Realignment and Closure
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFC	Chlorofluorocarbon
CFR	Code of Federal Regulations
CWA	Clean Water Act
DA	Department of the Army
dB	Decibel
dBA	"A"-weighted Decibel
DoD	U.S. Department of Defense
DOT	U.S. Department of Transportation
DPW	Directorate of Public Works
EA	Environmental Assessment
EIFS	Economic Impact Forecast System
EIS	Environmental Impact Statement
EMS	Environmental Management System
ENRD	Environment and Natural Resources Division
EO	Executive Order
FAA	Federal Aviation Administration

ACRONYMS AND ABBREVIATIONS (Continued)

FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FNSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
FR	Federal Register
FY	Fiscal Year
GIS	Geographic Information System
gpd	Gallons per Day
HVAC	Heating/Ventilation/Air Conditioning
IRP	Installation Restoration Program
I-90	Interstate 90
LBP	Lead-based Paint
LEED	Leadership in Energy and Environmental Design
LEP	Limited English Proficiency
MSA	Metropolitan Statistical Area
$\mu g/m^3$	Micrograms per Cubic Meter
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
n/a	Not Available
NCA	Noise Control Act
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NHPA	National Historic Preservation Act
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NO_X	Nitrogen Oxide
NPDES	National Pollutant Discharge Elimination System
NRC	National Research Council
NRCS	Natural Resource Conservation Service
OSHA	Occupational Safety and Health Administration
PCB	Polychlorinated Biphenyl
PL	Public Law

ACRONYMS AND ABBREVIATIONS (Continued)

PM_{10}	Particulate Matter Measuring Less than 10 Microns in Diameter
POL	Petroleum, Oils, and Lubricants
ppm	Parts per Million
PSD	Prevention of Significant Deterioration
RCRA	Resource Conservation and Recovery Act
RIMS II	Regional Input-output Modeling System
ROI	Region of Influence
RSC	Regional Support Command
sf	Square Feet
SWPPP	Stormwater Pollution Prevention Plan
USACE	U.S. Army Corps of Engineers
USACHPPM	U.S. Army Center for Health Promotion and Preventive Medicine
USAR	U.S. Army Reserve
USARC	U.S. Army Reserve Center
USC	U.S. Code
USCB	U.S. Census Bureau
USGS	U.S. Geological Survey
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
UXO	Unexploded Ordnance
VPH	Vehicles per Hour
WAARNG	Washington Army National Guard
WDOE	Washington Department of Ecology
yd^2	Square Yards
YRCAA	Yakima Regional Clean Air Authority
YTC	Yakima Training Center

1.0 PURPOSE, NEED, AND SCOPE

1.1 INTRODUCTION

On 8 September 2005, the Defense Base Realignment and Closure (BRAC) Commission recommended various realignment and closure actions within the U.S. Department of Defense (DoD). The President approved these recommendations on 23 September 2005 and forwarded them to Congress. Congress did not alter any of the BRAC Commission recommendations, and on 9 November 2005, the recommendations became law. The BRAC Commission recommendations must be implemented as provided for in the Defense Base Closure and Realignment Act of 1990 (Public Law [PL] 101-510), as amended.

The BRAC Commission recommended that the Army close the Wagenaar U.S. Army Reserve Center (USARC) in Pasco, Washington; consolidate activities of the Pendleton USARC at the Yakima Training Center (YTC); provide space upon request for units from the Washington Army National Guard (WAARNG) Ellensburg Readiness Center in Ellensburg, Washington; and relocate those units to a new Armed Forces Reserve Center (AFRC) on existing federal property at YTC near Yakima. This Environmental Assessment (EA) analyzes and documents environmental effects associated with the Army's preferred alternative to construct, operate, and maintain a new AFRC at YTC.

1.2 PURPOSE AND NEED

The purpose of the preferred alternative is to implement the BRAC Commission's recommendation pertaining to YTC.

The need for the preferred alternative is to improve the ability of the Nation to respond rapidly to challenges of the 21st century. The Army is bound legally to defend the United States and its territories, support national policies and objectives, and defeat nations responsible for aggression that endangers the peace and security of the United States. To carry out these tasks, the Army must adapt to changing world conditions and improve its capabilities to respond to a variety of circumstances across the full spectrum of military operations.

In previous rounds of BRAC, the explicit goal was to save money and downsize the military to reap a "peace dividend." In the 2005 BRAC round, DoD seeks to reorganize its installation infrastructure to support its forces most efficiently, increase operational readiness, and facilitate new ways of doing business. Thus, BRAC represents more than cost savings. It supports advancing the goals of Army transformation, improving military capabilities, and enhancing

military value. The Army must carry out the BRAC recommendations at YTC to achieve the objectives for which Congress established the BRAC process.

1.2.1 History

YTC originally was established as an anti-aircraft firing range in 1942. Military training activities have diversified since World War II and have included infantry, gunnery, tracked and wheeled vehicle, and parachute training (YTC Directorate of Public Works [DPW] Environment and Natural Resources Division [ENRD], 2002). Currently, YTC supports cross-country maneuvers and live-fire training operations. The current land uses at YTC include a Cantonment Area (1,010 acres) with residential, administrative, commercial, light industrial, and open space; training areas (326,221 acres) with and without airfields; and firing ranges.

1.2.2 Location

YTC is located in Kittitas and Yakima Counties, Washington, and is a sub-installation of Fort Lewis. It encompasses 327,231 acres (512 square miles) approximately 7 miles northeast of the City of Yakima. The surrounding area is mainly rural. Figure 1-1 shows a regional view detailing the relationship between YTC and the surrounding area.

1.2.3 Mission

YTC supports tough, realistic, combined arms, joint, and coalition forces training for U.S. and allied military units in order to enhance unit readiness by sustaining training lands, range complexes, and support facilities capable of meeting all present and future training requirements (Pullar, 2007). Figure 1-2 is a detailed map of YTC with the Cantonment Area that is discussed in more detail herein.

1.3 SCOPE

This EA was prepared pursuant to the AFRC BRAC action for YTC, in accordance with 32 Code of Federal Regulations (CFR) 651, *Environmental Analysis of Army Actions, Final Rule*; the regulations for implementing the procedural provisions at 40 CFR 1500 to 1508 (Council on Environmental Quality [CEQ], 1986); and Army policy guidance in the *Base Realignment and Closure Manual for Compliance with NEPA* (U.S. Army, 2006). Its purpose is to inform decision makers and the public of the likely environmental consequences of the preferred alternative and other alternatives. This EA identifies, documents, and evaluates all relevant impacts, conditions,

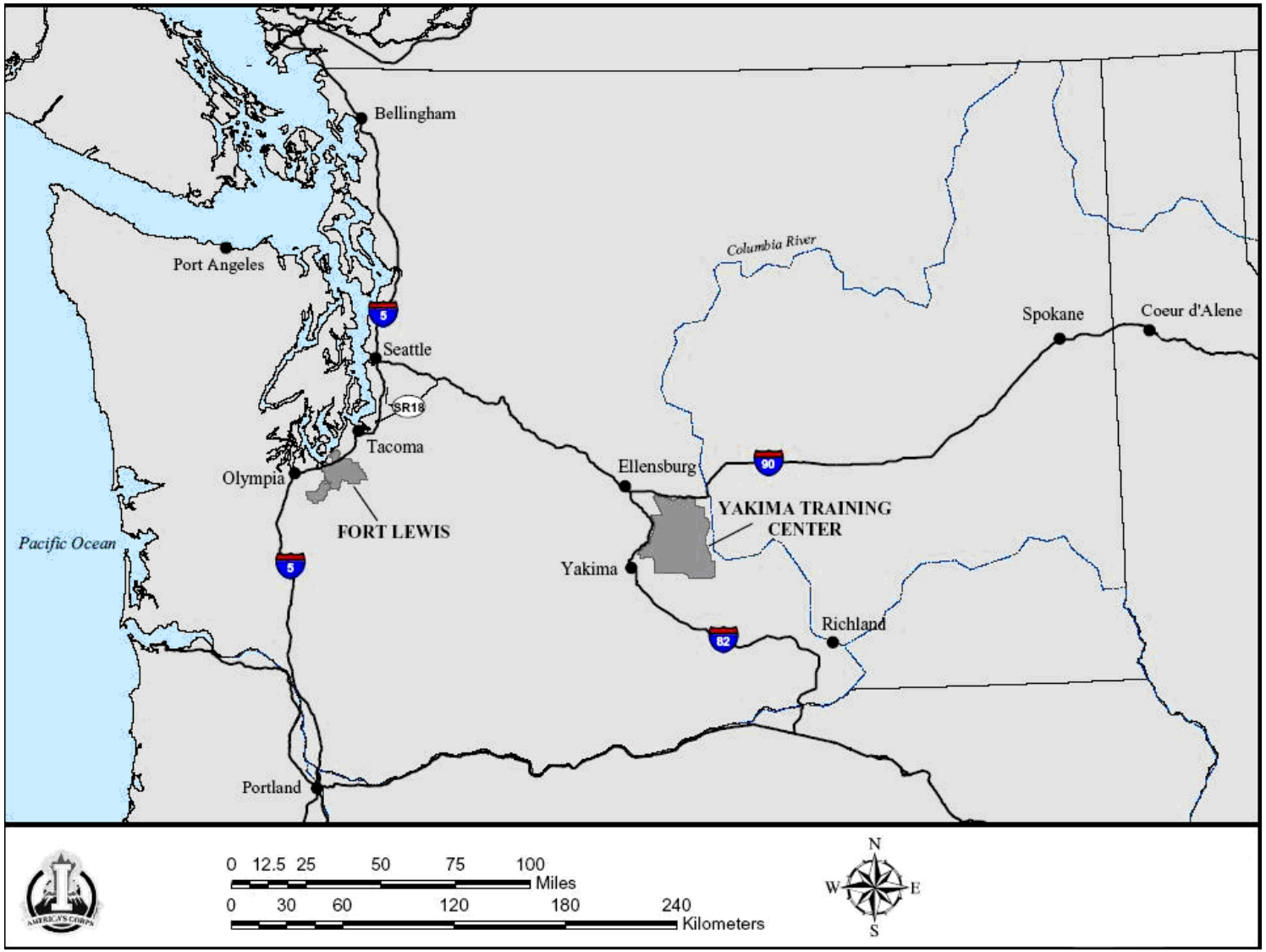

Figure 1-1 YTC Vicinity Map
Source: YTC DPW ENRD, 2002

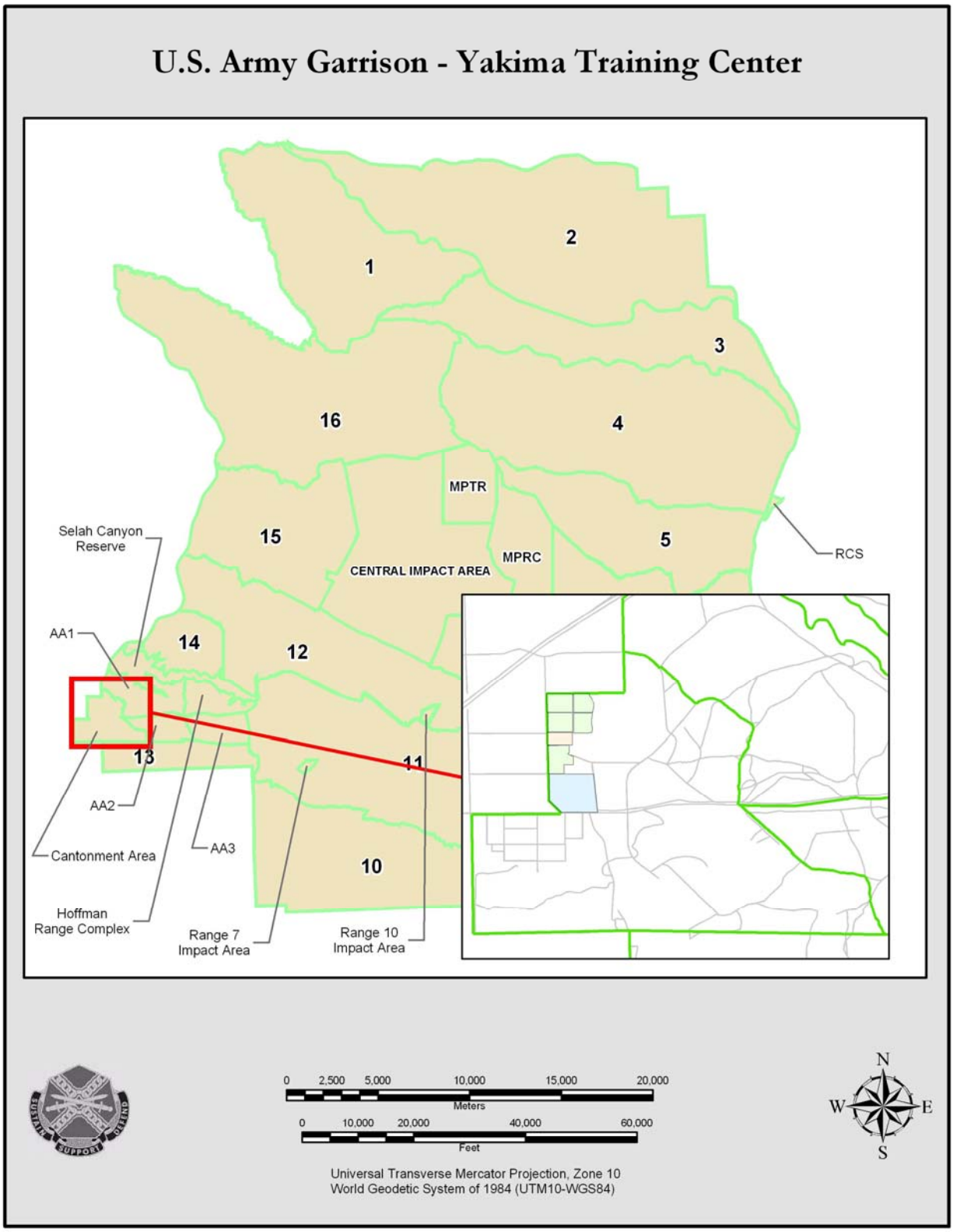

Figure 1-2 Yakima Training Center
Source: YTC DPW ENRD, 2002

and issues associated with the proposed realignment actions at YTC. The action alternatives are described in Section 2.0, and the no action alternative is described in Section 3.0. Conditions existing as of 2006, considered to be the "baseline" conditions, are described in Section 4.0, "Affected Environment and Consequences." The expected effects of the preferred alternative and Best Management Practices (BMPs) also are described in Section 4.0.

The Defense Base Closure and Realignment Act of 1990 specifies that the National Environmental Policy Act (NEPA) does not apply to actions of the President, the BRAC Commission, or DoD, except "(i) during the process of property disposal, and (ii) during the process of relocating functions from a military installation being closed or realigned to another military installation after the receiving installation has been selected but before the functions are relocated" (PL 101-510, §2905[c][2][A], as amended). The law further specifies that in applying the provisions of NEPA to the process, the Secretary of Defense and the secretaries of the military departments concerned do not have to consider "(i) the need for closing or realigning the military installation which has been recommended for closure or realignment by the Commission, (ii) the need for transferring functions to any military installation which has been selected as the receiving installation, or (iii) military installations alternative to those recommended or selected" (PL 101-510, §2905[c][2][B]). The BRAC Commission's deliberation and decision, as well as the need for closing or realigning a military installation, are exempt from NEPA. Accordingly, this EA does not address the need for realignment.

NEPA and CEQ regulations require that federal agencies consider the environmental effects of actions and alternatives at a facility during the decision-making process. This EA provides the decision makers with all information available to understand the potential future environmental consequences or impacts due to the implementation of the two action and the no action alternatives specified in this EA. After review of the analysis presented in this EA, a decision to issue a Finding of No Significant Impact (FNSI) or to proceed with the preparation of an Environmental Impact Statement (EIS) to quantify and detail further impacts from the preferred or other action alternatives will be made by the Army.

1.4 PUBLIC INVOLVEMENT

The Army invites full public participation in the NEPA process to promote open communication and better decision making. All persons who have potential interest in the proposed action, including minority, low income, disadvantaged, and Native American groups, are encouraged to participate in the NEPA environmental analysis process.

The final EA and a draft FNSI will be available for a 30-day comment period after a Notice of Availability is published in the *Yakima Herald-Republic* and *Ellensburg Daily Record*. Copies of the draft-final EA and FNSI also will be placed in local public libraries in Yakima and Ellensburg. During this time, the Army will consider any comments on the preferred alternative, the EA, or the draft FNSI submitted by agencies, organizations, or members of the public. At the conclusion of the comment period, the Army may, if appropriate, execute the FNSI and proceed with the preferred alternative. If it is determined that implementation of an action alternative could result in significant impacts, the Army will publish, in the Federal Register (FR), a Notice of Intent (NOI) to prepare an EIS or commit to mitigation actions sufficient to reduce impacts below significant levels.

Throughout this process, the public may obtain information regarding the status and progress of the preferred alternative and the EA through the YTC Natural Resources Department by contacting ENRD, DPW, YTC, at (509) 577-3500.

1.5 FRAMEWORK FOR ANALYSIS

This EA was prepared in compliance with all federal, state, and local laws, regulations, and policies applicable to the proposed and alternative actions described in Sections 2.0 and 3.0. Following is a brief list of federal, state, and local regulations considered:

- NEPA of 1969, as amended (42 U.S. Code [USC] §§4321 to 4370D)
- Endangered Species Act of 1973, as amended (16 USC §§1531 to 1544)
- Sikes Act of 1960, as amended (16 USC §§670a to 670o)
- Emergency Preparedness and Community Right to Know Act of 1986 (42 USC §§11001 to 11050)
- Resource Conservation and Recovery Act (RCRA) of 1976 (42 USC §§6901 to 69911)
- National Historic Preservation Act (NHPA) of 1966 (16 USC §470)
- Native American Graves Protection and Repatriation Act of 1990 (25 USC §§3001 to 3013; 43 CFR 10)
- Executive Order (EO) 11514, *Protection and Enhancement of Environmental Quality*
- EO 12898, *Environmental Justice*
- EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*

- Clean Air Act (CAA) of 1963, as amended (PL 101-549)
- Clean Water Act (CWA) (33 USC §§7401 *et seq.*)
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 USC §§9601 *et seq.*)

2.0 DESCRIPTION OF ACTION ALTERNATIVES

2.1 INTRODUCTION

Under the provision of the Defense Base Closure and Realignment Act of 1990 (PL 101-510), the 2005 BRAC Commission made the following recommendation regarding YTC:

> Close Wagenaar Army Reserve Center Pasco, WA and relocate units to a new consolidated Armed Forces Reserve Center on Yakima Training Center. Realign Pendleton Army Reserve Center on Yakima Training Center by moving all assigned units to the new Armed Forces Reserve Center on Yakima Training Center. The new AFRC shall have the capability to accommodate units from the following Washington ARNG facility: Washington ARNG Ellensburg Readiness Center, if the state decides to relocate those units (DoD, 2005).

2.2 IMPLEMENTATION PROPOSED

The proposed action would involve construction of a 400-person AFRC facility that would provide administrative, educational, assembly, library, learning center, vault, weapons simulator, vehicle and equipment maintenance operations, organizational unit storage, conference room, maintenance shop, and parking areas for U.S. Army Reserve (USAR) units. The construction of the proposed AFRC facilities would not exceed 100,000 square feet (sf) on existing Army property at the edge of the YTC Cantonment Area to accommodate the units relocating to YTC. Facilities would not be constructed within 148 feet of the installation boundary per Force Protection requirements, except for privately owned vehicle parking. Two locations along the west boundary of the YTC Cantonment Area are being considered for the AFRC: Site A, located between the transient motor pool and the garrison operations area, and Site E, north of Site A (Figure 2-1). Deconstruction/demolition of two existing 30-year-old facilities would be required at Site A, which is the preferred alternative. The existing facilities proposed to be removed are Building T805 (an approximately 13,000-sf training facility) and Building T806 (an approximately 3,000-sf maintenance shop). Three new structures would be constructed on top of the existing facilities' footprints, some existing lawn, a parking area, and a currently unpaved vacant lot. Site E is a vacant, undeveloped parcel in the corner of the Cantonment Area.

The units from the Pendleton USARC are in place and training at YTC. The units from the Wagenaar USARC currently train at YTC.

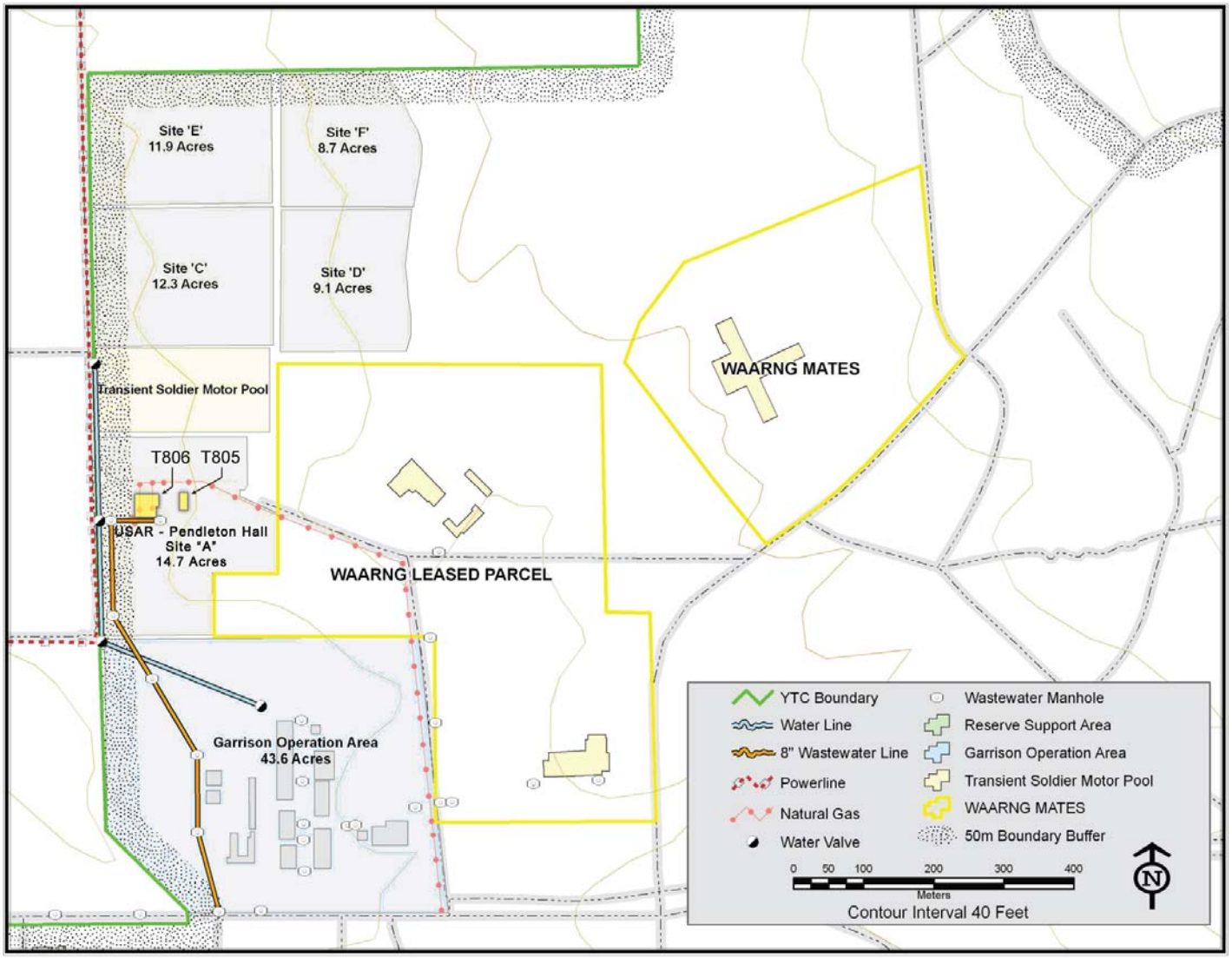

Figure 2-1 Site Alternatives Considered for the Preferred Alternative
Source: YTC DPW ENRD, 2002

2.3 SCHEDULE

Under BRAC law, the Army must initiate all realignments no later than 15 September 2007 and complete all realignments no later than 15 September 2011. Construction of this project is anticipated to start in February 2008 and be completed by February 2010.

3.0 ALTERNATIVES

3.1 ALTERNATIVES SCREENING PROCESS

A core principle of NEPA is that an agency should consider reasonable alternatives to a preferred alternative. Considering alternatives helps to avoid unnecessary impacts and allows for analysis of reasonable ways to achieve the stated purpose. To warrant detailed evaluation, an alternative must be reasonable. To be considered reasonable, an alternative must be "ready" for decision making (any necessary preceding events having taken place), affordable, capable of implementation, and satisfactory with respect to meeting the purpose of and need for the action. The following discussion identifies alternatives considered by the Army and identifies whether they are feasible and therefore subject to detailed evaluation in this EA. The discussion below is from an internal agency report titled *Site Selection for an Armed Forces Reserve Center (AFRC) at Yakima Training Center (YTC), Yakima, Washington,* prepared by Mr. Pete Nissen, DPW ENRD (Nissen, 2006).

The YTC Master Plan was consulted to confirm that sites under consideration had compatible existing land uses. The Master Plan narrowed the range of sites to those designated as "Readiness/Reserve Centers and Reserve Component Expansion Areas Within the Cantonment Area." Once the large area that had compatible land use was identified, site selection screening criteria were applied to refine choices. Factors identified as those most useful to compare sites included the following:

- Sites met minimum size requirements.
- There are existing utilities and access routes available.
- The site would meet all physical security requirements.
- The site previously was developed.

More specifically, it was determined that approximately 15 acres would be required, utilities must be on or adjacent to the site (including water, sewer, natural gas, telephone, and electricity), the site must be large enough to accommodate a 148-foot physical security setback zone, access must be from within the Cantonment Area, and it would be preferable to construct within an existing footprint if possible.

Within the "Readiness/Reserve Centers and Reserve Component Expansion Areas Within the Cantonment Area," six sites were identified for consideration near Buildings T805 and T806 (Figure 2-1). The major rationale for selecting sites from this area was based on maintaining like facilities where they already exist. The terrain and physical features for all six sites are similar.

Site B, south of Site D and adjacent to the transient motor pool, while originally considered, was eliminated because it fell within the boundary of an area currently under lease to another tenant organization (*i.e.*, WAARNG). Sites D and F were eliminated from further consideration because of limitations at these sites. Specifically, the sites lacked existing utilities and an improved access road that has a combined economic effect on the project that causes it to be unexecutable within the programmed funding level. In addition, selecting Site D or F would limit future development potential that may require a larger area (*e.g.*, merging the two sites into one). Table 3-1 shows how the sites ranked/scored.

Table 3-1 Site Selection Screening Summary

Site	Minimum Acreage Available (1=yes, 0=no)	Existing Utilities at the Site (1=yes, 0=no)	Meets Phys. Sec. Req. (1=yes, 0=no)	Existing Access Route (1=yes, 0=no)	Site Has Been Previously Disturbed (1=yes, 0=no)	Cost Estimate to Construct at the Site is Within Project Estimate (1=yes, 0=no)	Selection of the Site Would Limit Future Development Options (1=no, 0=yes)	Total
A	1	1	1	1	1	1	1	7
C	1	1	1	0	0	1	0	4
D	1	0	1	0	0	0	0	2
E	1	1	1	0	0	1	1	5
F	1	0	1	0	0	0	0	2

Note: Five acres is considered the minimum area needed for building after subtracting the security buffer area.

The three remaining sites are A, C, and E. The total area for each of these sites is 14.7, 12.3, and 11.9 acres respectively. The areas outside the security buffer for these sites are 8.8, 10.2, and 7.2 acres respectively. Site A is the preferred alternative because it satisfies all screening criteria. Sites C and E are similar in that there would be a need to extend some utilities (power and natural gas are readily available along the western boundary) and an access route to the sites. The difference between the two sites is that Site E is located in a corner, while Site C is located halfway between Site E and a transient motor pool. The issue with selecting Site C is that it would limit future development potential that would enable YTC to accommodate larger land area needs if future projects require a larger site. Construction cost estimate differences are not significantly different between Sites E and C. Therefore, Sites A and E were evaluated further. All other sites were not considered further because they would not satisfy the purpose and need of the action.

3.2 NO ACTION ALTERNATIVE

CEQ regulations require inclusion of the no action alternative, which serves as a baseline against which the impacts of the preferred alternative and other alternatives can be evaluated. Under the no action alternative, YTC would not implement the preferred alternative. Organizations currently assigned to YTC would continue to train at and operate from the installation, and no additional USAR units would be assigned to YTC. The use of the Pendleton and Wagenaar USARCs, which do not meet current Anti-terrorism Force Protection and physical security requirements, would continue. Nevertheless, implementation of this alternative is not possible in light of the BRAC recommendations having the force of law. Evaluation of the no action alternative is presented in detail in this EA as a baseline only.

4.0 AFFECTED ENVIRONMENT AND CONSEQUENCES

4.1 INTRODUCTION

This EA is focused on determining the potential environmental impacts resulting from implementation of the preferred alternative described in Section 3.0. This action is characterized by the construction of AFRC facilities on a site within the existing Cantonment Area. The following sections describe the existing natural and built environment (affected environment) for various resource areas in the Cantonment Area near the preferred site, and then present the potential impacts of the preferred alternative. The *Yakima Training Center Planning Supplement* (YTC/Fort Lewis, 2003); *Final Environmental Impact Statement, Stationing of Mechanized or Armored Combat Forces at Fort Lewis, Washington* (U.S. Army Corps of Engineers [USACE], 1994); and *Final Environmental Assessment, Stationing Regimental Aviation Assets at Fort Lewis and Yakima Training Center, Washington*, (ENSR International, 2005) provide detailed descriptions of YTC and the Yakima metropolitan area. This EA has incorporated baseline information regarding the affected environment near the proposed site from these documents and augmented it as needed from other sources as referenced.

4.2 LAND USE

4.2.1 Affected Environment

As stated in the *Yakima Training Center Planning Supplement* (YTC/Fort Lewis, 2003), YTC:

- Provides home station facilities for selected Army, ARNG, USAR, and U.S. Marine Corps Reserve units; other units; other organizations; and their equipment
- Provides premium weapons and gunnery ranges and maneuver areas to support training operations of resident and visiting active Army, ARNG, USAR, and other service units, and allied forces, up to a two-brigade size
- Can be configured as a post-mobilization maneuver training center capable of housing and training up to three mobilizing enhanced-readiness brigades consecutively, while supporting a dedicated Opposition Force and necessary training division personnel
- Provides support to other populations as directed

Land use at YTC supports military training requirements, including a wide range of gunnery and maneuver training activities. No development or new construction is planned in these training areas under the preferred alternative. Figure 4-1 shows the Cantonment Area, the preferred alternative parcel, and the two facilities to be deconstructed/demolished.

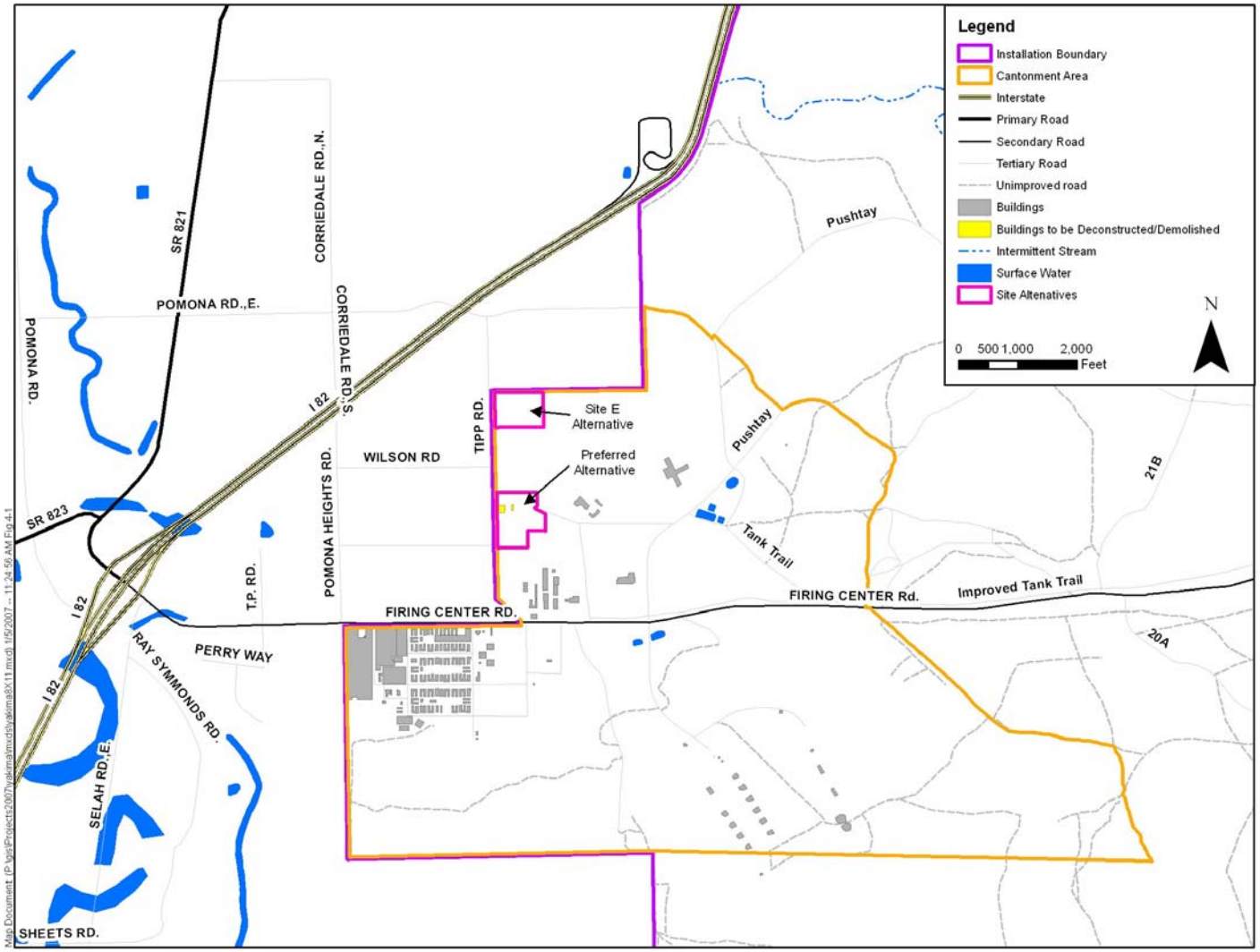

Figure 4-1 YTC Cantonment Area Map
Source: YTC Geographic Information System (GIS)

The preferred alternative involves construction of new facilities within the Cantonment Area, which is the only portion of YTC that could be considered a predominantly disturbed environment. Most of the facilities and the utility distribution systems at YTC are located within the Cantonment Area. Land use near the new construction sites is characterized as low-density, developed area.

Regional Geographic Setting and Location

The 327,231-acre YTC is located in Yakima and Kittitas Counties. It is approximately 7 miles northeast of Yakima. It is bordered on the north by Interstate 90 (I-90), on the east by the Columbia River, on the south by private lands, and on the west by private lands and I-82.

YTC is located in the Columbia Basin, an area characterized by hot, dry summers and cool winters. The region is marked by undulating terrain with five major northwest-to-southeast ridges separated by large valleys. The prevailing winds are generally northwest to southeast. Most of the precipitation in the area comes in late fall and early winter storms.

Installation Land/Airspace Use

The two major land use areas at YTC are the cantonment (approximately 1,010 acres) and training (approximately 326,221 acres) areas. The Cantonment Area is located in the southwest corner of the installation, near I-82, and includes administrative, commercial, light industrial, and open spaces. The training areas include maneuver corridors, impact areas, ranges, drop zones, and bivouac areas. Ranges that provide gunnery training and airfields that accommodate rotary wing aircraft and tactical assault capabilities also are located at YTC. All aviation activities conducted at YTC comply with Federal Aviation Administration (FAA) regulations. Portions of the airspace overlying YTC are designated by the FAA as "Special Use Airspace."

A portion of the southern end of the preferred alternative site is designated as the "C2/Base Operations Zone," which includes areas set aside for Regional Support Commands (RSCs), hazardous materials storage, and transportation motor pools (YTC/Fort Lewis, 2003).

Surrounding Land/Airspace Use

Yakima has grown considerably since YTC was established. YTC now is bordered on the west and southwest by suburban residential development.

4.2.2 Consequences

Preferred Alternative

The siting of the AFRC facility would provide new and improved administrative and training space from the deconstruction/demolition of two facilities (Buildings T805 and T806) that are 12,880 and 3,112 sf, respectively. The facilities were built in 1976 (Toda, 2006). These facilities are not suitable for reuse by the AFRC because they originally were constructed to be temporary, are in disrepair, and do not meet various military standards. The current functions would be absorbed into the new facilities.

Environmental impacts of the preferred alternative would include short-term disturbances of the land use, with minimal long-term effects after the initial construction period. The preferred alternative is consistent with the current land use. The impact on land use would be revitalization of a portion of the facilities in the Cantonment Area, which would enhance the land use in this area positively.

Site E Alternative

Site E is part of the mobilization expansion areas at YTC that have been set aside for rapid establishment of temporary facilities during mobilization. These areas would include hutments/tent pad or shelters, parking areas, and utilities (YTC/Fort Lewis, 2003). The development of this site for the AFRC would limit its potential use for mobilization activities. This constraint would not have an adverse effect on YTC land uses because adequate mobilization expansion areas are available in the eastern portion of the Cantonment Area. There would be no significant effects on residential land uses adjacent to this site along Tipp Road (Figure 4-1).

No Action Alternative

Under the no action alternative, no new construction or deconstruction/demolition would occur, and the existing Cantonment Area facilities would continue to be used. There would be no improvement in the quality of the facilities in this area, and the BRAC requirements would not be implemented.

4.3 AESTHETICS AND VISUAL RESOURCES

4.3.1 Affected Environment

Visually, much of YTC remains in a relatively natural state (Figure 4-2). The Cantonment Area has a mixture of old and new facilities in predominantly earth tone colors that are clustered together in a mixed use type of setting. The area surrounding the Cantonment Area provides a natural, park-like backdrop with interesting natural vistas on three sides. Low-density housing is located immediately west of the preferred alternative area.

4.3.2 Consequences

Preferred Alternative

Construction of the AFRC facilities in the Cantonment Area would be compatible with the natural park-like setting. This siting would not disrupt the natural land areas of YTC. Deconstruction/demolition of existing Buildings T805 and T806 on the approximately 15-acre parcel should benefit overall appearance, especially the view from neighboring residences. These AFRC structures should incorporate architectural treatments, scale, and layout of surrounding facilities, where the visual context is important. Potential changes in view from elevations bordering on the west should not represent an adverse effect. Nevertheless, the project would include additional exterior lighting required for security purposes. Nearby neighbors would experience increased lumens of outdoor light as a result of the preferred alternative.

Site E Alternative

Exterior lighting for security purposes would be visible from the nearby off-installation residences to the west. There would be no other effects on aesthetic and visual resources from implementing this alternative.

No Action Alternative

Under the no action alternative, no new construction or deconstruction/demolition would occur, and the existing Cantonment Area facilities would continue to be used. There would be no improvement in the quality of the facilities on the approximately 15-acre parcel.

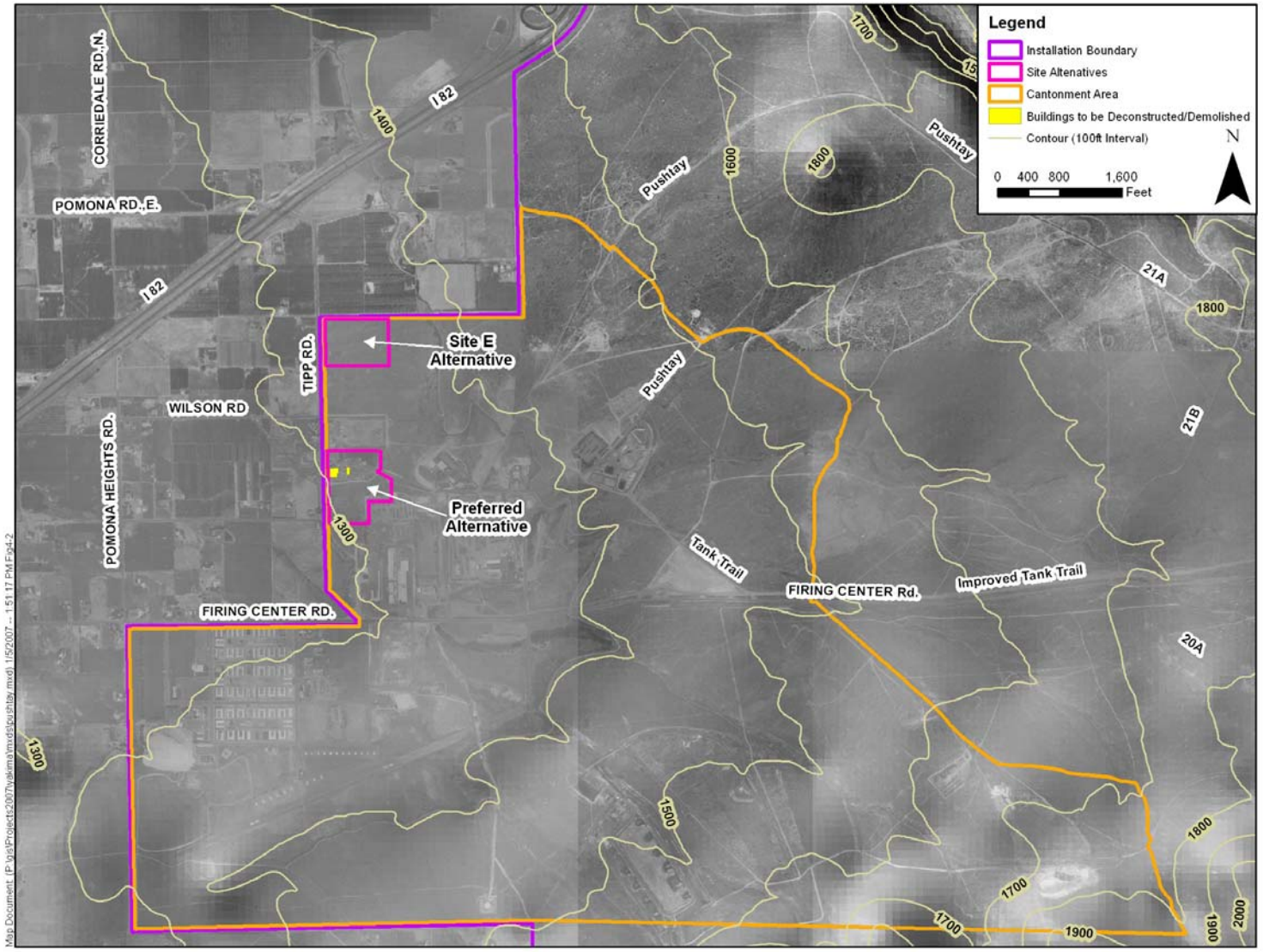

Figure 4-2 YTC Cantonment Area Topographic Map
Source: YTC DPW ENRD, 2007

4.4 AIR QUALITY

Ambient Air Quality Conditions

Air quality at a given location is a function of several factors, including quantity and dispersion rates of pollutants, temperature, presence/absence of inversions, and topographic and geographic features. The CAA (42 USC §§7401 to 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, carbon monoxide, nitrogen oxide (NO_x), ozone, and lead. Primary NAAQS are established to protect public health, and secondary standards provide protection for public welfare, which includes wildlife, climate, transportation, and economic values (Table 4-1). Additionally, USEPA must ensure that air quality standards are met to control pollutant emissions from mobile (*e.g.*, vehicles) and stationary (*e.g.*, factories) sources.

Table 4-1 National Ambient Air Quality Standards

Criteria Pollutant	Standard	Primary Standard	Secondary Standard	Averaging Time
Ozone	Average of the annual fourth highest daily 8-hour maximum over a three-year period is not to be above this level.	0.08 ppm	0.08 ppm	8-hour
	Average of the annual highest daily 1-hour maximum over a three-year period is not to be above this level.	0.125 ppm	0.125 ppm	1-hour
Carbon Monoxide	Not to be exceeded more than once per year.	35 ppm	None	1-hour
	Not to be exceeded more than once per year.	9 ppm	None	8-hour
Lead	Not to exceed this level.	1.5 µg/m^3	1.5 µg/m^3	Quarterly
Nitrogen Dioxide	Not to exceed this level.	0.053 ppm	0.053 ppm	Annual
$PM_{2.5}$*	Three-year average of the annual 98th percentile for each population-oriented monitor within an area is not to be above this level.	35 µg/m^3	None	24-hour
	Three-year average of annual arithmetic mean concentrations from single or multiple community-oriented monitors is not to be above this level.	15.0 µg/m^3	15.0 µg/m^3	Annual
PM_{10}	Not to be exceeded more than once per year.	150 µg/m^3	None	24-hour
Sulfur Dioxide	Not to be exceeded more than once per year.	None	0.5 ppm	3-hour
	Not to be exceeded more than once per year.	0.14 ppm	None	24-hour
	Not to exceed this level.	0.03 ppm	None	Annual

Units: ppm – parts per million
µg/m^3 – micrograms per cubic meter
*Particulate matter standards were revised in December 2006 to revoke the annual PM_{10} primary standard (71 FR 61144)
Source: USEPA, NAAQS (USEPA, n.d.)

The NAAQS represent the maximum levels of background pollutants that are considered safe, with an adequate margin of safety to protect public health and welfare. Short-term standards (1-, 3-, 8-, and 24-hour periods) have been established for pollutants contributing to acute health effects, while long-term standards (quarterly and 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. The Yakima Regional Clean Air Authority (YRCAA) has the primary enforcement authority for air emissions for the portion of the areas of YTC subject to this EA located in Yakima County. USEPA and the Washington Department of Ecology (WDOE) oversee YRCAA. The Central Regional Office of WDOE has authority in Kittitas County.

Rangeland fires are a fairly common occurrence at YTC and often are started by ordnance used in training exercises (discussed in detail in YTC DPW ENRD, 2002). The fires release particulate matter and volatile organic compounds into the atmosphere. Depending on location, severity, direction of prevailing winds, and duration, the fires may annoy downwind residents. However, fire suppression programs are in place to control the fires as quickly as possible.

4.4.1 Affected Environment

The portions of the Cantonment Area that would be impacted by the action alternatives are adjacent to a nonattainment area for PM_{10} (ENSR International, 2005). The project is not expected to impact attainment of the PM_{10} standards. The YTC area is in attainment for all other criteria pollutants (Table 4-1).

Most of the particulates at YTC are generated by rangeland fires and the fugitive dust associated with maneuver-training activities. These particulates tend to dissipate quickly as a result of the westerly prevailing winds.

The largest stationary source of air pollution at YTC is fuel-burning equipment, which includes generators and boilers. Other sources of pollution include painting operations, a wastewater treatment plant, fuel storage, degreasing operations, and vehicle maintenance. Criteria pollutant emissions at YTC in 2000 were estimated at 6.68 tons, well below the 100-ton-per-year threshold for regulation as a major source under the CAA Title V program. No major changes in air pollutant sources have occurred since 2000 (ENSR International, 2005).

USEPA has designated certain national parks and wilderness areas as Prevention of Significant Deterioration (PSD) Class I areas because of their pristine air quality. These areas are afforded

special protection from impacts associated with air pollution. The Goat Rocks Wilderness Area, which is located approximately 60 miles to the west and upwind of YTC, is the closest PSD Class I area to YTC (ENSR International, 2005). No effects on this wilderness area would be expected.

4.4.2 Consequences

Preferred Alternative

Increased boiler use and propane combustion from new boilers and heaters associated with the preferred alternative could cause air pollutant emissions to increase. No other increases in air emissions from stationary sources would be expected under the preferred alternative.

Combustion sources in Buildings T805 and T806 would be removed as part of the deconstruction/demolition. The new AFRC would require new boilers for space heating and cooling. The current chlorofluorocarbon- (CFC-) containing coolants would be replaced with a non-CFC-containing system.

The preferred alternative is not expected to increase air emissions sufficiently to trigger permitting requirements at the state or federal level (assuming that low NO_x burners are used in boilers and that the heating requirement is <100 million British thermal units per hour). Air emissions would increase only slightly from baseline conditions. There would be no significant increase in training that could increase rangeland fires. Nevertheless, there would be a potential increase in criteria pollutants from AFRC operations. Dust suppression BMPs would be implemented during the construction phase to reduce fugitive dust.

Site E Alternative

The air quality effects under this alternative would be the same as those under the preferred alternative.

No Action Alternative

Under the no action alternative, conditions affecting air quality would remain the same as those from current activities.

4.5 NOISE

Section 4(b) of the Noise Control Act (NCA) of 1972 (PL 92-574) directs federal agencies to comply with applicable federal, state, and local noise requirements with respect to the control and abatement of environmental noise. Congress defined environmental noise in the NCA to mean

the intensity, duration, and character of sounds from all sources. Noise commonly is defined as any sound that is undesired, interferes with hearing, or is loud. Noise pollution is defined as "environmental pollution consisting of annoying or harmful noise." A number of sounds produced by Army installations are considered noise or noise pollution by the military community and those who live and work around the installations (U.S. Army Center for Health Promotion and Preventive Medicine [USACHPPM], 2005a).

4.5.1 Affected Environment

Description of Noise Sources

The major sources of noise at YTC are associated with weapons firing, aircraft, and traffic, all of which are intermittent in nature. Construction equipment and traffic are the only sources of noise that are expected to be associated with the preferred alternative. The noise associated with the preferred alternative would occur mainly during the construction phase of the project.

A recent analysis of operational noise was completed to assess current conditions and predict future noise from new and additional aviation activities (USACHPPM, 2005b). Noise contours modeled for current and future conditions describe the proposed project site as lying outside the 65-decibel (dB) "A"-weighted day-night sound level (ADNL). Noise levels less than 65 dB ADNL are identified as the break point for defining Noise Zone I, which is defined as land suitable for all land use activities (USACHPPM, 2005b). The only land within the Cantonment Area that exceeds the 65-dB ADNL is the airfield, which is located south of the proposed project site.

Noise related to weapons has been reported to be in the Noise Zone I range within the YTC Cantonment Area (ENSR International, 2005). Noise associated with training activities sometimes can be heard by nearby residents. A noise complaint program is in place at YTC.

There are approximately 500 permanent staff at YTC. Thus, the contribution of personnel traveling to and from YTC to traffic noise outside the installation is relatively small. The primary source of traffic noise for residents near the western border of the Cantonment Area is I-82, which lies less than 1 mile east of the proposed project site.

4.5.2 Consequences

Preferred Alternative

The primary source of noise associated with construction activities would be the use of heavy trucks (dump trucks and concrete mixers), bulldozers, backhoes, generators, and ground

compactors. These vehicles and equipment items generate noise during deconstruction/demolition, site and foundation preparation, construction, and finishing work. The levels of noise generated by these vehicles and equipment during these activities are shown in Table 4-2.

Table 4-2 Peak Sound Level of Heavy Equipment

Equipment	Noise Level* (dBA)
Bulldozer	62-95
Scraper	76-98
Front Loader	77-94
Backhoe	74-92
Grader	72-92
Crane	70-94

Source: U.S. Department of Transportation (DOT), Federal Highway Administration, 1973

* From a single source at a distance of 50 feet. Humans hear higher pitched sounds more easily than lower ones of the same magnitude. A standard weighting curve, labeled the "A" weighting, is applied to measured sound levels to compensate for the different perceptions of loudness. Decibel values for this weighting are expressed as dBA ("A"-weighted decibels).

There would be a slight increase in overall noise levels at the preferred alternative site from the construction activity, and a slight increase in vehicular traffic.

Construction noise would be managed as an occupational health matter under Occupational Safety and Health Administration (OSHA) regulations at 29 CFR 1926. Adherence to the personal protective equipment and safety training requirements in these OSHA regulations would minimize or eliminate risk of hearing loss to construction workers.

The preferred alternative siting in the Cantonment Area is compatible with the existing noise levels generated by training activities at YTC.

Site E Alternative

The noise effects under this alternative would be the same as those under the preferred alternative.

No Action Alternative

Under the no action alternative, no new construction or deconstruction/demolition would occur, and there would be no change to the existing noise environment.

4.6 GEOLOGY AND SOILS

4.6.1 Affected Environment

Geology

A series of basalt layers interbedded with sedimentary rocks of the Ellensburg formation characterizes the geology at YTC (reviewed in more detail in USACE, 1994, and ENSR International, 2005). Deposits of loess cover the ground throughout the Cantonment Area. In particular, Holocene-Pleistocene epoch loess of the Palouse formation is the geologic stratum found under almost all of the land in the preferred alternative area (Figure 4-3). A relatively small portion of the preferred alternative site is underlain by Pomona Member Saddle Mountains basalt. This basalt layer is also present at Site E.

Geologic hazards at the YTC Cantonment Area are considered to be minor (USACE, 1994). YTC is located in an area of low historical seismicity. Slope stability can be a hazard in some areas where steep cuts and erodible soils are located; nevertheless, these conditions do not occur in the portion of the Cantonment Area of concern in this document. Volcanic hazards are limited to ashfall from Cascade volcanoes, which temporarily could affect operations at YTC. The active volcanoes in closest proximity include Mount Rainier, which is approximately 65 miles west of YTC; Mount Adams, which is approximately 65 miles southwest; Mount St. Helens, which is approximately 90 miles southwest; and Glacier Peak, which is approximately 100 miles north-northwest.

Soils

The soils in the Cantonment Area generally are classified as "Sanapum-Drysel-Scoon" (USACE, 1994), which are shallow to moderately deep, well-drained, gently sloping to steep soils in the 6- to 9- inch effective precipitation zones. These soils were formed in loess, in slope alluvium, and on old alluvial fans. More detailed characterization of the site soils identifies them as Willis silt loam, 2 to 5 percent slopes; Neppel-Scoon complex, 10 to 15 percent slopes; and Scoon loam, 5 to 10 percent slopes (Figure 4-4).

The erosion status of soils at YTC was evaluated in previous studies (USACE, 1994), which indicated that erosion might be a concern during land-clearing phases of the preferred alternative.

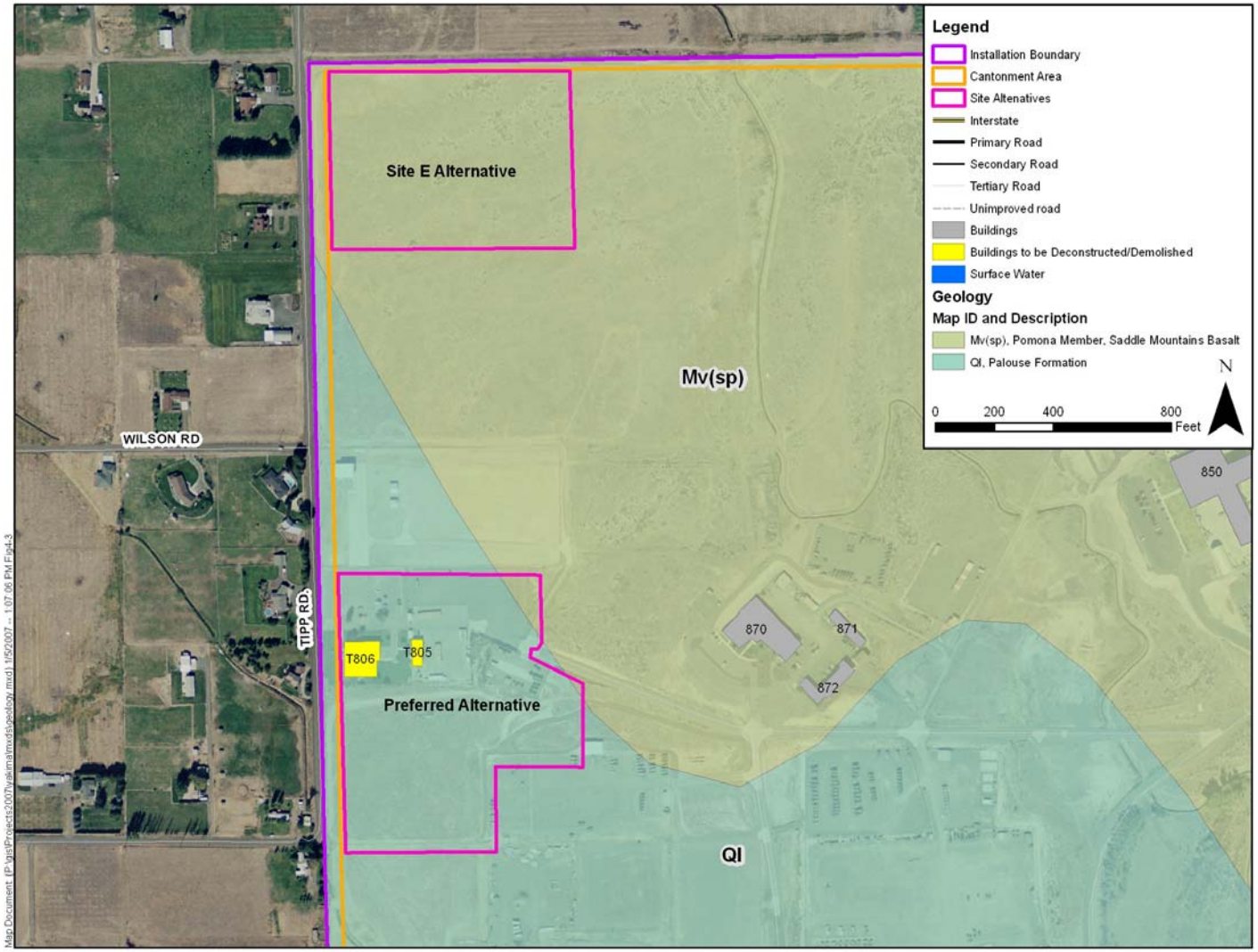

Figure 4-3 Geologic Map of AFRC Preferred Alternative Site
Source: YTC DPW ENRD, 2007

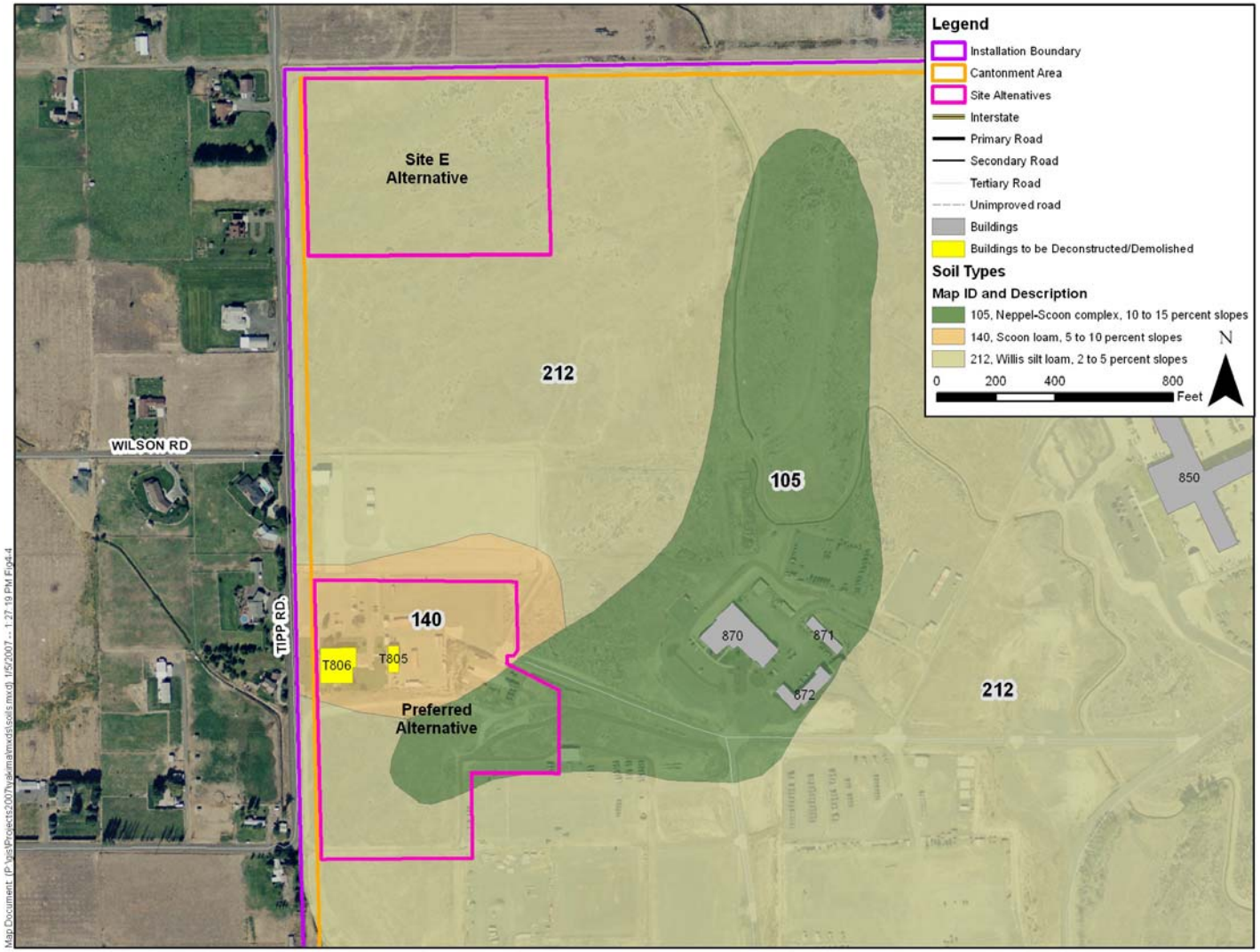

Figure 4-4 Soils Map of AFRC Preferred Alternative Site
Source: YTC DPW ENRD, 2007

However, the U.S. Department of Agriculture National Resource Conservation Service (NRCS) Web soil survey identifies the three particular soil types reported for the preferred alternative site as "not highly erodible," with a score of 5 on an 8-point scale (with 1 being most highly erodible and 8 the least erodible) (NRCS, 2007).

Prime Farmland Soils

The Federal Farmland Protection Policy Act (FPPA) was created to protect farmland and combat urban sprawl (NRCS, 1999). Consequently, soils specifically suited to agricultural uses may be protected under the FPPA. Conversion of these soils from agricultural to nonagricultural uses may be limited. Specifically protected are cultivated areas identified by the FPPA as prime farmland, unique farmland, and farmland that is of local or statewide importance. Willis silt loam, 2 to 5 percent slope, is considered by NRCS to be a prime farmland soil if irrigated (NRCS, 2007). A portion of the approximately 15-acre preferred alternative site and all of Site E lie within this soil type. There are 1,042 acres of this soil type in Yakima County (NRCS, 2007). Each of the action alternative areas that may be paved by this project is neither in current production nor irrigated. Furthermore, these areas are not likely to be converted to agricultural uses in the foreseeable future because of their presence within the YTC Cantonment Area boundary.

4.6.2 Consequences

Preferred Alternative

The preferred alternative would have no significant adverse impact on the geology or soils at YTC.

Minor impacts on soils are anticipated to occur, mostly during the construction phase, when excavation activities are underway. Soil losses from wind action may occur during construction. A project Dust Control Plan would have to be submitted to YRCAA. In addition, the existing Stormwater Pollution Prevention Plan (SWPPP) would require revision or a new SWPPP would have to be developed to control soil erosion and runoff. SWPPP BMPs would be designed to remove 80 percent of the total suspended solids load during the peak of a 6-month, 24-hour storm in accordance with the Washington National Pollutant Discharge Elimination System (NPDES) Construction Stormwater General Permit (WDOE, 2005). Federal facilities are also specifically exempted from the Washington Industrial Stormwater General Permit requirements (WDOE, 2004).

The preferred alternative also would result in more soils being "paved" than under current conditions. A portion of the site currently is developed (approximately 24,000 square yards [yd^2] in buildings and sidewalks). Redevelopment of the site would result in approximately 28,000 yd^2 of building and pavement coverage (buildings, sidewalks, and parking) when completed (USACE, 2006). During the construction period, there may be increased soil loss over the short term due to the substantial increase in the area of soil disturbance; however, over the long term, soil loss due to wind erosion would be expected to be less because of the increase in the pavement cover.

Site E Alternative

The impacts on geology and soils from operation of the AFRC at Site E would be approximately the same as those under the preferred alternative. A project Dust Control Plan and SWPPP meeting Washington NPDES Construction Stormwater General Permit requirements would be developed before implementation of this alternative, if it is chosen. During the construction phase, the area of soil disturbance would be greater than that for the preferred alternative because most of that site has been paved and developed.

No Action Alternative

Under the no action alternative, conditions affecting the geology and soils would remain the same as those from the current activities. There would be no significant impacts.

4.7 WATER RESOURCES

A review of the National Wetland Inventory maps and topographic maps for the affected area indicated that there are no surface water resources on or near the preferred project site (U.S. Fish and Wildlife Service [USFWS], 2007). The surface water body closest to Sites A and E is a lateral ditch to the Roza Canal. This ditch is a concrete-lined irrigation canal located west of and along the west edge of Site A and Tipp Road, and is not considered suitable fish habitat. During heavy rainfall events, surface drainage may run off into the ditch and eventually into the Roza Canal. Site E is more than 0.25 mile east of the lateral ditch (Figure 4-5). A review of floodplain data and maps further indicated that flood hazards have not been determined for the site (Federal Emergency Management Agency, 1998). Flooding is highly unlikely at either of the action alternative sites. The project Request for Environmental Impact Analysis (Appendix A) reports that water resources would not be affected by the preferred alternative. Therefore, water issues

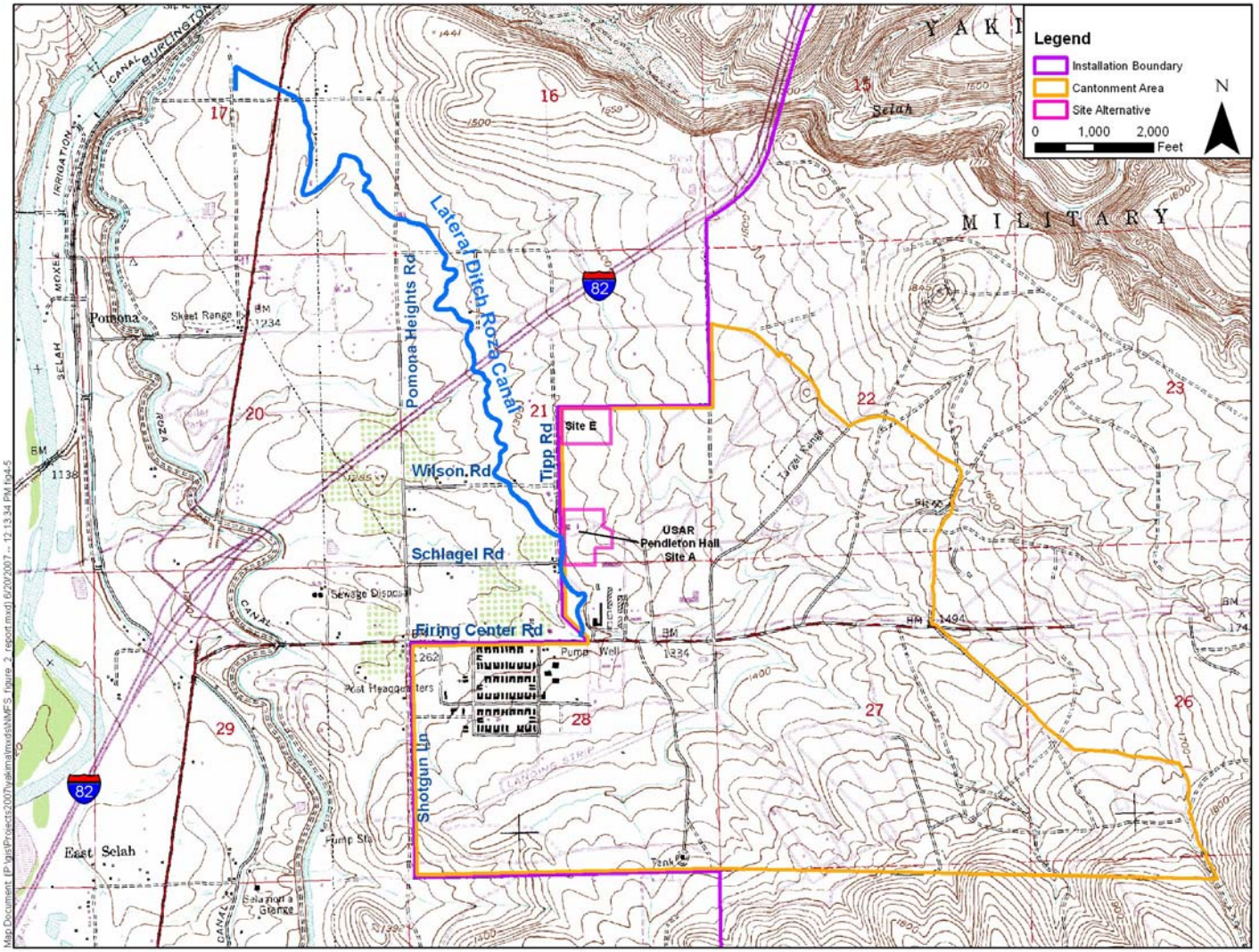

Figure 4-5 Map of Lateral Ditch to the Roza Canal Adjacent to YTC
Source: U.S. Geological Survey (USGS), 1985

are not discussed further in this report. To control runoff from the site, a SWPPP and appropriate BMPs that meet Washington NPDES Construction Stormwater General Permit requirements would be implemented. The current SWPPP would be updated for the AFRC, if appropriate, or replaced with a new SWPPP.

4.8 BIOLOGICAL RESOURCES

YTC provides habitat for 50 mammal, 174 avian, 14 reptile, and 8 amphibian species (YTC DPW ENRD, 2002). YTC is located in the Big Sagebrush/Bluebunch Wheatgrass vegetative zone of the shrub-steppe vegetative province. Twenty sensitive plant species are known to exist at YTC. Most of these species are state-listed sensitive, threatened, or endangered species. Four federal species of concern and one candidate species for threatened and endangered species listing exist at YTC. These include the Columbia milkvetch (*Astragulus columbianus*), gray cryptantha (*Cryptantha leucophaea*), basalt daisy (*Erigeron basalticus*), Hoover's desert-parsley (*Lomatium tuberosum*), and Hoover's tauschia (*Tauschia hooveri*) (YTC DPW ENRD, 2002).

A site visit of both proposed sites conducted on 31 October 2006 by installation staff determined that none of the areas constituted suitable habitat for any state or federally listed species of plant, fish, or wildlife of management emphasis for YTC. The sites were either currently developed as facilities or dominated by cheatgrass and other weedy species indicating prior disturbance. The proposed sites are also surrounded by existing developed areas of the Cantonment Area, other similarly described non-native vegetation communities, and/or rural/residential areas adjacent to the installation, further limiting the suitability for any species of management emphasis on YTC. Therefore, biological resources at YTC would not be affected and a determination of "no effect" has been made for all federally listed species (Leingang, 2007).

In accordance with Army Regulation (AR) 200-3, the Army has initiated early planning and coordination with USFWS and the National Oceanic and Atmospheric Administration (NOAA) Fisheries (National Marine Fisheries Service) to obtain their input on evaluating effects on biological resources due to construction and operation at the preferred alternative site. These consultation letters are included in Appendix B.

4.9 CULTURAL RESOURCES

The preferred alternative and Site E have been previously disturbed. A review of the YTC cultural and historic resources database indicated that there are no known federally protected resources at either site. Neither Building T805 nor Building T806, slated for

deconstruction/demolition, is expected to be eligible for the National Register of Historic Places (Korgel, 2007). This information is consistent with findings and recommendations in the YTC Cultural and Natural Resource Management Plan (YTC DPW ENRD, 2002).[1,2] There would be no effects on cultural resources from the preferred alternative or the no action alternative.

4.10 SOCIOECONOMICS

YTC is located partially within the Yakima Metropolitan Statistical Area (MSA), which comprises Yakima County. In 2005, Yakima County was the 7th most populous county in the state, with the 2nd greatest land area and 15th highest population density (Washington Office of Financial Management, 2006). The remainder of YTC is located in Kittitas County, which is directly north of Yakima County. Kittitas County ranked 25th in population in 2005, 8th in land area, and 28th in population density (Washington Office of Financial Management, 2006). YTC does not contain any military housing, only temporary quarters (bivouac) for training activities. YTC and the immediately surrounding area would not be considered an area of either concentrated minority population or low income populations. Also, the immediately surrounding area has an isolated population of 19 households (3.4 percent of total households). Implementing the preferred alternative would create minor, temporary, beneficial effects on the socioeconomic conditions within the region from construction spending. Nevertheless, this effect would subside at the completion of construction activities.

Socioeconomic analyses generally include detailed investigations of the prevailing population, income, employment, and housing conditions of a community or area of interest. The socioeconomic conditions of a region of influence (ROI) could be affected by changes in the rate of population growth, changes in the demographic characteristics of an ROI, or changes in employment within the ROI caused by the preferred alternative. In addition to these characteristics, populations of special concern, as addressed by EO 12898 (*Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations*, February 1994), are identified and analyzed for environmental justice impacts.

[1] However, the Army invited the Washington State Historic Preservation Officer to participate in the NHPA Section 106 process for the preferred alternative at YTC and to provide input on evaluating potential historic properties. This request letter and response are included in Appendix B.

[2] Documentation of coordination with local Indian Tribes, as specified in NHPA Section 106 of 1966, as amended, and 36 CFR 800 is available at the YTC Cultural Resources Managers Office.

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 President Clinton 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.

Race and ethnicity are two categories of minority populations. A minority population can be defined by race, by ethnicity, or by a combination of the two classifications. According to CEQ (1997), a minority population can be described as the following groups: American Indian or Alaska Native, Asian or Pacific Islander, Black, not of Hispanic origin, or Hispanic. The population of an area is considered to be a minority population if it exceeds 50 percent of the population or the minority population percentage is meaningfully greater than the minority population percentage in the general population.

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 maintains 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
- Native Hawaiian and Other Pacific Islander – 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 consist demographically 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 be defined through ethnicity, where the population under consideration consists demographically 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 not of Hispanic origin. Race and ethnicity each total a population of 100 percent.

Each year, the USCB defines the national poverty thresholds, which are measured in terms of household income dependent on the number of persons within the household. Individuals falling below the poverty threshold ($20,444 for a household of four in 2006) are considered low income individuals (USCB, 2006). The 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.

4.10.1 Affected Environment

The YTC ROI for the socioeconomics analysis was a comparison of the Yakima MSA (Yakima County); Kittitas County; USCB Census Tract 9757, block group 3; and Census Tract 17, block group 5, which contains YTC (Figure 4-6). The immediate YTC ROI was the combined census tracts and block groups.

Economic Development

Personal Income

Median personal income levels increased within all household types in the ROI from 1990 to 2000. The largest nominal percent changes were observed in the combined block groups associated with YTC. In the ROI, the highest median household income was in block group 5, USCB Census Tract 17 ($71,094), while the lowest median household income was $32,546 in Kittitas County (USCB, 2002). The per capita personal income ranged within the ROI from a high of $26,201 (block group 3, USCB Census Tract 9757) to a low of $15,606 in Yakima County (USCB, 2002).

Industry Earnings

Earnings data indicated that personal income within the combined counties increased by 11.8 percent to $6.6 billion from 2001 to 2004 (Bureau of Economic Analysis [BEA], 2006a). This increase in personal income over the period was driven by approximately equal percent increases in Yakima and Kittitas Counties. Overall earnings for the ROI increased 17.6 percent

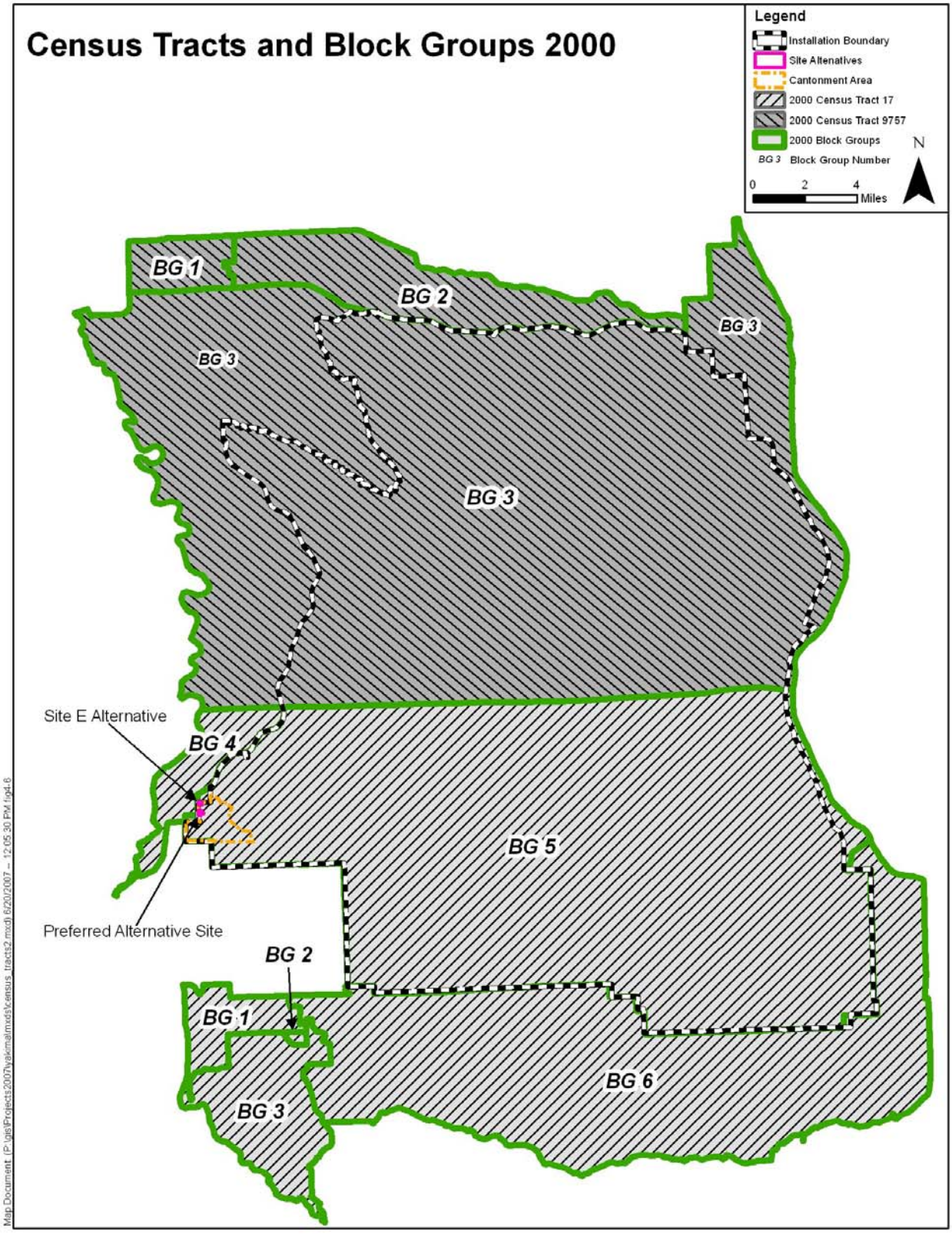

Figure 4-6 Census Tract Map for YTC Area
Source: USCB, 2002

to $4.7 billion, fueled by increases of 16.9 percent in Yakima County to $4.1 billion and 23.6 percent in Kittitas County to $548.5 million (BEA, 2006a). In the combined counties, farm earnings during this period increased 66.4 percent to $616.2 million, and non-farm earnings increased 12.6 percent to $4 billion (BEA, 2006a). When analyzed by industry, the highest percent increase in earnings was observed in arts, entertainment, and recreation (47.8 percent); information (39.7 percent); and real estate, rental, and leasing (38.4 percent). Only manufacturing had decreased industry earnings over the period (11.8 percent). Military earnings in the combined counties increased 78.2 percent to $36.8 million (BEA, 2006a).

Employment

Total full-time and part-time employment increased approximately 2.7 percent from 2001 to 2004 within the combined counties (from 135,046 to 138,724). Arts, entertainment and recreation, and educational services had a greater than 9 percent increase in the number of employment positions during this period. Loss of employment positions within the combined counties was identified in wholesale trade; retail trade; other services, except public administration; and federal, civilian, and military industries (BEA, 2006b). In general, the labor force increased within the combined counties by greater than 9,000 individuals, while the unemployment rate fell 1.8 percent from 2001 (9.4 percent) to 2005 (7.6 percent) (Bureau of Labor Statistics, 2006).

Demographics

The total populations within the Yakima MSA, the combined counties, and the combined USCB census tracts increased approximately 18 percent from 1990 to 2000 (USCB, 1993, 2002). The population of the combined block groups increased by 185 percent from 547 to 1,559 individuals (USCB, 1993, 2002). Table 4-3 details the total population, percentage urban versus rural population, sex, and age within the ROI. The populations within all geographic areas except the combined block groups are approximately equal between male and female (Table 4-4). Within the combined block groups, males are favored slightly at 50.9 percent of the total population. The largest cohort group populations within all geographic areas fall in the 30- to 59-year-old age group. Across all geographic areas, approximately 37 to 47 percent of the population falls within the 30- to 59-year age cohort. The next largest cohort is 0 to 18 years across all geographic areas.

Table 4-3 2000 Population Profile of All Geographic Areas Within the ROI

	Yakima MSA	Combined Counties	Combined Census Tracts	Combined Block Groups
Total Population	222,581	255,943	9,949	1,559
Percent Urban	71.2	69.6	13.4	0.0
Percent Rural	28.8	30.4	86.6	100.0
Male Population	110,580	127,127	4,980	793
0-18 Years	37,948	41,756	1,494	217
19-29 Years	16,765	21,057	650	90
30-59 Years	41,917	47,885	2,146	385
60+ Years	13,950	16,429	690	101
Female Population	112,001	128,816	4,969	766
0-18 Years	36,162	39,894	1,533	250
19-29 Years	16,035	20,287	588	75
30-59 Years	41,338	47,365	2,145	341
60+ Years	18,466	21,270	703	100

Source: USCB, 2002
MSA – Metropolitan Statistical Area

Table 4-4 Sex and Age Cohorts for All Geographic Areas Within the ROI

	Yakima MSA		Combined Counties		Combined Census Tracts		Combined Block Groups	
	Population	Percent	Population	Percent	Population	Percent	Population	Percent
Total Population	222,581		255,943		9,949		1,559	
Sex								
Male	110,580	49.7	127,127	49.7	4,980	50.1	793	50.9
Female	112,001	50.3	128,816	50.3	4,969	49.9	766	49.1
Age Cohort								
0-18 Years	74,110	33.3	81,650	31.9	3,027	30.4	467	30.0
19-29 Years	32,800	14.7	41,344	16.2	1,238	12.4	165	10.6
30-59 Years	83,255	37.4	95,250	37.2	4,291	43.1	726	46.6
60+ Years	32,416	14.6	37,699	14.7	1,393	14.0	201	12.9

Source: USCB, 2002

Housing

The number of housing units in all geographic areas has increased greater than 11 percent from 1990 to 2000 (USCB, 1993, 2002). Table 4-5 details the general housing profile for the ROI. The combined block groups experienced an increase of approximately 176.7 percent from 1990 to 2000, which corresponds to the large population increase during this period. Housing units located in Kittitas County had a greater median value over Yakima County housing units. Within the combined counties, housing units in Kittitas County were 17.2 percent higher in median value, while in the combined block groups, housing units in Kittitas County were 126.7 percent higher in median value.

Table 4-5 Basic Housing Details Within the ROI

	Yakima MSA			Combined Counties			Combined Census Tracts			Combined Block Groups		
	1990	2000	Nominal Percent Change	1990	2000	Nominal Percent Change	1990	2000	Nominal Percent Change	1990	2000	Nominal Percent Change
Housing Units	70,852	79,174	11.8	84,067	95,649	13.8	3,188	3,727	16.9	232	642	176.7
Median Year Built	1963	1970	n/a	1963-1965	1970-1972	n/a	1971-1972	1974-1976	n/a	1972-1975	1971-1977	n/a
Median Value	54,900	113,800	107.29	54,900-60,000	113,800-113,400	107.3-122.3	53,000-65,000	107,500-133,900	107.3-152.6	68,200-87,500	83,800-190,000	107.3-117.1

Source: USCB, 1993, 2002
n/a – not available

Quality of Life

Recreational Opportunities

The YTC Outdoor Recreation Program provides horseback riding, hiking, and mountain biking opportunities on 22 miles of the John Wayne Trail within YTC. Deer and elk hunting also is allowed at YTC (YTC Outdoor Recreation Program, 2007).

The Yakima Valley has numerous opportunities for active and passive recreational activities. Outdoor activities pertain to the nearby mountain ranges, including Mount St. Helens National Volcanic Monument and Mount Rainier National Park, as well as the Yakima River and the L.T. Murray Wildlife Area. The Yakima Valley is known for its abundant wineries, museums, and cultural attractions. There are minor league baseball and basketball teams within the Valley, and numerous opportunities exist for motor sports, golf, soccer, swimming, softball, and tennis.

Educational Opportunities

Within the combined counties, there are 21 school districts, 15 in Yakima County and 6 in Kittitas County (Washington Office of Financial Management, 2006). Average annual enrollment during 2004-05 was 46,120 in Yakima County and 4,588 in Kittitas County (Washington Office of Financial Management, 2006). Local colleges include Central Washington University in Ellensburg, Yakima Valley Community College in Yakima, and Heritage College in Toppenish.

Environmental Justice

Minority Populations

Table 4-6 lists the 2000 demographic profile of the YTC ROI and the population change from 1990 to 2000. Because there are no permanent residents at YTC, the ROI evaluated the surrounding census tracts and block groups. The population within the combined census tracts comprising the YTC ROI increased 18.3 percent from 1990 to 2000, while the combined block groups increased 185 percent during this period (USCB, 1993, 2002). As shown in Table 4-6, neither the combined census tracts nor block groups would be considered a concentrated minority area.

Table 4-6 2000 Demographic Profile of the YTC ROI

Decennial Census Population	Combined Census Tracts		Combined Block Groups	
1990	8,409		547	
2000	9,949		1,559	
Percent Increase	18.3		185.0	
Race/Ethnicity	**Number**	**Percentage**	**Number**	**Percentage**
White, non-Hispanic	7,708	77.5	1,411	90.5
Black/African American	53	0.5	0	0.0
American Indian, Alaska Native, Asian, Native Hawaiian, or Other Pacific Islander	146	1.5	0	0.0
All Other Races or Combination of Races	125	1.2	4	0.3
Hispanic	1,917	19.3	144	9.2
Total Minority Population	2,241	22.5	148	9.5

Source: USCB, 1993, 2002

Limited English Proficiency Populations

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 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 implemented readily.

In 2000, approximately 5,899 households (8 percent) in the Yakima MSA and 6,125 households (7 percent) in the combined counties were considered linguistically isolated[3] (USCB, 2002). Within the YTC ROI, 160 households (4.7 percent) were considered linguistically isolated within the combined census tracts (USCB, 2002). Within the combined block groups of the YTC ROI, 19 households (3.4 percent) were considered linguistically isolated. Table 4-7 lists the number of linguistically isolated households per area by language.

Table 4-7 Linguistically Isolated Households by Area and Language

Language	Areas (number of linguistically isolated households / percent of total linguistically isolated households)			
			YTC ROI	
	Yakima MSA	Combined Counties	Combined Census Tracts	Combined Block Groups
Spanish	5,595 / 94.8	5,785 / 94.4	158 / 98.8	19 / 100.0
Other Indo-European	116 / 2.0	152 / 2.3	0 / 0.0	0 / 0.0
Asian/Pacific Islander	153 / 2.6	194 / 3.2	2 / 0.2	0 / 0.0
Other	35 / 0.6	35 / 0.6	0 / 0.0	0 / 0.0
Total Linguistically Isolated Households	5,899 / 8.0	6,125 / 7.0	160 / 4.7	19 / 3.4
Total Households	74,017	87,422	3,412	557

Source: USCB, 2002

The average household size within the combined block groups was 2.8 persons per household. Within the combined USCB census tract and the combined counties, the average household size was 2.9 persons per household. Within the Yakima MSA, the average household size was 3.0 persons per household (USCB, 2002). Extrapolating average household size and the number of linguistically isolated households gives an estimated number of linguistically isolated individuals in all areas (Table 4-8).

[3] A linguistically isolated household is one in which all members 14 years old or older have at least some difficulty with English or cannot speak English at all (USCB, 2002).

Table 4-8 Linguistically Isolated Individuals by Area and Language

Language	Areas			
			YTC ROI	
	Yakima MSA	Combined Counties	Combined Census Tracts	Combined Block Groups
Spanish	16,785	16,777	458	53
Other Indo-European	348	441	0	0
Asian/Pacific Islander	459	563	6	0
Other	105	102	0	0
Total Linguistically Isolated Individuals	17,697	17,883	464	53
Total Individuals	222,581	255,943	9,949	1,559

Source: USCB, 2002

Low Income Populations

The poverty rate decreased approximately 0.6 percent in the Yakima MSA, to 19.7 percent, and 0.5 percent to 19.2 percent in the combined counties, from 1990 to 2000 (USCB, 1993, 2002). Within the YTC ROI, the 2000 poverty rate within the combined census tracts was 12.2 percent, and within the combined block groups, it was 7.7 percent in 2000 (USCB, 2002).

Protection of Children

In April 1997, EO 13045 (*Protection of Children from Environmental Health Risks and Safety Risks*) was signed. This EO requires that all federal agencies shall make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children, and shall ensure that their policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks. The EO considered environmental health and safety risks to mean risk to health or to safety that is attributable to products or substances that the child is likely to come in contact with or ingest (*i.e.*, air, food, water, soil, and products used or exposed to).

In the combined block groups, including YTC, 30 percent of the total population was 18 years old or younger. Only 12 individuals age 18 years or younger were identified in block group 5, USCB Census Tract 17. The remainder of these individuals were identified in block group 3, USCB Census Tract 9757. No children reside at YTC.

4.10.2 Consequences

Preferred Alternative

Economic Development

Implementing the preferred alternative would not result in significant effects on socioeconomics within the ROI comprising YTC. Under the preferred alternative, approximately 500 employment positions would be relocated to the new AFRC on YTC because of the closure of the Wagenaar USARC and the realignment of the Pendleton USARC. The socioeconomic effects of construction spending were analyzed to determine short-term effects. For economic modeling purposes, 200 of the 419 positions were assumed to be full-time personnel who would relocate to the Yakima MSA from beyond the ROI.

As part of the preferred alternative, a new AFRC and vehicle maintenance shop would be constructed at YTC. The value of the new construction would be approximately $20 million. Through the Economic Impact Forecast System (EIFS), the value of construction would flow through the regional economy as a 0.47 percent increase in total sales volume, a 0.11 percent increase in total personal income, and a 0.11 percent increase in total employment (Appendix C1). The construction investment is anticipated to induce an additional $30.6 million in sales, $5.2 million in total personal income, and 146 employment positions. Additional analysis using lower multipliers for the construction industry based on the Regional Input-output Modeling System (RIMS II) indicated that the final demand for construction activities would generate an additional $35.5 million in final output of products, $11.5 million in household earnings, and 299 new employment positions within the Yakima MSA (BEA, 2006c). Using this range of multipliers indicates the potential range of economic flow-down effects throughout the ROI. This flow-down effect would be minor, would be temporary, and would subside after the completion of construction activities. Construction spending would create short-term beneficial economic effects; nevertheless, the effects would be minor compared to spending within the Yakima MSA in general.

Through the EIFS, the long-term, full-time employment would flow through the regional economy as a 0.16 percent increase in total sales volume, a 0.19 percent increase in total personal income, and a 0.19 percent increase in total employment (Appendix C2). The full-time employment investment is anticipated to induce an additional $10.4 million in sales, $9.5 million in total personal income, and 250 employment positions. Additional analysis using lower multipliers for other government enterprises (*i.e.*, full-time military positions) generated by the RIMS II indicated that the direct effects from these positions would generate an additional $14.4

million in household earnings and 397 new employment positions within the Yakima MSA (BEA, 2006c).

The flow-down effects due to construction and the relocation of personnel throughout the ROI would be minor and temporary, and would subside after the completion of construction and the establishment of a new baseline condition. The new employment positions would create short-term beneficial economic effects; nevertheless, the effects would be minor compared to spending and employment within the Yakima MSA in general.

Environmental Justice

As mentioned previously, YTC and the immediately surrounding area would not be considered an area of either concentrated minority population or low income populations. Also, the area immediately surrounding YTC has a linguistically isolated population of 19 households (3.4 percent of total households). Because implementing the preferred alternative would create only minor beneficial effects from construction activities, environmental justice effects (disproportionately high adverse environmental or human health effects) would not be anticipated for the minority or low income populations within the ROI.

Protection of Children

Because YTC does not contain housing for military families, and the location of the preferred alternative is within a secured area not accessible to neighbors, access to children would be anticipated only for recreational activities that are supervised by an eligible person. Implementing the preferred alternative would not create a potential attractive nuisance because of the low population of children with immediate proximity to the site and measures that would be implemented to ensure controlled access to the construction site. Additionally, implementing the preferred alternative would not increase the number of forecast unhealthy days based on the Air Quality Index, would not substantially increase the amount of hazardous air pollutants long term, and would not create adverse water quality conditions within the general population potable water supply. As such, there would be no significant effects on the environmental health and/or safety risks of children.

Site E Alternative

The socioeconomic effects under this alternative would be the same as those under the preferred alternative.

No Action Alternative

Under the no action alternative, YTC would not accept the relocation of units from the Wagenaar and Pendleton USARCs, and would not construct the AFRC facilities. As such, there would not be any changes in the regional economic outlook; therefore, there would be no significant effects on socioeconomics.

4.11 TRANSPORTATION

4.11.1 Affected Environment

Exit 26 from I-82 provides direct access to the main entrance on Firing Center Road. This entrance is the main point of entry for most traffic to the Cantonment Area. Alternative, but less convenient, entry points include access from I-82 at Exit 11 (15 miles north of the Cantonment Area) in addition to access via the Wanapum-Huntzinger Road exit (Exit 136) from I-90, as well as several feeder roads off State Route 24 (ENSR International, 2005).

Traffic volumes at YTC vary according to the training schedule at the installation. In general, traffic volumes at the main gate on Firing Center Road can be described as light (YTC/Fort Lewis, 2003). Incoming vehicle count data at the Firing Center Road entrance station from 2005-06 (Table 4-9) indicate that traffic was lightest from December to February and that on most weekends, there were fewer vehicles entering the facility than during weekdays. On nearly every date covered by the vehicle count data, the traffic counts were substantially higher in the 0600- to 1800-hour group than in the 1800- to 0600-hour group. This indicates that most of the traffic traveled to and from the site during daylight hours.

4.11.2 Consequences

Preferred Alternative

Traffic on Firing Center Road also would increase slightly as construction-related vehicles enter and exit the AFRC. During AFRC operations, YTC would experience traffic increases above current levels (Table 4-9) because of the increased number of incoming personnel mandated by the BRAC actions. Weekday traffic would not be expected to increase significantly. Weekend traffic would increase during training weekends, but should not increase beyond the current capacity of the roadways or gate currently in place. During training weekends, vehicular traffic associated with the project may be as many as 237 vehicles, based on a maximum trainee count of 250 with ride sharing of approximately 5 percent. Maximum average hourly traffic flow for the YTC Firing Center Road gate is approximately 69 vehicles per hour (VPH) (based on a maximum

Table 4-9 YTC Incoming Vehicle Counts for Firing Center Road

Day	Oct 05 Count		Nov 05 Count		Dec 05 Count		Jan 06 Count		Feb 06 Count		Mar 06 Count		Apr 06 Count	
	Mids	Days	Mids	Days	Mids	Days	Mids	Days	Mids	Days	Mids	Days	Mids	Days
1	121	337	80	564	191	526	29	53	60	568	92	528	188	374
2	88	349	90	393	53	475	23	82	50	540	91	501	114	331
3	82	485	72	468	86	295	35	433	57	399	108	567	83	472
4	119	739	77	500	36	241	53	357	100	195	181	499	112	365
5	195	643	99	255	96	513	73	416	50	122	189	389	66	439
6	290	712	70	244	130	467	48	348	53	458	39	533	47	412
7	114	470	79	444	104	514	51	305	97	505	96	605	73	514
8	83	306	84	577	114	459	51	214	65	465	136	484	79	148
9	145	198	72	509	61	564	34	335	75	410	87	549	41	132
10	77	259	69	450	69	235	29	514	76	563	67	530	80	457
11	75	823	60	158	66	162	36	551	123	264	108	226	81	555
12	117	688	66	167	57	498	30	465	113	204	57	260	48	504
13	90	681	61	209	68	531	46	286	59	479	81	540	69	568
14	141	541	72	471	63	501	34	159	86	550	49	551	59	444
15	109	273	94	678	74	538	24	122	149	526	99	583	23	143
16	65	222	82	708	80	294	35	103	63	420	84	537	60	102
17	41	437	96	431	60	84	55	326	70	343	93	585	146	337
18	81	497	65	481	72	135	39	472	60	176	166	292	78	522
19	108	103	116	253	42	376	37	459	55	181	142	311	114	566
20	86	554	66	180	63	430	43	355	52	155	53	503	97	599
21	74	413	71	529	77	284	112	88	67	511	90	785	84	500
22	58	161	93	600	42	420	24	61	94	433	74	648	187	290
23	108	173	76	430	32	183	28	450	76	541	123	640	138	285
24	62	522	45	105	32	56	39	565	114	439	112	481	87	741
25	59	563	42	208	22	35	49	685	57	172	79	250	139	732
26	90	608	56	168	26	166	54	353	57	157	81	173	81	682
27	62	610	64	153	510	248	52	340	62	420	97	486	111	549
28	87	492	73	536	49	267	61	155	114	334	69	468	88	445
29	32	227	94	480	49	251	34	143			85	541	95	177
30	65	218	64	594	34	204	75	450			90	508	100	237
31	60	421			27	132	44	515			79	473		
	2984	13725	2248	11943	2485	10084	1377	10160	2154	10530	2997	15026	2768	12622
TOTAL:	16709		14191		12569		11537		12684		18023		15390	

Legend:

1st Column is the Midshift count from 1800-0600 hrs
2nd Column is the Dayshift count from 0600-1800 hrs
1st Column is the Midshift count from 1900-0700 hrs
2nd Column is the Dayshift count from 0700-1900 hrs

Dark Gray highlight = USAR Drill weekend
Black highlight = ARNG Drill weekend
Light Gray highlight = administrators only or no units

Table 4-9 YTC Incoming Vehicle Counts for Firing Center Road (continued)

Day	May 06 Count		June 06 Count		Jul 06 Count		Aug 06 Count		Sep 06 Count		Oct 06 Count	
	Mids	Days	Mids	Days	Mids	Days	Mids	Days	Mids	Days	Mids	Days
1	111	602	66	534	83	95	73	558	70	109	59	237
2	117	544	73	463	35	61	126	530	54	90	107	484
3	62	585	726	291	47	149	95	556	33	87	221	522
4	115	522	84	327	39	47	110	573	51	103	230	481
5	135	604	105	385	39	567	120	204	105	426	144	565
6	312	480	85	460	149	580	71	188	169	445	179	456
7	186	365	100	499	130	651	71	540	136	510	93	261
8	88	469	122	566	274	714	89	582	182	415	104	194
9	79	530	184	471	257	347	186	491	146	338	56	304
10	107	597	122	167	163	681	214	428	123	268	226	706
11	99	452	89	164	193	677	148	411	135	401	185	505
12	114	604	77	526	233	720	77	268	128	464	204	544
13	101	182	111	552	200	653	108	266	196	412	186	528
14	92	210	131	567	243	710	127	518	167	408	164	577
15	63	599	122	451	211	423	171	421	142	423	160	260
16	77	583	69	386	235	371	234	389	92	160	89	456
17	120	568	120	174	209	681	186	326	88	151	155	453
18	74	571	80	172	222	778	159	378	115	509	150	395
19	188	603	89	475	228	757	65	125	190	373	131	397
20	131	313	114	463	250	785	68	132	170	379	138	423
21	166	275	159	618	245	594	114	369	160	432	113	253
22	98	395	115	521	109	345	164	423	171	301	91	264
23	121	584	86	504	96	158	170	341	78	100	84	492
24	79	370	102	258	75	482	186	391	75	145	137	540
25	59	501	79	186	86	480	303	313	113	424	182	480
26	58	304	83	490	176	597	41	140	154	533	209	444
27	69	58	92	394	131	509	49	114	143	468	156	375
28	32	135	98	629	133	512	74	447	146	434	93	194
29	37	69	100	552	63	90	121	475	174	401	90	180
30	48	488	115	434	60	110	169	422	78	217	127	317
31	80	419			75	432	137	434			138	385
	3218	13581	3698	12679	4689	14756	4026	11753	3784	9926	4401	12672
TOTAL:	16799		16377		19445		15779		13710		17073	

Legend:

1st Column is the Midshift count from 1800-0600 hrs
2nd Column is the Dayshift count from 0600-1800 hrs
1st Column is the Midshift count from 1900-0700 hrs
2nd Column is the Dayshift count from 0700-1900 hrs

Dark Gray highlight = USAR Drill weekend
Black highlight = ARNG Drill weekend
Light Gray highlight = administrators only or no units

count of 823 vehicles over a 12-hour shift from the 2005-06 dataset). Checkpoint processing rates at other installations for incoming traffic with 100 percent identification and vehicle decal check are 300 to 400 vehicles per checker per hour (USACE, 2004). General transportation analysis guidelines and practices provide for estimating the peak VPH flow at 10 percent of the average daily traffic (ADT) (National Research Council, 2000). With the new AFRC in operation, the ADT would not be expected to exceed 93 VPH, which is well below the 300- to 400-VPH processing rate for a typical installation gate. The capacity of Firing Center Road would not be expected to be affected appreciably as a result of implementing the BRAC actions at YTC. Some of the increased traffic flow could result in slight delays at the security gate, which could cause some inconvenience to neighbors who also are required to pass through the gate to access their private driveways. However, capacity of the existing gate and roadway should continue to function with minimal delays.

Nevertheless, the traffic volumes associated with the preferred alternative would result in shift averages on the weekend days that would still be well below weekday shift volumes.

Site E Alternative

The transportation effects under this alternative would be the same as those under the preferred alternative.

No Action Alternative

Under the no action alternative, YTC would not accept the assigned units and would not construct the AFRC facilities or parking structures. Therefore, there would be no change to traffic within the YTC Cantonment Area.

4.12 UTILITIES

4.12.1 Affected Environment

Potable Water Supply

Potable water for the YTC Cantonment Area is provided by three groundwater wells and three storage tanks with a combined capacity of 1.13 million gallons (ENSR International, 2005). Summer (peak) demand for water at YTC averages approximately 200,000 gallons per day (gpd), with 75 percent of the water needs coming from the Cantonment Area system. Water is treated at the wellheads by chlorination (ENSR International, 2005). Water for the proposed AFRC facilities would come from existing water lines now leading to Buildings T805 and T806 (Figure 4-7).

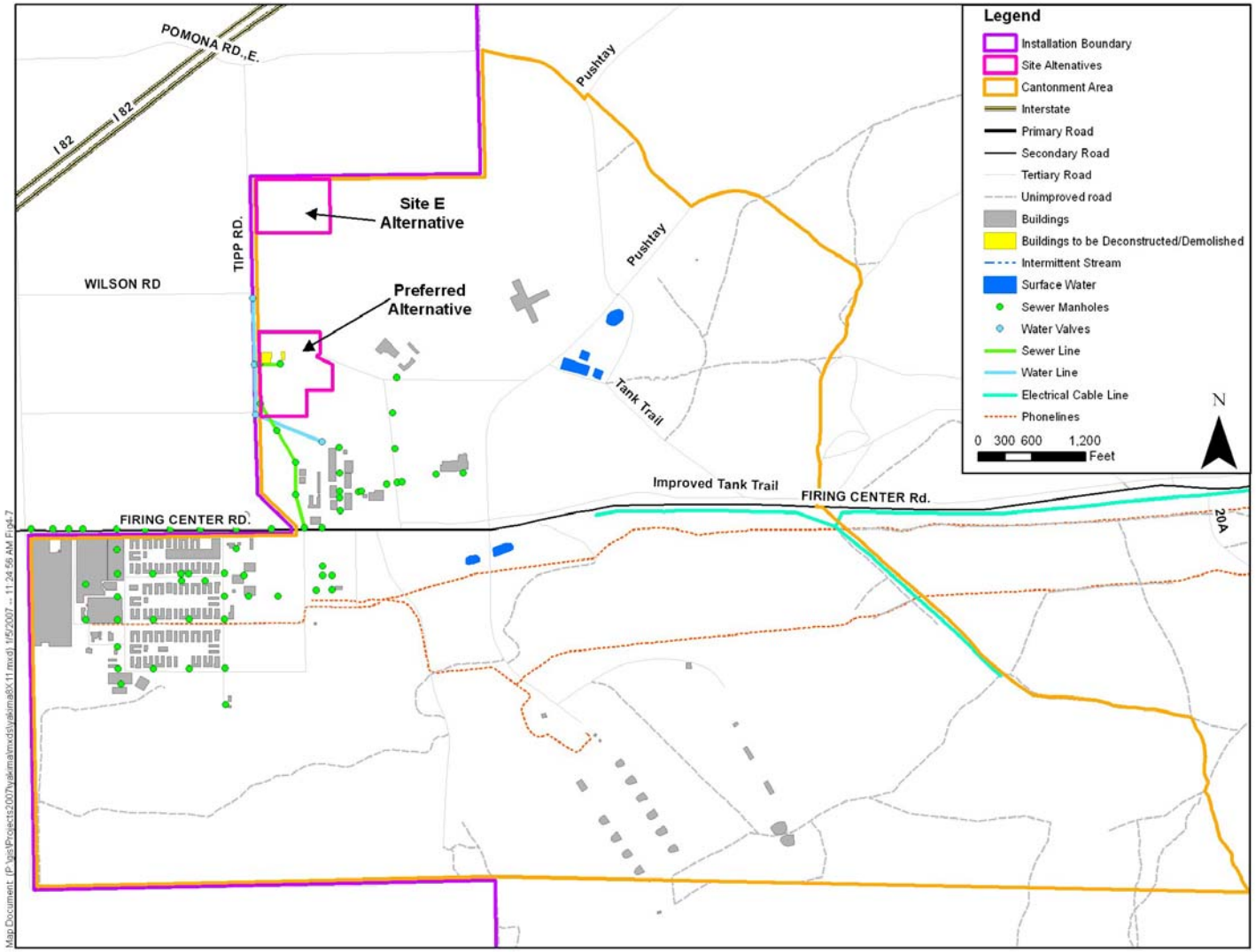

Figure 4-7 YTC Cantonment Area Utilities Map
Source: YTC DPW ENRD, 2007

Wastewater System

YTC operates a single off-installation treatment plant that lies west of the Cantonment Area and discharges into the Yakima River. The plant provides primary and secondary treatment and has a permitted capacity of 720,000 gpd (ENSR International, 2005). The wastewater plant primarily treats domestic wastewater and has an estimated daily peak flow of 150,000 gpd. The proposed facility in the preferred alternative would discharge to YTC's wastewater treatment plant via sanitary sewer lines currently leading to Buildings T805 and T806.

Stormwater System

No stormwater collection system is in place for Buildings T805 and T806 and their associated parking lots at YTC. Stormwater drainage at YTC is generally through natural settings (*e.g.*, interim creeks and valleys). Natural drainage is enhanced by curbing, parking lots, and ditches. Before construction, a SWPPP meeting the Washington NPDES Construction Stormwater General Permit requirements with appropriate BMPs would be developed and implemented.

Energy Sources

Pacific Power and Light supplies electrical power to the Cantonment Area (Figure 4-7). Cascade Natural Gas Corporation supplies natural gas, the primary source of heating energy, to YTC. Diesel and propane fuel backup is also used for heating. The new facilities in the preferred alternative would tie in to these existing energy sources to meet their energy needs. Replacing deteriorating facilities with new facilities is anticipated to result in energy savings. The Army would construct all new facilities to meet the Silver level in the Leadership in Energy and Environmental Design (LEED) ratings system, which is used by the U.S. Green Building Council, beginning with the Fiscal Year 2008 military construction program.

LEED is a voluntary, consensus-based national standard for developing high-performance buildings. LEED emphasizes state-of-the-art strategies for sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality (U.S. Green Building Council, n.d.).

Communications

Telephone infrastructure exists at the preferred alternative site. The project design calls for installation of a fiber optic network. Planned cabling would provide required communications infrastructure to support the AFRC mission.

Solid Waste

Non-hazardous solid waste is collected and disposed of off-site by contract disposal services. A 4-cubic-yard trash receptacle is emptied weekly at Buildings T805 and T806. A household waste recycling program is also in place at the existing buildings.

Demolition/deconstruction and construction debris would be disposed of at WDOE-permitted, off-site landfills.

4.12.2 Consequences

Preferred Alternative

Implementation of the preferred alternative would create some new consumption of water and energy and generate new or increased volumes of wastewater and solid waste. The existing capacities for potable water production, wastewater treatment, energy distribution, and non-hazardous solid waste disposal are adequate to support the preferred alternative. Portions of Buildings T805 and T806 that could not be deconstructed would generate demolition debris. Nonresidential waste assessments at 23 projects in the United States found variable waste generation rates of 36 to 358 pounds of demolition debris per sf, with an average of 155 pounds (USEPA, 1998). Debris also would be generated from the construction process. Nonresidential waste assessments for six projects in the Pacific Northwest found that an average of 3.89 pounds of construction debris per sf was generated. Applying this statistic to the new AFRC would yield a construction debris estimate of approximately 190 tons.

Environmental regulations require characterization of demolition debris to determine proper disposal criteria. Construction and demolition debris would be managed in accordance with RCRA and the Washington Dangerous Waste Regulations in Title 173 of the Washington Administrative Code, Chapter 303.

The asbestos survey results for the buildings would be evaluated so that the proper abatement procedures could be designed and implemented before deconstruction/demolition. Building materials would be characterized for lead before deconstruction/demolition. Lead and asbestos hazards are discussed in Section 4.13. Should lead or asbestos be present, they would be disposed of off-installation because these wastes are prohibited at the YTC landfill. Asbestos wastes would not be disposed of at the YTC landfill. During AFRC operations, the non-hazardous solid waste stream volume at YTC would be expected to increase by no more than 1,900 pounds per day. Propane storage would be required because there would be an increase in propane use.

Site E Alternative

Existing utility infrastructure within the YTC Cantonment Area would be extended to Site E. A potable water line at the transient motor pool would be extended more than 750 feet north to Site E. Existing sanitary wastewater and natural gas pipelines at Site A would be extended more than 1,250 feet north to the site. Electrical service lines from the existing power line along Tipp Road would also be extended into the site.

Localized, temporary disruptions to utility service at YTC and nearby off-installation neighborhoods may be necessary during the construction and installation of the additional utility services. YTC would coordinate with the utility service providers to minimize the disruption of services to the extent possible.

No long-term effects on utility systems would be expected from implementing the Site E alternative. Potentially minor, indirect beneficial effects could result from this alternative in that the additional infrastructure development could more readily facilitate YTC's development and use of Site C in the future.

No Action Alternative

Under the no action alternative, no USAR troops would be relocated to YTC. The utility systems would not be changed or adversely affected.

4.13 HAZARDOUS AND TOXIC WASTES, MATERIALS, AND SUBSTANCES

Hazardous and toxic materials include substances that, because of their quantity; concentration; or physical, chemical, or infectious characteristics, may present substantial danger to public health or the environment when released or managed improperly. The terms "hazardous material," "hazardous waste," and "hazardous substance" have specific legal and scientific definitions in federal regulations.

Hazardous materials are defined under DOT regulations as chemicals that present risks to safety, health, and property during transportation. DOT regulations include requirements for shipping, packaging, labeling, transport vehicle placarding, and training of personnel who handle hazardous materials.

Hazardous wastes are defined and regulated by RCRA and the Hazardous and Solid Waste Amendments of 1984. RCRA considers a waste hazardous if it meets certain levels of reactivity, ignitability, corrosivity, or toxicity, or otherwise is listed as a hazardous waste in 40 CFR 261.

RCRA regulations include detailed requirements for facilities that generate, transport, store, treat, or dispose of hazardous wastes.

Hazardous substances are defined by the CWA and CERCLA (or Superfund) as chemicals that are harmful to aquatic life or the environment if spilled or released into the environment.

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 substances under the provisions of CERCLA and the Superfund Amendments and Reauthorization Act.

The disposal of polychlorinated biphenyls (PCBs) is regulated under the Toxic Substances Control Act, which banned the manufacture and distribution of PCBs except for those used in closed systems. By federal definition, "PCB equipment" is that which contains 500 ppm of PCBs or more. "PCB-contaminated equipment" is defined as equipment containing PCB concentrations of 50 ppm or greater, but less than 500 ppm. "Non-PCB equipment" is equipment with a PCB concentration less than 50 ppm. USEPA regulates the removal and disposal of all sources of PCBs containing 50 ppm or more.

4.13.1 Affected Environment

Historical hazardous materials and waste issues of concern at YTC include unexploded ordnance (UXO), asbestos-containing material (ACM), lead-based paint (LBP), pesticides, and potential groundwater and/or soil contamination from inactive landfills. The preferred alternative site is situated between a transient motor pool to the north and the WAARNG tactical vehicle storage yard to the south (Figure 2-1). UXO is not an issue in the Cantonment Area and is therefore of no consequence to this project (Nissen, 2006). There are no IRP sites within 1,000 feet of the proposed project site (Army Defense Environmental Restoration Program [ADERP], 2006).

Current activities and maintenance processes at YTC require the use of hazardous and toxic chemicals (paints, solvents, thinners, adhesives, oils, cleaners, pesticides, batteries, acids, bases, compressed gases, and CFCs). The Army and USEPA encourage a reduction in the use of these materials. The vehicle maintenance facility associated with the preferred alternative is anticipated to store only small amounts of chemicals, consistent with practices at other vehicle maintenance facilities at YTC.

In accordance with state and federal waste regulations, hazardous waste generally is stored in satellite accumulation areas or is transported off-site for proper disposal within 90 days, as required by applicable regulations.

Current plans (*i.e.*, Spill Prevention Control and Countermeasure Plans and SWPPP) address spill prevention and cleanup, and detail site decontamination procedures. Modifications to these plans and other plans may be required.

Lead-based Paint

Lead is a highly toxic metal that was used for many years in paint on and around facilities. Lead exposure can cause a range of health effects, from behavioral problems and learning disabilities to seizures and death. Army lead hazard management policy is outlined in Section 4.6 of AR 200-1, *Environmental Protection and Enhancement*. It is reasonable to assume that facilities at YTC constructed or renovated before 1978, including Buildings T805 and T806, could contain LBP. Deconstruction/demolition or renovation of structures built before 1978 typically requires removal of lead-containing materials. In such cases, YTC and its contractors would follow industry and Army standards for the encapsulation, removal, and disposal of the LBP or lead-containing materials. The two facilities to be deconstructed/demolished would require prior surveying for LBP.

Asbestos-containing Material

USEPA, in accordance with Section 112 of the CAA, established a regulation related to ACM. This regulation requires that owners or operators notify the applicable state and local agencies and/or the USEPA regional offices before demolition or renovation of any building that contains a certain threshold amount of asbestos, defined as more than 1 percent in Subpart F, 40 CFR 763, §1; the Asbestos Hazard Emergency Response Act of 1986; and the subsequent Asbestos in Schools Hazards Abatement Reauthorization Act of 1992.

Asbestos is the name for a group of natural minerals that separate into strong, fine, heat-resistant fibers. When asbestos degrades into microscopic fibers, it becomes a health hazard. This can happen when ACM is disturbed, typically during renovation or deconstruction/demolition of older structures. Degraded or crumbled asbestos is termed “friable” asbestos. ACM has been used in various forms for thermal protection, acoustical and decorative purposes, boiler and pipe insulation, construction materials, and appliances. Facilities most likely to contain friable asbestos are those built or remodeled from 1945 to 1986. The Army asbestos policy is established in Section 8.0 of AR 200-1, *Environmental Protection and Enhancement*. When

asbestos removal is required, YTC and its contractors would follow industry and Army standards for the encapsulation, removal, and disposal of ACM. The two facilities to be deconstructed/demolished have been surveyed for ACM.

4.13.2 Consequences

Preferred Alternative

Potential construction and deconstruction/demolition activities at YTC could produce short-term releases of LBP, or increase the quantity of hazardous and toxic wastes requiring disposal. Before deconstruction/demolition, heating/ventilation/air conditioning (HVAC) systems in Buildings T805 and T806 would be drained of CFC-containing refrigerants by USEPA-licensed HVAC personnel and properly containerized. Hazardous and toxic wastes and construction debris would be disposed of in accordance with local, city, state, and county regulations.

Before deconstruction/demolition associated with the preferred alternative, assessments for LBP and ACM would be completed. Based on the findings of those assessments, abatement by certified personnel may be required. Abatement and removal actions would result in hazardous and toxic wastes that would require disposal in a proper facility.

Any structures from which all ACM could not be removed would be demolished in accordance with demolition practices under the asbestos National Emission Standards for Hazardous Air Pollutants (USEPA, 1992). All building waste from demolition activities would be removed from YTC and disposed of at state-approved facilities.

Adverse effects from demolition and renovation activities would be prevented by developing lead abatement specifications and using a competent abatement contractor for removal of lead-covered building materials. These materials would be removed and disposed of per the abatement specifications and Waste Minimization Plan.

No IRP sites would be affected by the preferred alternative (ADERP, 2006).

Selection of the preferred alternative would result in increased petroleum, oils, and lubricants (POL) use at YTC once all of the realigned units are in place. An organizational-level maintenance shop is scheduled to be constructed to replace an existing facility, with an expanded capacity that would provide lube, oil, and filter changes for military vehicles used by the AFRC. Additionally, minor vehicle maintenance activities would be performed, resulting in generation of

minor quantities of waste oil, antifreeze, lead-acid and other types of batteries, parts cleaners, fluids, and rags that would require accumulation and recycling or disposal.

Site E Alternative

There would be no requirement to manage demolition debris or LBP or ACM waste streams under this alternative, unlike the Site A alternative. Construction debris, POL, and other vehicle maintenance waste streams would be managed as described under the preferred alternative. Hazardous and toxic waste and materials management programs at YTC would be less affected by site development activities in the short term under this alternative compared to the preferred alternative because of the lack of demolition waste.

No Action Alternative

Under the no action alternative, conditions at the installation with regard to hazardous materials and wastes would remain the same, with no significant impacts. No adverse impacts or beneficial improvements would occur with selection of the no action alternative.

4.14 CUMULATIVE EFFECTS SUMMARY

CEQ regulations at 40 CFR 1508.27 define a cumulative impact as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."

YTC has a continuing need for repair, alteration, renovation, addition, or construction of new facility space to meet current and future mission requirements. Larger projects with funding requirements outside the normal operational budgets are programmed to compete for funding sources, such as military construction congressional appropriations. Projects in these programs are not guaranteed funding and must compete with other military needs. For cumulative impacts, the interest would be in projects that are expected to be funded and constructed in the foreseeable future that, along with the preferred alternative, might increase or mitigate environmental impacts.

There are no known planned construction projects or land use changes near the Cantonment Area that would be expected to have an impact on the preferred alternative. Cantonment Area actions planned at YTC include:

- Development of battalion-size transient unit support areas
- Consolidation of installation headquarters, training operations, and logistic support in a new facility
- Addition of a consolidated open dining and community building
- Construction of a consolidated Army lodging/unaccompanied permanent party housing facility
- Addition of a consolidated training support facility to link live, virtual, and constructive training within Yakima and between Yakima and other locations
- Development of combined rotational and installation support aviation facilities near range control forward (YTC/Fort Lewis, 2003)

The environmental effects from implementing the other planned Cantonment Area actions combined with the environmental effects from the development and operation of the AFRC are not expected to be collectively significant.

Additional projects for YTC outside the Cantonment Area include range development programs, airfield expansion, and sewage treatment plant redesign. The construction of these facilities would increase noise, air emissions, and impermeable surfaces, but collectively would not cause major environmental impacts. Nevertheless, none of the potential projects indicate plans to change the current density of use at YTC significantly. As individual projects become more definitive and the potential for funding support increases, additional, more focused environmental analyses would be appropriate.

4.15 BEST MANAGEMENT PRACTICES SUMMARY

BMPs specify protection measures to reduce and/or eliminate less than significant effects anticipated to result from undertaking the preferred alternative. The BMPs are therefore not mitigation measures.

BMPs must be followed to control fugitive dust and soil erosion on the construction sites.

Existing facilities at the preferred alternative site must be surveyed for LBP and ACM before deconstruction/demolition. If their presence is indicated, then proper deconstruction/demolition and debris disposal procedures must be followed. Hazardous materials and toxic wastes related to the construction projects must be handled, stored, and disposed of properly in accordance with applicable federal and state laws and regulations, as well as applicable DoD and Army policies and regulations.

4.16 MITIGATION SUMMARY

Mitigation measures are actions required to reduce the significant environmental impacts of a proposed or alternative action. None of the environmental impacts discussed in this EA are expected to be significant. Therefore, no mitigation measures are necessary for the preferred alternative.

4.17 IRRETRIEVABLE AND IRREVERSIBLE COMMITMENT OF RESOURCES

NEPA requires that EAs include identification of "… any irreversible and irretrievable commitments of resources which would be involved in the preferred alternative should it be implemented." Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that the uses of these resources have on future generations. Irreversible effects primarily result from the use or destruction of a specific resource (*e.g.*, energy and minerals) that cannot be replaced within a reasonable time. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action (*e.g.*, extinction of a threatened or endangered species or disturbance of a cultural site).

For the preferred alternative, most resource commitments are neither irreversible nor irretrievable. Most impacts are short-term and temporary, or longer-lasting but negligible. The preferred alternative would require the use of fuels for vehicle operations at YTC. This fuel would be required as long as construction activities and military activities occur. Deconstruction/demolition, construction, or renovation activities would require expenditure of fuels and other materials. There would be irreversible or irretrievable commitments of construction materials such as concrete; sand; bricks; steel; and renovation materials, such as insulation, wiring, and paint. The use of human resources for facility construction is considered an irretrievable loss, only in that it would preclude such personnel from engaging in other work. The use of human resources for the preferred alternative represents employment opportunities and is considered beneficial.

5.0 FINDINGS AND CONCLUSIONS

5.1 FINDINGS

5.1.1 Consequences of the Realignment (Preferred) Alternative

With the preferred alternative, potential impacts on natural and visual resources generally would occur within the physical boundaries of the preferred alternative location. No long-term adverse impacts on earth (geology, topography, or soils), cultural and biological resources, water (surface water, groundwater, floodplains, or wetlands), or land use are expected. Similarly, no significant adverse impacts on utilities or the associated infrastructure would occur.

Minor adverse impacts on air, noise, transportation, and visual resources would be minimized by BMPs. The preferred alternative would not generate disproportionate adverse human or environmental health impacts on minority or low income populations. No adverse socioeconomic impacts on military or regional populations, the economy, employment, income, housing, community services, or education would result from implementation of the preferred alternative.

BMPs would reduce or eliminate the potential short-term effects on the environment due to deconstruction/demolition and construction activities. Similarly, disposal regulations are in place to ensure proper disposal of generated waste and construction debris potentially contaminated with LBP or ACM.

5.1.2 Consequences of the Site E Alternative

The aesthetic and visual resource, air quality, noise, water and biological resource, socioeconomic, and transportation impacts from implementing this alternative would be the same as the effects on these resources under the preferred alternative. Implementing this alternative would limit this site's potential use for mobilization activities but would not otherwise affect land uses. Impacts on soil could be slightly greater compared to the preferred alternative site because a larger area would be disturbed. Localized, temporary disruptions to utility services could occur during construction and installation of additional services, but no long-term effects on utility services are expected. Effects on hazardous and toxic waste and materials management programs at YTC in the short term would be expected to be somewhat less than those under the preferred alternative because of the lack of demolition wastes.

5.1.3 Consequences of the No Action Alternative

Under the no action alternative, no new construction or deconstruction/demolition would occur, and the existing Cantonment Area facilities would continue to be used. Additionally, air

emissions, traffic, noise, geological or soil disturbances, water resources, socioeconomics, utilities, or hazardous waste would be changed only through the continued use of the existing facilities.

5.2 CONCLUSIONS

This section summarizes the environmental effects of undertaking the preferred alternative and identifies required permits and plans for implementing the preferred alternative and for supporting the FNSI.

5.2.1 Summary of Environmental Effects

Short-term land use disturbances would result from constructing the preferred alternative. AFRC operations would be consistent with the local surrounding land use. Implementing the preferred alternative would improve facilities in the Cantonment Area but would result in changes in views and nighttime lighting visible to nearby neighbors. The aesthetic character of the Cantonment Area may be improved by removal of the older buildings and construction of new facilities.

Construction and deconstruction/demolition activities for the preferred alternative could produce slight increases in criteria pollutant emissions but would not affect local or regional air quality. Slight increases in noise levels would be expected from construction equipment and increased traffic during AFRC operations.

There would be no significant effects on biological, cultural, geological, groundwater, and surface water resources from the preferred alternative. Construction activity at the AFRC site would increase the short-term erosion potential. There would be no expected impact on wetlands or adverse effects on floodplains.

Temporary, minor, beneficial socioeconomic effects would occur from the preferred alternative construction. There would be no significant effects on employment, income, or demographics resulting from implementing the BRAC actions. A minor increase in traffic would be expected on drill weekends. The water, wastewater, and electrical utility system capacities are adequate to provide for the increase in demand that would be expected from the preferred alternative. There would be an increase in the use of petroleum products and in the generation of construction debris. In addition, there would be a minor long-term increase in hazardous materials and waste management operations because of the increase in vehicle maintenance activities at the installation.

5.2.2 Required Permits and Plans to Support a Finding of No Significant Impact

Before implementation of the preferred alternative, the following permits must be obtained:

- Submit project Dust Control Plan to YRCAA
- Apply for and obtain demolition permit from YRCAA
- Obtain WDOE coverage letter after submittal of Washington NPDES Construction Stormwater General Permit

The above items must be completed before the proposed action but do not have to be completed before the FNSI is signed. A construction SWPPP must also be developed before AFRC construction begins.

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PL 92-574

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16 USC §§1531-1544 (1973, as amended, Endangered Species Act)

16 USC §670 (Sikes Act of 1960, as amended)

16 USC §470 (National Historic Preservation Act of 1966)

25 USC §§3001-3013 (Native American Graves Protection and Repatriation Act of 1990)

33 USC §§7401 *et seq.* (Clean Water Act)

42 USC §§11001-11050 (Emergency Preparedness and Community Right to Know Act of 1986)

42 USC §§6901-69911 (Resource Conservation and Recovery Act of 1976)

42 USC §§4321-4370D (1969, National Environmental Policy Act, as amended)

42 USC §§9601 *et seq.* (Comprehensive Environmental Response, Compensation, and Liability Act)

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AR 200-3

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Hazardous and Solid Waste Amendments of 1984

9.0 PERSONS CONSULTED

Larry Olliff	USACE, Mobile District, NEPA Support Team
Pete Nissen	YTC Natural Resources Manager
Mike Nelson	USACE, Seattle District, Representing 70th RSC
Dave Roden	USACE, Seattle District, Representing 70th RSC
Danny Bowers	YTC Maintenance Supervisor
Margaret Pounds	YTC Deputy Director Public Works
Bill Van Hoesen	YTC NEPA Program Manager
John Rohrbaugh	YTC Natural Resources GIS Specialist/Information Systems Manager
Rick Koch	YTC Natural Resources Environmental Compliance Manager
Randy Korgel	YTC Cultural Resources Manager
Bill Youngman	USACE, Mobile District
Patricia Bradford	Unit Administrator, 737th Transportation Company, Det 1
John Scott McDonald	YTC, Environmental Contractor
Colin Leingang	YTC, Wildlife Resources Manager

APPENDIX A

PROJECT REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS

Yakima Training Center
Request for Environmental Impact Analysis

INSTRUCTIONS: Sections 1 through 3 to be completed by Proponent; Sections 4 and 5 to be completed by Yakima Training Center (YTC), Public Works - Environmental and Natural Resources Division (PW-ENRD). Press the F1 key while a field is selected to see a description of that field and what information should be entered.

1. Proponent Information

Proponents located outside of YTC please fill in the following information. Local Proponents need only fill in the information in Section 1.1.

Name: LTC Douglas Willetts (70th RRC) **Phone:** (206) 301-2004 **Fax:** ( ) -

Title: **DSN:** - **Fax DSN:** -

Email: douglas.d.willets@us.army.mil

1.1. Local Proponent Information

If the Proponent is not located at YTC, a Local Proponent should be designated who is familiar with the proposed action and will be available to answer questions and attend scoping meetings if necessary.

Name: **Title:** **Phone:** -

2. Proposed Action

Title: 2005 BRAC Program; Armed Forces Reserve Center (ARFC) at Yakima Training Center

Purpose of and Need for the Action: Realignment of ARFC facilities to Yakima Training Center, WA under provisions of the Defense Base Closure and Realignment Act of 1990, Public Law 101-510, and under the BRAC 2005 Commission recommendations.

Description of the Action: Construction of a new AFRC at YTC, and consolidation and relocation of the units assigned to the Wagenaar and Pendelton facilities to the new facility at YTC. The new facility will be capable of accomodating WAARNG units currently served by the Ellensburg Readiness Center, if the Washington State Military Department decides to do so at a future date.

Timing/Sequencing: In accordance with the approved BRAC 2005, construction on the new AFRC must begin in 2008 to enable occupancy by 2011.

Specific Location: YTC cantonment area (overlayed on footprint of building 805, 806, and associated motor pool.

Similar or Connected Actions: The closure of Wagenaar AFRC Pasco, WA, closure of the Ellensburg Readiness Center, closure and deconstruction of Pendelton AFRC at YTC (buildings 805 and 806), realignment of Reserve Component forces currently supported by Wagenaar and Pendleton AFRCs, and the ability to accommodate WAARNG forces supported by the Ellensburg Readiness Center at a future date. Separate NEPA will be prepared for these connected action by their respective proponents, as needed.

3. Preliminary Environmental Survey

Use the following section to identify issues that will be considered further in the resulting compliance documentation. If applicable, discuss both temporary activities associated with implementation of the action (i.e., construction of a

facility) as well as any longer-term or ongoing activities (i.e., maintenance and operation of the facility). Any uncertainty will result in a “Yes” response. "Yes" responses need to be explained further.

3.1. Land Use

Will there be any changes to current land use as a result of the action?

☒ No ☐ Yes The proposed AFRC facility will be built within the footprint of an exist AFRC facility at YTC. Consequently, land use will remain unchanged at the site.

Who owns the property on which the action will take place? U. S. Army, Yakima Training Center

Does the action involve a real estate transaction?

☐ No ☒ Yes Will need to check with FTL Real Estate to determine if a revised Land Use Agreement will be needed in support of this action

3.2. Air Quality

Will the action result in the release or production of airborne pollutants, including vehicle emissions, smoke, and/or dust?

☐ No ☒ Yes Temporary impacts will occur during construction related to ground disturbing activities, vehicle emissions, and other construction related activities (e.g., painting). Deconstruction will entail recovery of ODC's from HVAC systems in existing buildings. New construction will use non-CFC refridgerants. Ongoing Operation and Maintenance (OO&M) will include vehicle emissions from traffic accessing the site, and OMS activities.

3.3. Hazardous Materials/Waste

Does the action involve production, storage, treatment, or disposal of hazardous wastes or materials, including regulated pesticide, herbicide, fungicide, etc.?

☐ No ☒ Yes Temporary storage, transfer, and use of various POL and construction related HW/HM's. The contractor will be responsible for management and disposal of all products not directly expended in the course of constructing the facility. Not sure, but are there any ODC issues related to installaton of a new HVAC system (est. 110 tons). OO&M activites will include traffic accessing the site, OMS and routine building maintenance activities.

Will the action result in the generation of solid waste and, if so, how would the waste be disposed of?

☐ No ☒ Yes During construction, the Contractor will be required to dispose of all solid wastes at an off-site location, during OO&M disposal of solid wastes will be in accordance with current installation disposal policies and procedures.

3.4. Biological Resources

Will the action introduce fish, wildlife, or vegetative species into an area?

☒ No ☐ Yes

Will the action result in adverse effects to existing fish or wildlife populations or habitat?

☒ No ☐ Yes

3.5. Cultural Resources

Does the action involve any ground disturbing activities outside of the cantonment area?

☒ No ☐ Yes

3.6. Geology/Soils and Hydrologic Resources

Will the action result in long-term disturbance, displacement, or compaction of soils?

☐ No ☒ Yes Construction impacts only. To the extent that construction will occur and alter the landscape from its current configuration, impacts will occur within a mostly previously altered and improved site. To comply with Physical Security set back requirements, construction of the buildings are presumed to be located at least 300 feet from the installaton boundary. Layout of existing buildings at the site has all buildings within the 300 foot set back zone. Hence the current buildings must be removed, new buildings constructed, and parking areas for POV's or other appropriate facilities can be located within the 300 foot set back zone.

Will the action result in new impervious surfaces (i.e., parking areas, improved roads, permanent structures)?

☒ No ☐ Yes See comment above

3.7. Water

Will the action change the course, direction, quality, or quantity of any water body, including groundwater and/or wetlands?

☒ No ☐ Yes

Does the action involve dredging or placement of fill in any body of water or drainage?

☒ No ☐ Yes

Will any aspect of the action take place within a wetland or floodplain?

☒ No ☐ Yes

3.8. Socioeconomics

Will the action alter the location, distribution, density, or growth rate of the human population of an area?

☐ No ☒ Yes New personnel on YTC and a number of unit relocation and staffing issues need to be run to ground (e.g., PCS actions). Construction and OO&M will be an economic benefit to the local community. Other socioeconomic impacts include traffic, utilities, lighting and view.

3.9. Infrastructure

Will the action result in a substantial change in amount or distribution of vehicular traffic on- and/or off-post?

☐ No ☒ Yes Traffic will likely increase due to merging of three existing facilities into one. Will need to run this one to ground to quantify what the expected changes/impacts will be

Does the action involve the addition of new utility systems or substantial alterations to existing systems? Utility systems include electrical power, telephone and data connectivity, drinking and irrigation water conveyance, and wastewater collection and treatment.

☒ No ☐ Yes

Will the action result in discharges to the wastewater treatment system or a standalone septic system?

☐ No ☒ Yes Discharge will be to the YTC WWTP during OO&M

3.10. Noise

Will the action result in increases in actual or perceived noise levels?

☐ No ☒ Yes During construction and OO&M, noise levels, duration and frequency consistent with other land use activities in the cantonment area will occur.

4. Resource Specialist Review

Using the information provided by the Proponent and your professional judgment complete the following section. When applicable, discuss any past, present, or reasonably foreseeable future actions which may contribute to cumulative effects of the proposed action.

4.1. Land Use

Will there be any changes to current land use as a result of the action?

☒ No ☐ Yes No change from current land use

4.2. Air Quality

Will the action take place within a non-attainment or maintenance area?

☐ No ☒ Yes The project will be adjacent to a PM 10 Maintenance area within Yakima County (see http://www.ecy.wa.gov/programs/air/other/namaps/Web_Map_Intro.htm#Particulate%20Matter for more details, or http://yosemite.epa.gov/R10/OEA.NSF/webpage/CO+&+PM10+Air+Non-Attainment+&+Maintenance+Areas). In addition to the issue of non-attainment area, the following permits will need to be obtained from the Yakima Regional Clean Air Authority: Notification of Demmolition for buildings 805 and 806, and New Source Review for new sources such as the "Boiler", and Project Dust Control Plan.

4.3. Hazardous Materials/Waste

Does the action involve production, storage, treatment, or disposal of hazardous wastes or materials, including regulated pesticide, herbicide, fungicide, etc.?

☐ No ☒ Yes The contractor shall manage Hazardous Wastes in accordance with Federal and state laws, and YTC policies and procedures. Constructon shall also comply with YTC's ODC management plan, including the reporting of ODC activities as required. OO&M activites will include OMS and routine building maintenance activities.

Will the action result in the generation of solid waste and, if so, how would the waste be disposed of?

☐ No ☒ Yes During construction, the Contractor will be required to dispose of all solid wastes at an off-site location, during OO&M disposal of solid wastes will be in accordance with current YTC disposal policies and procedures. During OO&M, the impact of the new facilities to YTC's solid waste production need to be determined. This information will be needed to evaluate impacts on solid waste.

4.4. Biological Resources

Has the site been surveyed for rare and sensitive plant species? If so, please elaborate on any vegetative communities that may be affected by the action.

☒ No ☐ Yes The proposed facility will be built within the footprint of an existing facility which does not constitute (nor has it been surveyed for) suitable habitat for rare or sensitve plant species

Will the action affect any plant species covered under YTC's *Sensitive Plant Management Plan*, and/or unique vegetation communities?

☒ No ☐ Yes The proposed facility will be built within the footprint of an existing facility that has been previously developed.

Will the action affect riparian, spring, or wetland habitat?

☒ No ☐ Yes The proposed facility will be built within the footprint of an existing facility that has been previously developed.

Is the site within the Sage Grouse Protection Area?

☒ No ☐ Yes The proposed facility will be built within the footprint of an existing facility that has been previously developed.

Does the action have the potential to affect species of management emphasis on YTC?

☒ No ☐ Yes The proposed facility will be built within the footprint of an existing facility that has been previously developed.

Does the action have the potential to affect Essential Fish Habitat (EFH)?

☒ No ☐ Yes The proposed facility will be built within the footprint of an existing facility that has been previously developed.

4.5. Cultural Resources

Has the site been surveyed for cultural resources?

☐ No ☒ Yes A pedestrian survey of the current footprint was completed in September 2006

Will the action affect any resources of significance to either the Wanapum or Yakama?

☒ No ☐ Yes No known Native American cultural manifestations have been observed

4.6. Geology/Soils

Will the action result in changes to runoff, erosion, and/or increased sediment loading of water bodies?

☐ No ☒ Yes The management and disposition of stormwater run off needs to be addressed during construction and OO&M activities. The contruction site is greater than 1 acre, therefore a stormwater pollution prevention plan will be required. Likely method of addressing stormwater run off will be through the use of oil water separators and a stormwater lagoon.

Are there highly erodable soils within the proposed project area?

☐ No ☐ Yes Brian?

4.7. Water

Will the project be located below Ordinary High Watermark?

☒ No ☐ Yes

4.8. Socioeconomics

Will the action disproportionately affect children, minority, or low-income populations?

☒ No ☐ Yes

Will the action alter the location, distribution, density, or growth rate of the human population of an area?

☒ No ☒ Yes Need some additional information we can settle on a yes or no answer. Need more information from 70th RSC regarding projected PCS actions first. If the number of personnel to relocated to Yakima is low, the answer is no. If it is high, then the answer may be yes.

4.9. Infrastructure

Will the action result in a substantial change in amount or distribution of vehicular traffic on- and/or off-post?

☒ No ☒ Yes Need some additional information we can settle on a yes or no answer. The answer may be yes, but the increase is not going to be a dramatic change that will cause us to develop mitigation. Need to look further into this one to confirm impacts.

Does the action involve the addition of new utility systems or substantial alterations to existing systems?

☒ No ☐ Yes Will use existing utilities already within the project area

Will the action result in discharges to the wastewater treatment system or a standalone septic system?

☐ No ☒ Yes Discharge will be to YTC's WWTP. Will the facility ever operate at full strength? Must assume yes. Need to know the number of personnel that could be at the facility if all 14 units were activated and operated at YTC. Is this 300??? Need to check with 70Th RSC.

4.10. Noise

Will the action result in increases in actual or perceived noise levels?

☐ No ☒ Yes Impacts to the surrounding civilian community will need to be looked at. With the addition of 14 companies (is it really a plus up of 14, or is it a total of 14 that includes X number that are currently stationed at YTC - 70th RSC needs to run this to ground), to include one Armor Company and one Armor Detachment, the maintenance operations could affect the community outside YTC borders (across the street). Bottomline policy at YTC is that no Zone II noise contours are to extend off post.

5. Determination of Impacts

Based on the information provided in Sections 2 through 4 of this form, work through the following questions to determine the level of analysis warranted by the proposed action.

5.1. Will the action have a significant impact on the human environment?

☐ No. Go to 5.2.
☒ Yes or uncertain. Go to 5.5.

5.2. Is the action covered under a Categorical Exclusion (CX)?

☒ No. Go to 5.5
☐ Yes. Go to 5.3.

5.3. Do any exceptional circumstances exist? See 32 CFR 651.29 paragraphs (b) (1) through (14).

☒ No. Go to 5.4.
☐ Yes. Go to 5.7.

5.4. Is the action segmented?

☒ No. If required, prepare a Record of Environmental Consideration (REC).
☐ Yes. Go to 5.7.

5.5. Has the action been adequately analyzed and, if applicable, mitigated for in a previous Environmental Assessment (EA) or Environmental Impact Statement (EIS)?

☒ No. Go to 5.6.
☐ Yes. Go to 5.3.

5.6. If the action will have significant impacts, can mitigation measures be applied to minimize impacts to an acceptable (non-significant) level?

☐ No. Prepare an EIS.
☒ Yes. Go to 5.7.

5.7. Is the action controversial in nature?

☒ No. Prepare an EA.
☐ Yes. Prepare an EIS.

APPENDIX B

AGENCY CONSULTATION LETTERS

DEPARTMENT OF THE ARMY
INSTALLATION MANAGEMENT COMMAND
HEADQUARTERS, YAKIMA TRAINING CENTER
970 FIRING CENTER ROAD
YAKIMA, WASHINGTON 98901-9399

July 17, 2007

Mr. Mark Miller, Supervisor
U.S. Fish and Wildlife Service
Central Washington Field Office
215 Melody Lane
Wenatchee, Washington 98801

Dear Mark Miller:

Pursuant to the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality (CEQ) NEPA regulations (40 Code of Federal Regulations (CFR) 1500 – 1508), and 32 CFR Part 651 (Environmental Analysis of Army Actions), the U.S. Army is analyzing the potential environmental consequences of constructing and operating an Armed Forces Reserve Center (AFRC) at the Yakima Training Center (YTC)(see Figure 1). The AFRC will accommodate and consolidate the Wagenaar and Pendleton U.S. Army Reserve Centers, and the Ellensburg Washington Army National Guard as directed by the Defense Base Realignment and Closure (BRAC) Commission recommendations and the President's approval of the recommendations. The AFRC would consist of approximately 100,000 square feet of administrative, classroom, barracks storage and vehicle maintenance facilities, and parking areas covering 14 acres within the YTC cantonment area.

The AFRC preferred alternative site is proposed on an existing developed portion of the cantonment area and does not constitute suitable habitat for any federally listed species or any shrub-steppe obligate/associated species of management concern for YTC. Based on the location of the preferred alternative/proposed action and the absence of any known occurrence of any species of management concern within the proposed project area, a determination of no effect is made for all federally listed species under the Endangered Species Act. The Army will provide the Environmental Assessment (EA) for this BRAC project for your review and comment. Please accept the analysis within the EA as the biological assessment for this proposed action.

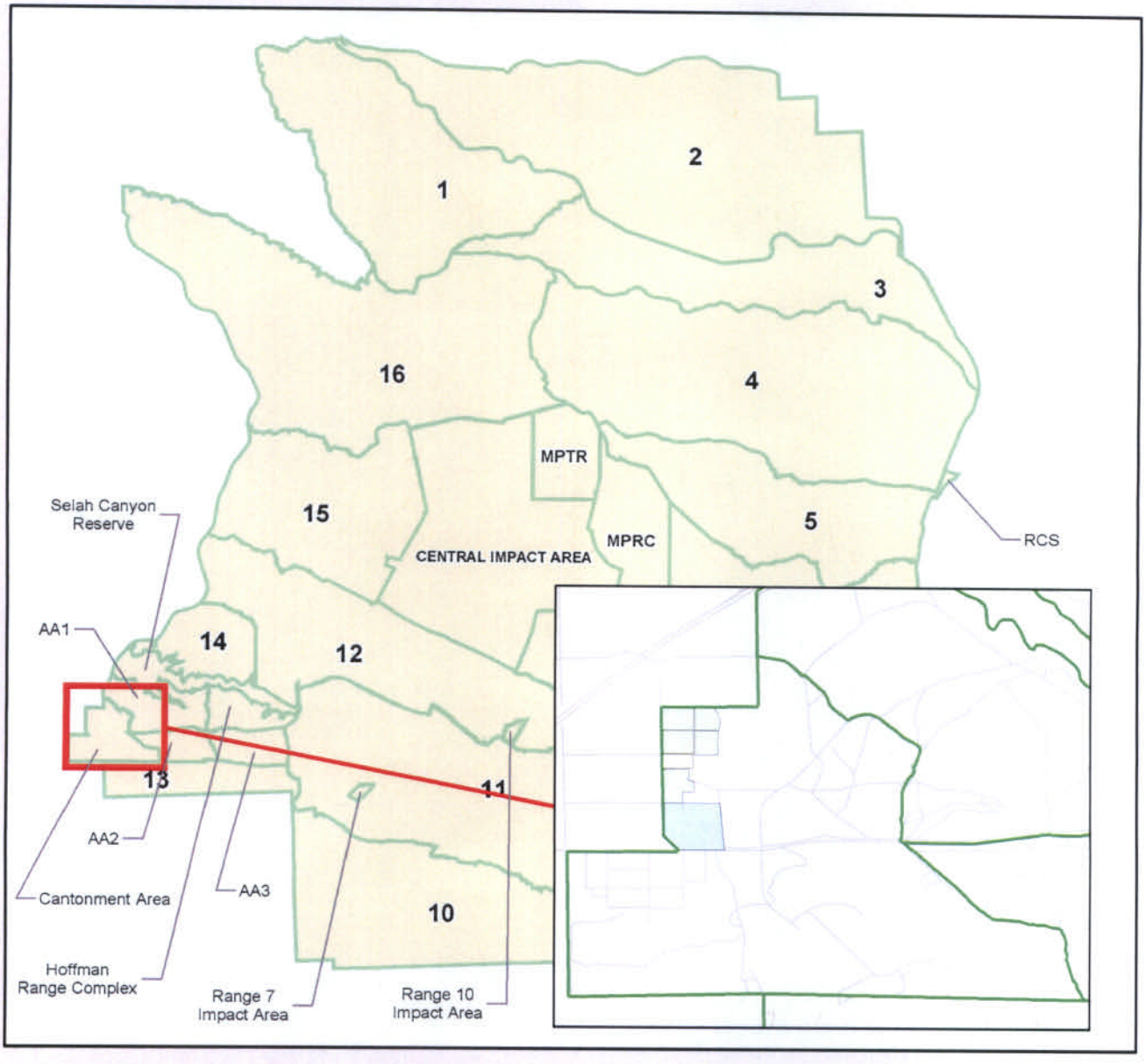
I respectfully ask that you provide written concurrence with our "no effect" determination. If you have any questions about this letter or wish to discuss any concerns your agency has about federally-protected species for this project, please contact John McDonald, NEPA Specialist at john.mcdonald22@us.army.mil or by telephone at (509) 577-3789.

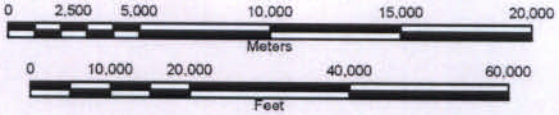
Sincerely,

Margaret Pounds

Margaret Pounds
Chief, Environmental & Natural Resources Division,
Directorate of Public Works

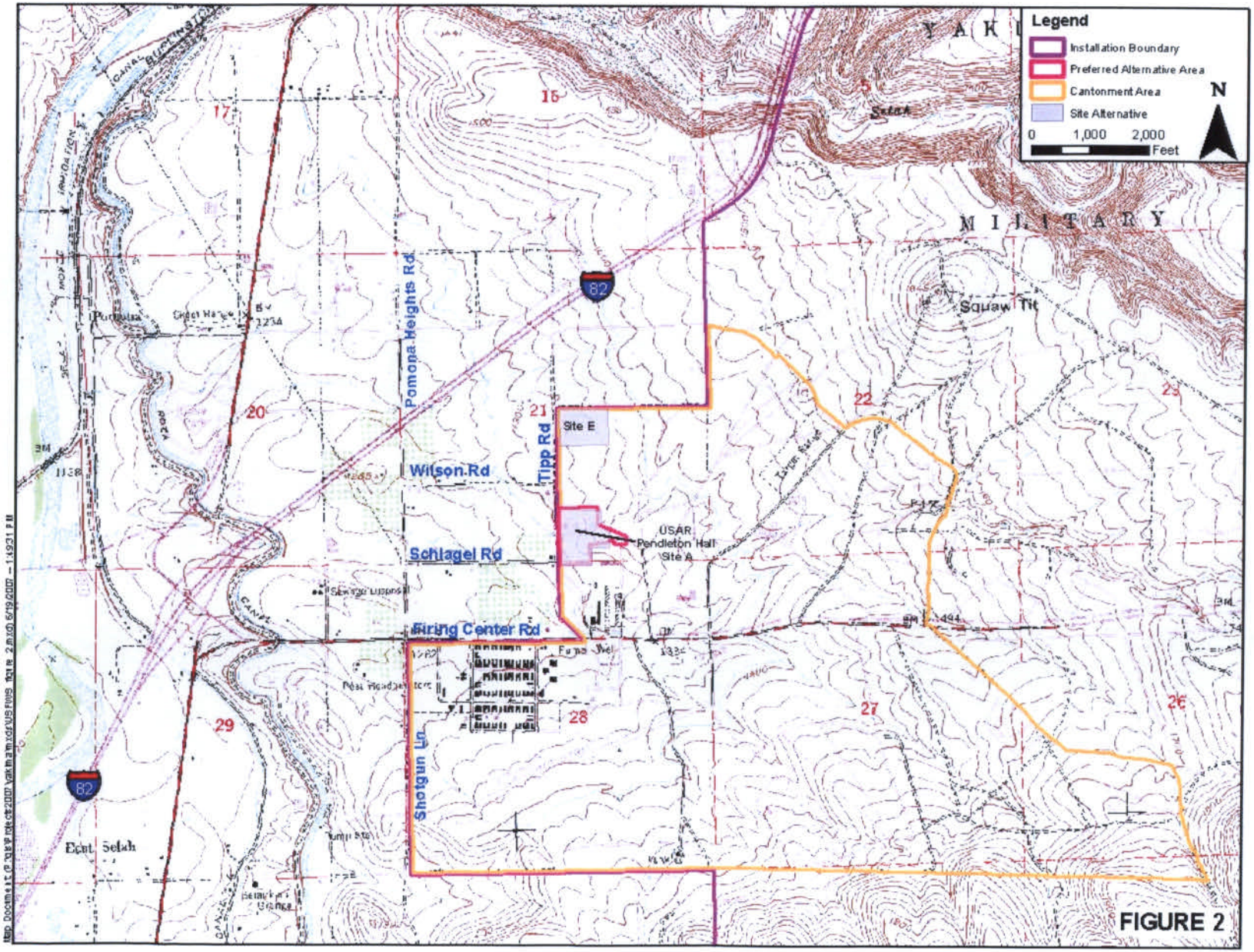
U.S. Army Garrison - Yakima Training Center





Universal Transverse Mercator Projection, Zone 10
World Geodetic System of 1984 (UTM10-WGS84)

Figure 1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Firing Center Rd
Pomona Heights Rd
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MILITARY
YAK
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FIGURE 2

Figure 2

-----Original Message-----
From: Gregg_Kurz@fws.gov [mailto:Gregg_Kurz@fws.gov]
Sent: Monday, July 30, 2007 9:32 AM
To: McDonald, John E Mr CTR USA IMCOM
Subject: Re: ARMED FORCES RESERVE CENTER AERIAL MAP

John,

Thank you for the clarification of the project location.. Based on the information you provided, the USFWS finds no reason to disagree with your "no effect" determinations for the proposed action. However, because our regulations do not provide a mechanism to concur with "no effect" determinations, you will not receive a formal response from the USFWS. This e-mail serves as a receipt of your request. Please contact me if you have any questions.

Gregg L. Kurz
Fish and Wildlife Biologist
Central Washington Field Office
Wenatchee, WA 98801
Phone: (509) 665-3508 extension 22
E-mail: Gregg_Kurz@fws.gov

	"McDonald, John E Mr CTR USA IMCOM" <john.mcdonald22@us.army.mil>	
To		<gregg_kurz@fws.gov>
cc	07/26/2007 08:52 AM	"Leingang, Colin G CIV USA IMCOM" <colin.g.leingang@us.army.mil>
Subject		ARMED FORCES RESERVE CENTER AERIAL MAP

Mr. Kurz,

Please find attached a PDF format map showing the proposed Armed Forces Reserve Center location (and coordinates) and the alternative location.
As you can see, the preferred location has existing buildings which will be demolished for the new facilities. If you have any questions, please feel free to contact me. Thank you.

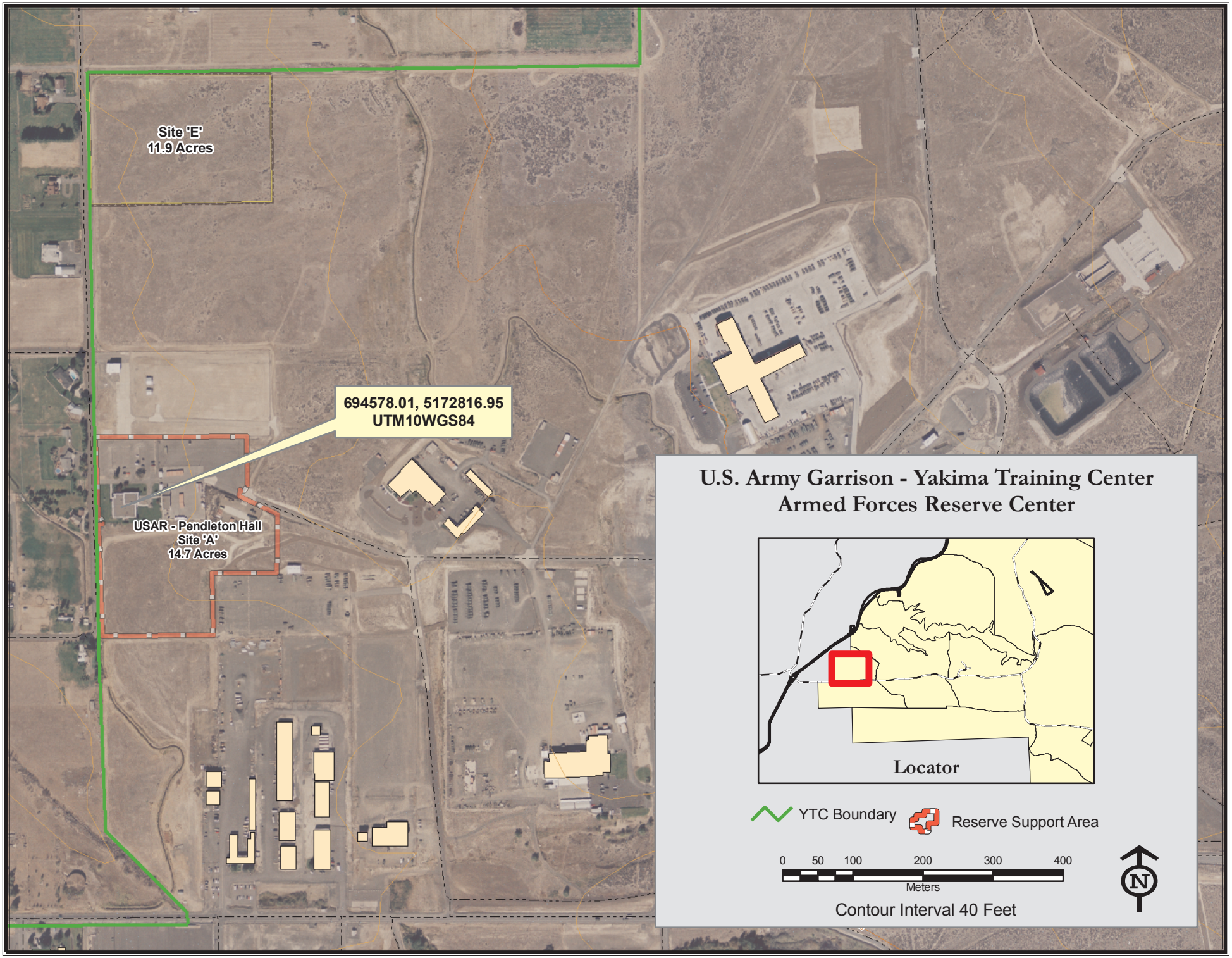
John (Scott) McDonald
NEPA Specialist
Contractor - ICI Services, LLC

U.S. Army - Yakima Training Center
Directorate of Public Works
ATTN: IMNW-LE-YTC-PW
Building 810
Yakima, WA 98901

v: 509-577-3789
f: 509-577-3336

E-mail: john.mcdonald22@us.army.mil

(See attached file: Overview_July07.pdf)


Site 'E'
11.9 Acres
694578.01, 5172816.95
UTM10WGS84
USAR - Pendleton Hall
Site 'A'
14.7 Acres
U.S. Army Garrison - Yakima Training Center
Armed Forces Reserve Center
Locator
YTC Boundary
Reserve Support Area
0 50 100 200 300 400
Meters
N
Contour Interval 40 Feet

DEPARTMENT OF THE ARMY
INSTALLATION MANAGEMENT COMMAND
HEADQUARTERS, YAKIMA TRAINING CENTER
970 FIRING CENTER ROAD
YAKIMA, WASHINGTON 98901-9399

July 17, 2007

Mr. Steve Landino
Chief, Habitat
NOAA Fisheries
510 Desmond Drive, S.E.
Suite 103
Lacey, Washington 98503-1263

Dear Mr. Landino:

Pursuant to the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality (CEQ) NEPA regulations (40 Code of Federal Regulations (CFR) 1500 – 1508), and 32 CFR Part 651 (Environmental Analysis of Army Actions), the U.S. Army is analyzing the potential environmental consequences of constructing and operating an Armed Forces Reserve Center (AFRC) at the Yakima Training Center (YTC)(see Figure 1). The AFRC will accommodate and consolidate the Wagenaar and Pendleton U.S. Army Reserve Centers, and the Ellensburg Washington Army National Guard as directed by the Defense Base Realignment and Closure (BRAC) Commission recommendations and the President's approval of the recommendations. The AFRC would consist of approximately 100,000 square feet of administrative, classroom, barracks storage and vehicle maintenance facilities, and parking areas covering 14 acres within the YTC cantonment area.

The AFRC preferred alternative site (Site A) is located along the west boundary of the YTC cantonment area (see Figure 2) in a currently developed site. The proposed site does not contain any body of water or fish bearing stream of any kind. The nearest surface water body is a lateral ditch to the Roza Canal (which is screened at the diversion dam) located within approximately .25 miles of the proposed project area. This ditch is a concrete-lined irrigation canal located west of the installation and is also not considered suitable fish habitat. Based on the location of the preferred alternative/proposed action, lack of suitable habitat, and the absence of any known occurrence of any federally listed salmonid species within or adjacent to the proposed project area, a determination of no effect is made for all federally listed salmonid species of concern to YTC. The Army will provide the Environmental Assessment (EA) for this BRAC project for your review and comment. Please accept the analysis within the EA as the biological assessment and essential fish habitat analysis for this proposed action.

I respectfully ask that you provide written concurrence with our "no effect" determination. If you have any questions about this letter or wish to discuss any concerns your agency has about federally-protected species for this project, please contact John McDonald, NEPA Specialist at john.mcdonald22@us.army.mil or by telephone at (509) 577-3789.

Sincerely,

Margaret Pounds
Chief, Environmental & Natural Resources Division,
Directorate of Public Works

U.S. Army Garrison - Yakima Training Center

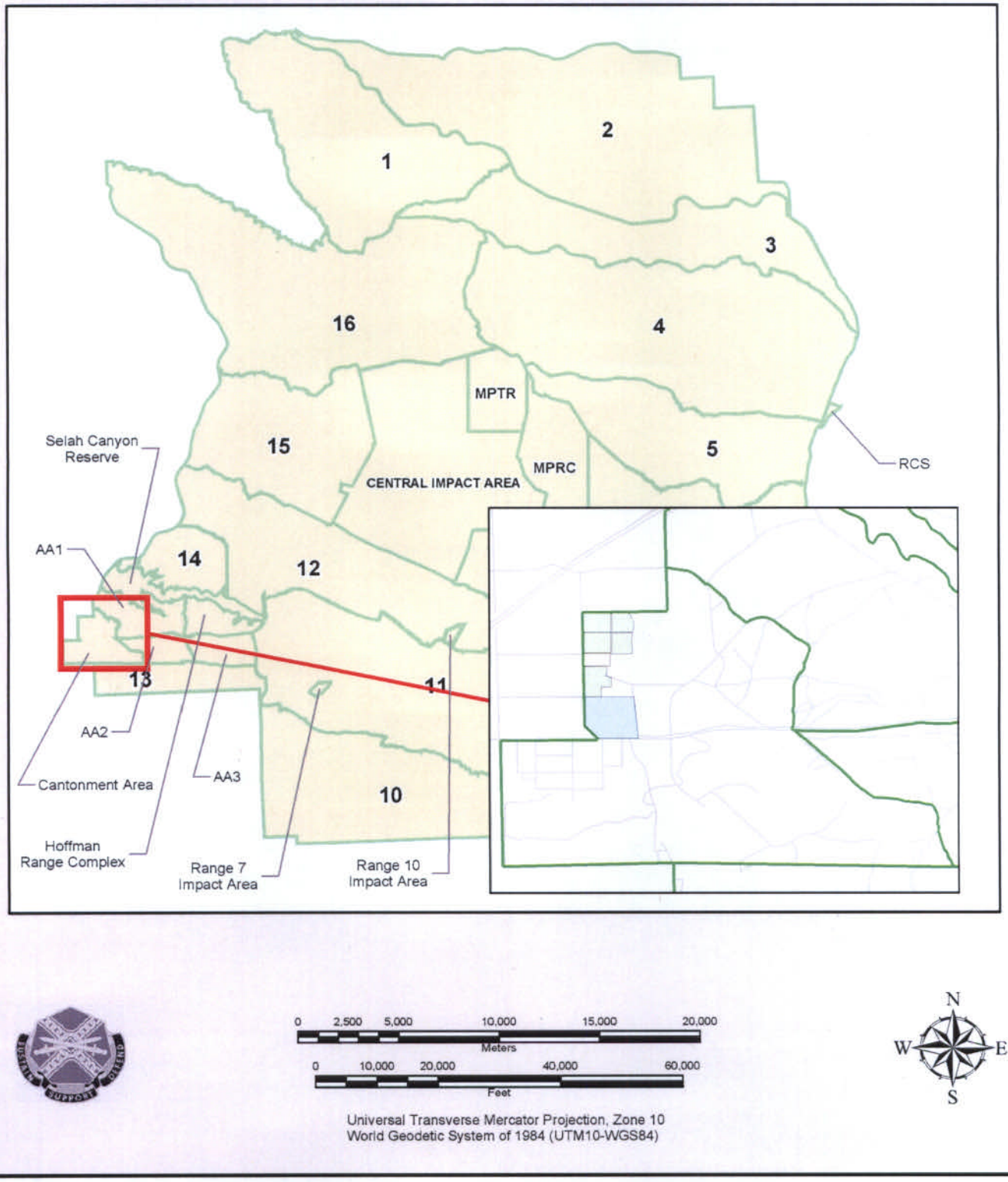


Figure 1

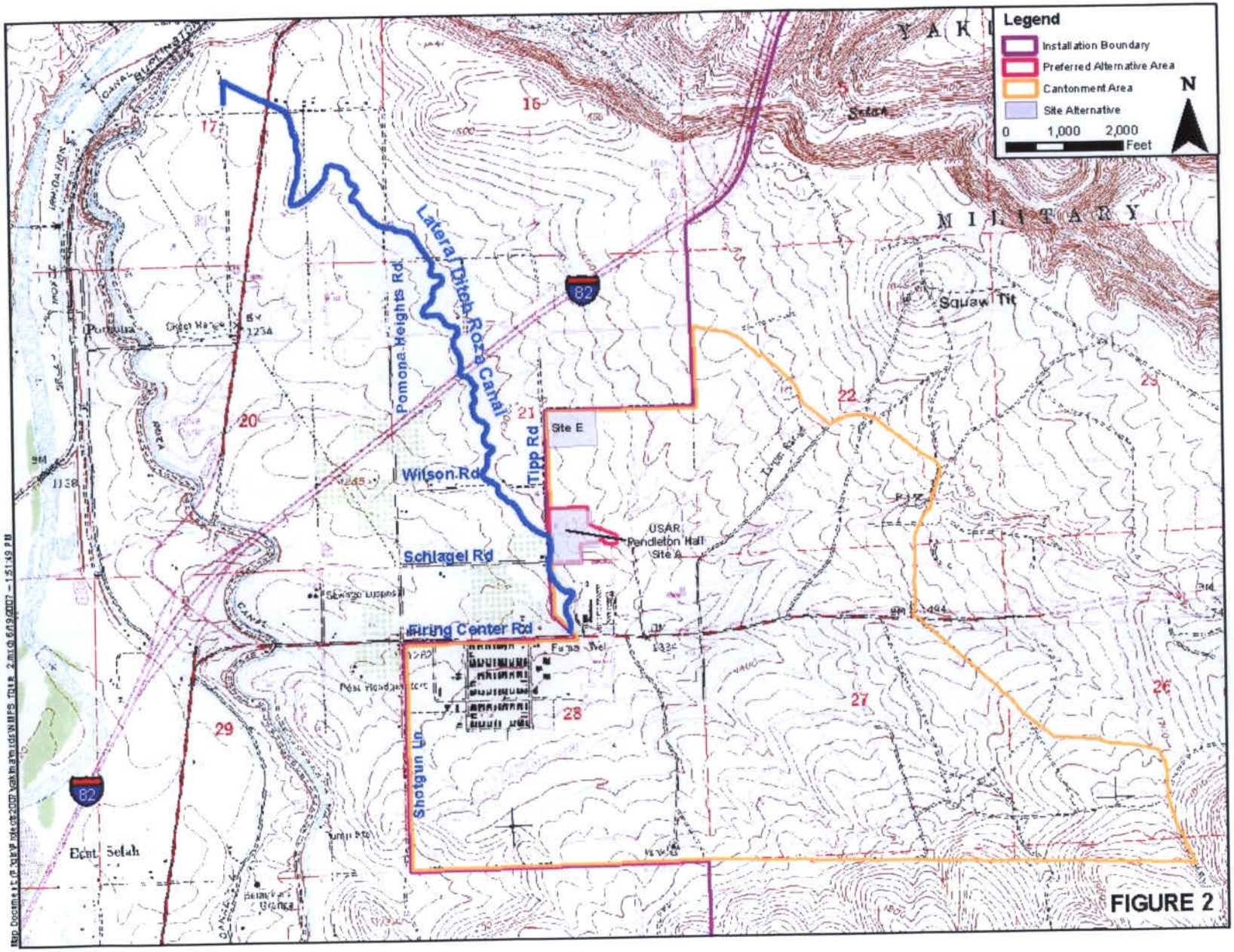

Legend
Installation Boundary
Preferred Alternative Area
Cantonment Area
Site Alternative
0 1,000 2,000
Feet
N
Lateral Ditch Rosa Canal
Pomona Heights Rd.
Tipp Rd
Site E
Wilson Rd
Schlagel Rd
Firing Center Rd
Shotgun Ln
USAR
Pendleton Hall
Site A
Squaw Tit
MILITARY
YAK
Ecat Selah
82
FIGURE 2

Figure 2

-----Original Message-----
From: Dale Bambrick [mailto:Dale.Bambrick@noaa.gov]
Sent: Wednesday, July 18, 2007 2:23 PM
To: McDonald, John E Mr CTR USA IMCOM
Cc: Donna Hughes
Subject: Armed Forces Reserve Center

Dear Mr McDonald: Your request for concurrence with the Army's "no effect" determination for the proposed construction of an Armed Forces Reserve Center (AFRC) was today forwarded to my office. NMFS' Northwest Region as a matter of policy does not produce official concurrence letters to agency determination of "no effect." According to 50 CFR part 402, once an action agency determines that an action will not affect listed species, no further consultation is required. Nevertheless, I do appreciate your interest in NMFS' views on this particular project and figured at least an email response was appropriate - I hope this is satisfactory to the Army.

There is no hydraulic connection between the proposed action and the Yakima River (the nearest occupied habitat to the proposed action). In addition, the site of the proposed AFRC is nearly 1.5 miles from the river at it's nearest point - with a county road and interstate highway between the two. Finally, no portion of the proposed AFRC would be located within the Yakima River floodplain. Given these conditions, it appears to NMFS that a "no effect" determination is appropriate. Please let me know if I can be of any further assistance.

--
F. Dale Bambrick, Eastern Washington Branch Chief
304 South Water Street # 201
Ellensburg, Washington 98926
Phone (509) 962-8911, ext 221
Fax (509) 962-8544

"Right temporarily defeated is stronger than evil triumphant." Dr. ML King

DEPARTMENT OF THE ARMY
INSTALLATION MANAGEMENT AGENCY
HEADQUARTERS, YAKIMA TRAINING CENTER
970 FIRING CENTER ROAD
YAKIMA, WASHINGTON 98901-9399

REPLY TO
ATTENTION OF

July 25, 2007

Directorate of Public Works

Mr. Greg Griffith
Department of Archaeology & Historic Preservation
1063 South Capitol Way, Suite 106
Olympia, WA 98501

Dear Mr. Griffith:

Yakima Training Center's (YTC) Directorate of Public Works is seeking concurrence from your Office on its determination that two structures, associated existing lawn, and parking areas are not eligible for listing on the National Register of Historic Places.

The Defense Base Realignment and Closure (BRAC) Commission has recommended that the Army close the Wagenaar U.S. Army Reserve Center (USARC) in Pasco, Washington; provide space to units from the Washington Army National Guard Ellensburg Readiness Center in Ellensburg, Washington; consolidate activities of the Pendleton USARC at YTC; and relocate those units to a new Armed Forces Reserve Center (AFRC) on YTC. The proposed AFRC would be constructed within the existing footprint of the Pendleton USARC (see attachment – Area of Potential Effect).

Pendleton USARC was built in 1976 and consists of Building T805 (a 13,000-sf training center), Building T806 (a 3,000-sf maintenance shop), existing lawn, paved parking areas, and an unpaved parking area. The two buildings are of cinder block construction. These facilities are not suitable for reuse by the AFRC because they were originally constructed to be temporary, are in disrepair, and do not meet various military standards. The construction foot print and Area of Potential Effect is within a built environment and includes a 148 ft security setback from the boundary fence.

No archaeological resources have been identified within the project footprint and surrounding areas. A pedestrian survey of the property by the YTC Cultural Resources Manager was conducted in May, 2007 and no cultural manifestations were observed. The buildings are less than 50 years of age and there are no cultural properties within the Area of Potential Effect. YTC Directorate of Public Works is asking for a concurrence of a determination of No Historic Properties.

I hope that I have provided you and your staff with enough information to allow for timely consultation on the determination of No Historic Properties. If you have any questions please contact me at (509) 577-3535.

Sincerely,

Randy Korgel

Enclosure

Randy Korgel
Cultural Resources Manager, Public Works

Received
8/15/07

STATE OF WASHINGTON

DEPARTMENT OF ARCHAEOLOGY & HISTORIC PRESERVATION

1063 S. Capitol Way, Suite 106 • Olympia, Washington 98501
Mailing address: PO Box 48343 • Olympia, Washington 98504-8343
(360) 586-3065 • Fax Number (360) 586-3067 • Website: www.dahp.wa.gov

August 9, 2007

Mr. Randy Korgel
Department Of The Army
BLDG 801, YAKIMA TRAINING CENTER
Yakima, WA 98901

In future correspondence please refer to:
Log: 080907-01-DOA
Property: Pendleton US Army Reserve Center Development
Re: No Historic Properties Affected

Dear Mr. Korgel:

Thank you for contacting the Washington State Department of Archaeology and Historic Preservation (DAHP). The above referenced project has been reviewed on behalf of the State Historic Preservation Officer under provisions of Section 106 of the National Historic Preservation Act of 1966 (as amended) and 36 CFR Part 800. My review is based upon documentation contained in your communication.

We concur that no historic properties will be affected by the current project as proposed. If additional information on the project becomes available, or if any archaeological resources are uncovered during construction, please halt work in the area of discovery and contact the appropriate Native American Tribes and DAHP for further consultation.

Thank you for the opportunity to review and comment. Should you have any questions, please contact me.

Sincerely,

Russell Holter
Project Compliance Reviewer
(360) 586-3533
Russell.Holter@dahp.wa.gov

APPENDIX C1

ECONOMIC IMPACT FORECAST SYSTEM MODEL AND RESULTS FOR CONSTRUCTION SPENDING

Economic Impact Forecast System
US Army Corps of Engineers
Mobile District

EIFS REPORT

PROJECT NAME

Yakima YTC AFRC

STUDY AREA

53037 Kittitas, WA
53077 Yakima, WA

FORECAST INPUT

Change In Local Expenditures	$20,000,000
Change In Civilian Employment	0
Average Income of Affected Civilian	$25,000
Percent Expected to Relocate	0
Change In Military Employment	0
Average Income of Affected Military	$25,000
Percent of Militart Living On-post	0

FORECAST OUTPUT

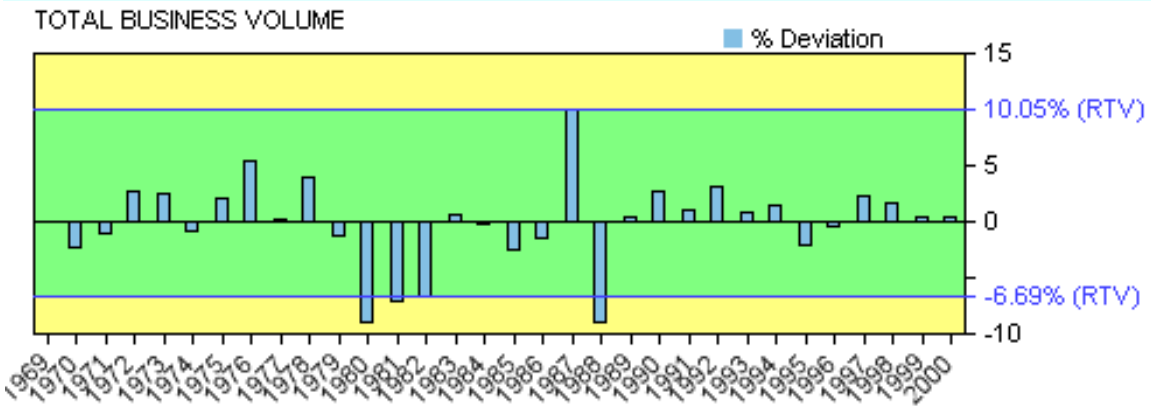
Employment Multiplier	2.53	
Income Multiplier	2.53	
Sales Volume - Direct	$12,094,860	
Sales Volume - Induced	$18,505,140	
Sales Volume - Total	$30,600,000	0.47%
Income - Direct	$2,050,559	
Income - Induced)	$3,137,354	
Income - Total(place of work)	$5,187,913	0.11%
Employment - Direct	58	
Employment - Induced	88	
Employment - Total	146	0.11%
Local Population	0	
Local Off-base Population	0	0%

RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	10.05 %	9.88 %	6.49 %	1.49 %
Negative RTV	-6.69 %	-8.61 %	-3.1 %	-0.9 %

RTV DETAILED

SALES VOLUME



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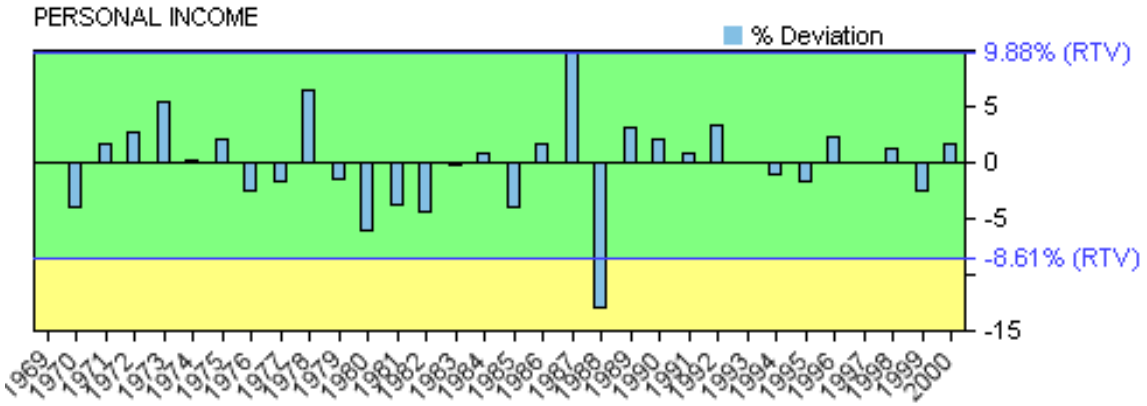
Year	Value	Adj_Value	Change	Deviation	% Deviation
1969	348583	1523308	0	0	0
1970	370691	1530954	7646	-36643	-2.39
1971	393626	1558759	27805	-16484	-1.06
1972	429831	1646253	87494	43205	2.62
1973	479889	1732399	86147	41858	2.42
1974	542594	1763430	31031	-13258	-0.75
1975	619762	1846891	83460	39171	2.12
1976	709445	2000635	153744	109455	5.47
1977	776444	2049812	49177	4888	0.24
1978	886421	2180596	130783	86494	3.97
1979	994160	2197094	16498	-27791	-1.26
1980	1061217	2058761	-138333	-182622	-8.87
1981	1115100	1962576	-96185	-140474	-7.16
1982	1132500	1879950	-82626	-126915	-6.75
1983	1202631	1936236	56286	11997	0.62
1984	1282185	1974565	38329	-5960	-0.3
1985	1321215	1968610	-5954	-50243	-2.55
1986	1359606	1985025	16414	-27875	-1.4
1987	1455537	2256082	271057	226768	10.05
1988	1552873	2111907	-144175	-188464	-8.92
1989	1677853	2164430	52523	8234	0.38
1990	1847425	2272333	107902	63613	2.8
1991	1983195	2340170	67837	23548	1.01
1992	2160514	2462986	122816	78527	3.19
1993	2278631	2529280	66295	22006	0.87
1994	2415892	2609163	79883	35594	1.36
1995	2475637	2599419	-9745	-54034	-2.08
1996	2581754	2633389	33970	-10319	-0.39
1997	2737927	2737927	104538	60249	2.2
1998	2886333	2828606	90679	46390	1.64
1999	3005937	2885699	57093	12804	0.44
2000	3161876	2940545	54845	10556	0.36

INCOME



created with ChartDirector from www.advsofteng.com

Year	Value	Adj_Value	Change	Deviation	% Deviation
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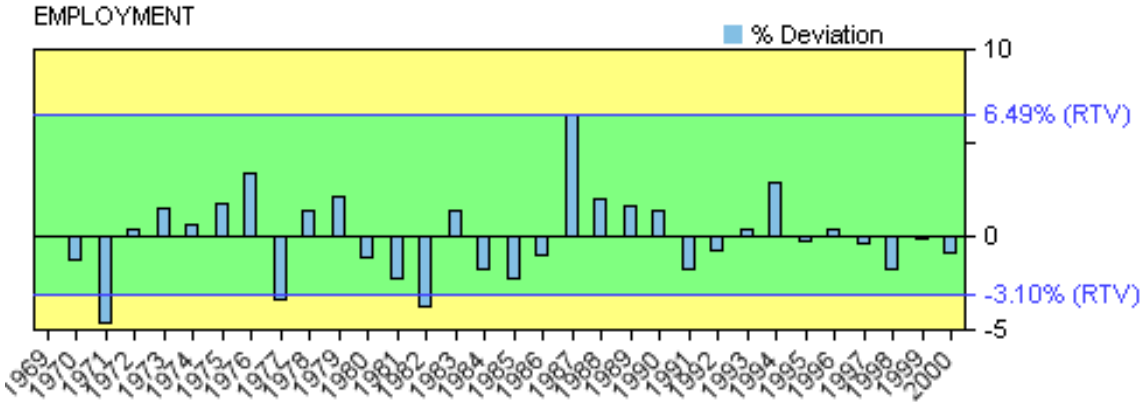
1970	580573	2397767	-8408	-96429	-4.02
1971	638181	2527197	129430	41409	1.64
1972	702491	2690540	163344	75323	2.8
1973	814637	2940839	250299	162278	5.52
1974	934771	3038006	97166	9145	0.3
1975	1070228	3189279	151274	63253	1.98
1976	1133559	3196636	7357	-80664	-2.52
1977	1223565	3230212	33575	-54446	-1.69
1978	1441290	3545573	315362	227341	6.41
1979	1618878	3577720	32147	-55874	-1.56
1980	1782094	3457262	-120458	-208479	-6.03
1981	1943501	3420562	-36701	-124722	-3.65
1982	2026332	3363711	-56851	-144872	-4.31
1983	2138190	3442486	78775	-9246	-0.27
1984	2313172	3562285	119799	31778	0.89
1985	2357124	3512115	-50170	-138191	-3.93
1986	2505240	3657650	145536	57515	1.57
1987	2681578	4156446	498795	410774	9.88
1988	2765669	3761310	-395136	-483157	-12.85
1989	3082168	3975997	214687	126666	3.19
1990	3372450	4148114	172117	84096	2.03
1991	3622592	4274658	126545	38524	0.9
1992	3957809	4511902	237244	149223	3.31
1993	4144844	4600777	88875	854	0.02
1994	4300889	4644960	44183	-43838	-0.94
1995	4430761	4652299	7339	-80682	-1.73
1996	4753135	4848198	195899	107878	2.23
1997	4938967	4938967	90769	2748	0.06
1998	5191470	5087641	148674	60653	1.19
1999	5256955	5046677	-40964	-128985	-2.56
2000	5615949	5222833	176156	88135	1.69

EMPLOYMENT



Year	Value	Change	Deviation	% Deviation
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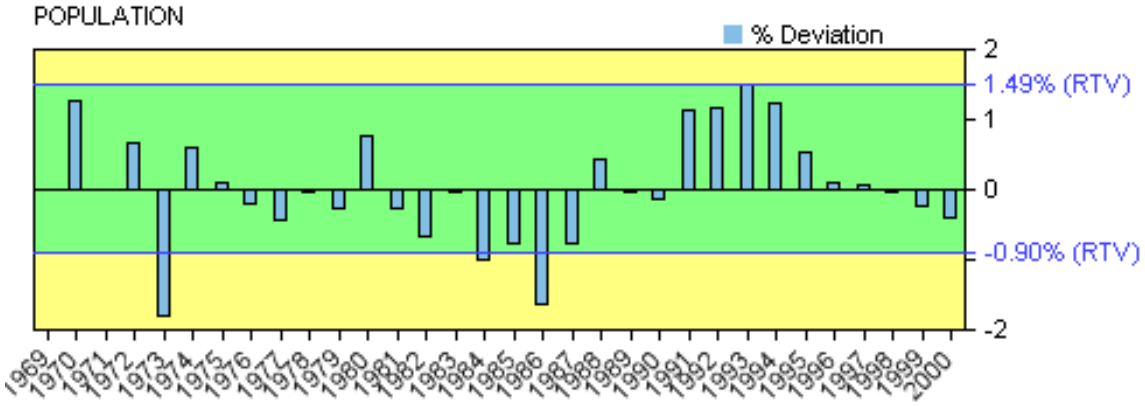
1970	73922	947	-916	-1.24
1971	72440	-1482	-3345	-4.62
1972	74567	2127	264	0.35
1973	77644	3077	1214	1.56
1974	80055	2411	548	0.68
1975	83368	3313	1450	1.74
1976	88205	4837	2974	3.37
1977	87138	-1067	-2930	-3.36
1978	90210	3072	1209	1.34
1979	94028	3818	1955	2.08
1980	94773	745	-1118	-1.18
1981	94470	-303	-2166	-2.29
1982	92893	-1577	-3440	-3.7
1983	96054	3161	1298	1.35
1984	96284	230	-1633	-1.7
1985	95954	-330	-2193	-2.29
1986	96860	906	-957	-0.99
1987	105576	8716	6853	6.49
1988	109607	4031	2168	1.98
1989	113247	3640	1777	1.57
1990	116649	3402	1539	1.32
1991	116439	-210	-2073	-1.78
1992	117371	932	-931	-0.79
1993	119744	2373	510	0.43
1994	125268	5524	3661	2.92
1995	126847	1579	-284	-0.22
1996	129144	2297	434	0.34
1997	130561	1417	-446	-0.34
1998	130216	-345	-2208	-1.7
1999	131889	1673	-190	-0.14
2000	132579	690	-1173	-0.88

POPULATION



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Year	Value	Change	Deviation	% Deviation
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1971	173584	2845	15	0.01
1972	177586	4002	1172	0.66
1973	177208	-378	-3208	-1.81
1974	181109	3901	1071	0.59
1975	184121	3012	182	0.1
1976	186583	2462	-368	-0.2
1977	188606	2023	-807	-0.43
1978	191389	2783	-47	-0.02
1979	193722	2333	-497	-0.26
1980	198058	4336	1506	0.76
1981	200367	2309	-521	-0.26
1982	201846	1479	-1351	-0.67
1983	204590	2744	-86	-0.04
1984	205356	766	-2064	-1.01
1985	206568	1212	-1618	-0.78
1986	206063	-505	-3335	-1.62
1987	207266	1203	-1627	-0.78
1988	211029	3763	933	0.44
1989	213777	2748	-82	-0.04
1990	216313	2536	-294	-0.14
1991	221694	5381	2551	1.15
1992	227185	5491	2661	1.17
1993	233493	6308	3478	1.49
1994	239234	5741	2911	1.22
1995	243367	4133	1303	0.54
1996	246425	3058	228	0.09
1997	249429	3004	174	0.07
1998	252207	2778	-52	-0.02
1999	254487	2280	-550	-0.22
2000	256272	1785	-1045	-0.41

******** End of Report ********

APPENDIX C2

ECONOMIC IMPACT FORECAST SYSTEM MODEL AND RESULTS FOR PERSONNEL RELOCATION

Economic Impact Forecast System
US Army Corps of Engineers
Mobile District

EIFS REPORT

PROJECT NAME

Yakima YTC AFRC

STUDY AREA

53037 Kittitas, WA
53077 Yakima, WA

FORECAST INPUT

Change In Local Expenditures	$0
Change In Civilian Employment	0
Average Income of Affected Civilian	$25,000
Percent Expected to Relocate	0
Change In Military Employment	200
Average Income of Affected Military	$42,000
Percent of Militart Living On-post	0

FORECAST OUTPUT

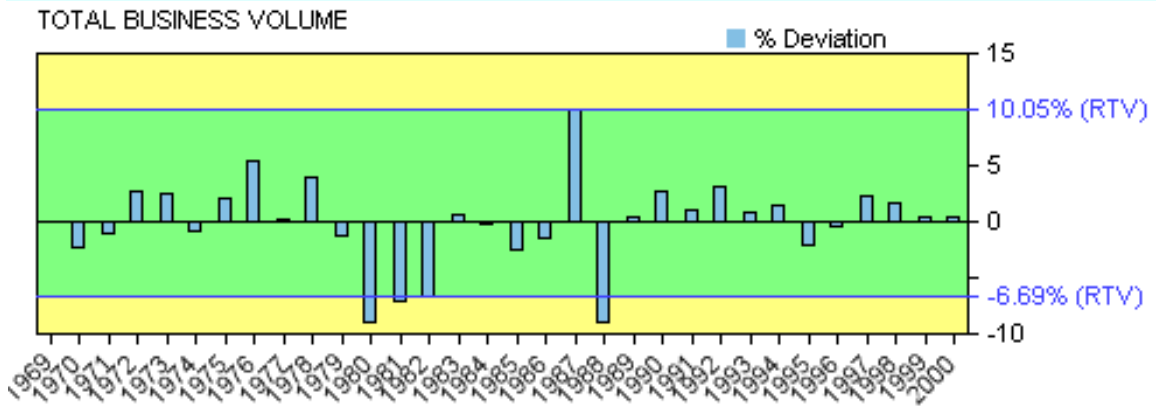
Employment Multiplier	2.53	
Income Multiplier	2.53	
Sales Volume - Direct	$4,107,600	
Sales Volume - Induced	$6,284,628	
Sales Volume - Total	$10,392,230	0.16%
Income - Direct	$8,400,000	
Income - Induced)	$1,065,494	
Income - Total(place of work)	$9,465,494	0.19%
Employment - Direct	220	
Employment - Induced	30	
Employment - Total	250	0.19%
Local Population	498	
Local Off-base Population	498	0.2%

RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	10.05 %	9.88 %	6.49 %	1.49 %
Negative RTV	-6.69 %	-8.61 %	-3.1 %	-0.9 %

RTV DETAILED

SALES VOLUME



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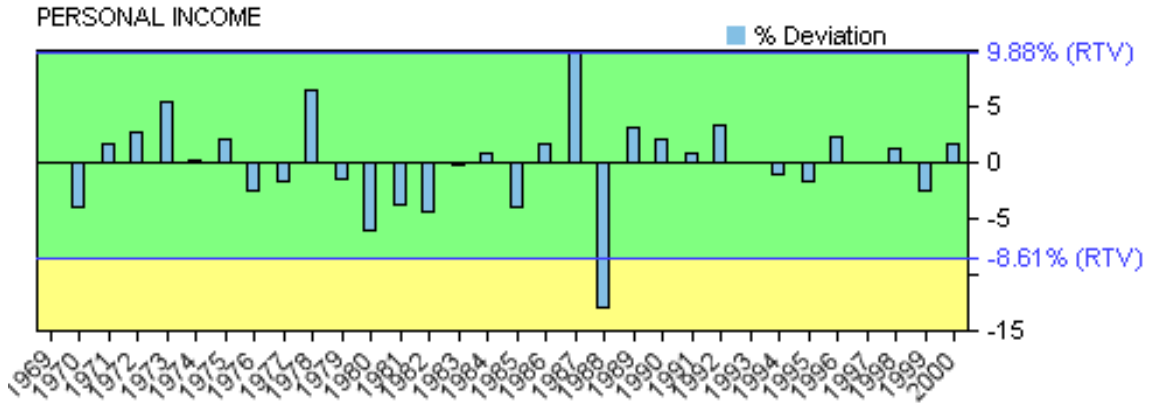
Year	Value	Adj_Value	Change	Deviation	% Deviation
1969	348583	1523308	0	0	0
1970	370691	1530954	7646	-36643	-2.39
1971	393626	1558759	27805	-16484	-1.06
1972	429831	1646253	87494	43205	2.62
1973	479889	1732399	86147	41858	2.42
1974	542594	1763430	31031	-13258	-0.75
1975	619762	1846891	83460	39171	2.12
1976	709445	2000635	153744	109455	5.47
1977	776444	2049812	49177	4888	0.24
1978	886421	2180596	130783	86494	3.97
1979	994160	2197094	16498	-27791	-1.26
1980	1061217	2058761	-138333	-182622	-8.87
1981	1115100	1962576	-96185	-140474	-7.16
1982	1132500	1879950	-82626	-126915	-6.75
1983	1202631	1936236	56286	11997	0.62
1984	1282185	1974565	38329	-5960	-0.3
1985	1321215	1968610	-5954	-50243	-2.55
1986	1359606	1985025	16414	-27875	-1.4
1987	1455537	2256082	271057	226768	10.05
1988	1552873	2111907	-144175	-188464	-8.92
1989	1677853	2164430	52523	8234	0.38
1990	1847425	2272333	107902	63613	2.8
1991	1983195	2340170	67837	23548	1.01
1992	2160514	2462986	122816	78527	3.19
1993	2278631	2529280	66295	22006	0.87
1994	2415892	2609163	79883	35594	1.36
1995	2475637	2599419	-9745	-54034	-2.08
1996	2581754	2633389	33970	-10319	-0.39
1997	2737927	2737927	104538	60249	2.2
1998	2886333	2828606	90679	46390	1.64
1999	3005937	2885699	57093	12804	0.44
2000	3161876	2940545	54845	10556	0.36

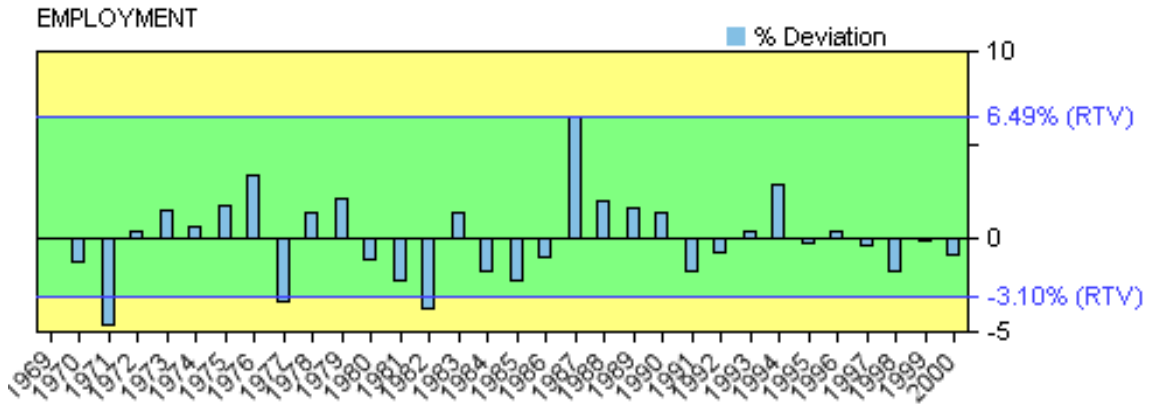
INCOME



created with ChartDirector from www.advsofteng.com

Year	Value	Adj_Value	Change	Deviation	% Deviation
1969	550612	2406174	0	0	0
1970	580573	2397767	-8408	-96429	-4.02
1971	638181	2527197	129430	41409	1.64
1972	702491	2690540	163344	75323	2.8
1973	814637	2940839	250299	162278	5.52
1974	934771	3038006	97166	9145	0.3
1975	1070228	3189279	151274	63253	1.98
1976	1133559	3196636	7357	-80664	-2.52
1977	1223565	3230212	33575	-54446	-1.69
1978	1441290	3545573	315362	227341	6.41
1979	1618878	3577720	32147	-55874	-1.56
1980	1782094	3457262	-120458	-208479	-6.03
1981	1943501	3420562	-36701	-124722	-3.65
1982	2026332	3363711	-56851	-144872	-4.31
1983	2138190	3442486	78775	-9246	-0.27
1984	2313172	3562285	119799	31778	0.89
1985	2357124	3512115	-50170	-138191	-3.93
1986	2505240	3657650	145536	57515	1.57
1987	2681578	4156446	498795	410774	9.88
1988	2765669	3761310	-395136	-483157	-12.85
1989	3082168	3975997	214687	126666	3.19
1990	3372450	4148114	172117	84096	2.03
1991	3622592	4274658	126545	38524	0.9
1992	3957809	4511902	237244	149223	3.31
1993	4144844	4600777	88875	854	0.02
1994	4300889	4644960	44183	-43838	-0.94
1995	4430761	4652299	7339	-80682	-1.73
1996	4753135	4848198	195899	107878	2.23
1997	4938967	4938967	90769	2748	0.06
1998	5191470	5087641	148674	60653	1.19
1999	5256955	5046677	-40964	-128985	-2.56
2000	5615949	5222833	176156	88135	1.69

EMPLOYMENT



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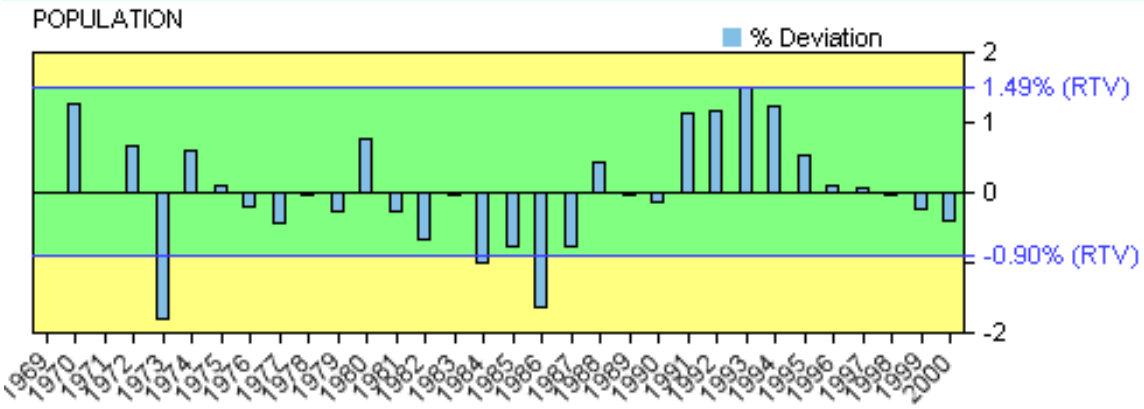
Year	Value	Change	Deviation	% Deviation
1969	72975	0	0	0
1970	73922	947	-916	-1.24
1971	72440	-1482	-3345	-4.62
1972	74567	2127	264	0.35
1973	77644	3077	1214	1.56
1974	80055	2411	548	0.68
1975	83368	3313	1450	1.74
1976	88205	4837	2974	3.37
1977	87138	-1067	-2930	-3.36
1978	90210	3072	1209	1.34
1979	94028	3818	1955	2.08
1980	94773	745	-1118	-1.18
1981	94470	-303	-2166	-2.29
1982	92893	-1577	-3440	-3.7
1983	96054	3161	1298	1.35
1984	96284	230	-1633	-1.7
1985	95954	-330	-2193	-2.29
1986	96860	906	-957	-0.99
1987	105576	8716	6853	6.49
1988	109607	4031	2168	1.98
1989	113247	3640	1777	1.57
1990	116649	3402	1539	1.32
1991	116439	-210	-2073	-1.78
1992	117371	932	-931	-0.79
1993	119744	2373	510	0.43
1994	125268	5524	3661	2.92
1995	126847	1579	-284	-0.22
1996	129144	2297	434	0.34
1997	130561	1417	-446	-0.34
1998	130216	-345	-2208	-1.7
1999	131889	1673	-190	-0.14
2000	132579	690	-1173	-0.88

POPULATION



created with ChartDirector from www.advsofteng.com

Year	Value	Change	Deviation	% Deviation
1969	165723	0	0	0
1970	170739	5016	2186	1.28
1971	173584	2845	15	0.01
1972	177586	4002	1172	0.66
1973	177208	-378	-3208	-1.81
1974	181109	3901	1071	0.59
1975	184121	3012	182	0.1
1976	186583	2462	-368	-0.2
1977	188606	2023	-807	-0.43
1978	191389	2783	-47	-0.02
1979	193722	2333	-497	-0.26
1980	198058	4336	1506	0.76
1981	200367	2309	-521	-0.26
1982	201846	1479	-1351	-0.67
1983	204590	2744	-86	-0.04
1984	205356	766	-2064	-1.01
1985	206568	1212	-1618	-0.78
1986	206063	-505	-3335	-1.62
1987	207266	1203	-1627	-0.78
1988	211029	3763	933	0.44
1989	213777	2748	-82	-0.04
1990	216313	2536	-294	-0.14
1991	221694	5381	2551	1.15
1992	227185	5491	2661	1.17
1993	233493	6308	3478	1.49
1994	239234	5741	2911	1.22
1995	243367	4133	1303	0.54
1996	246425	3058	228	0.09
1997	249429	3004	174	0.07
1998	252207	2778	-52	-0.02
1999	254487	2280	-550	-0.22
2000	256272	1785	-1045	-0.41

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